City of Troy Jurisdictional Annex to the

MULTIJURISDICTIONAL HAZARD MITIGATION PLAN

2025

RENSSELAER COUNTY | NY

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Table of Contents

List of Tables

City of Troy Annex

This section presents the jurisdictional annex for the City of Troy. The jurisdiction's governing body passed a formal resolution to participate in this multi-jurisdictional hazard mitigation plan update. A copy of their resolution is maintained at the local government offices and at the Rensselaer County Bureau of Public Safety.

Contact Information

This is the jurisdictional annex for the City of Troy. The jurisdiction's governing body passed a formal resolution to participate in updating this multi-jurisdictional hazard mitigation plan (HMP). A copy of its resolution is maintained at the local government offices and at the Rensselaer County Bureau of Public Safety.

Table 1: Contact Information for the City of Troy

Name	Title	Contact Information
Russ Reeves	City Engineer	Phone: 518-391-8285 Email: russ.reeves@troyny.gov

Introduction

The City of Troy has a fully integrated approach to hazard mitigation planning and program implementation. Table 2 lists the participants in the 2024 process for updating the HMP.

Table 2: Participants in the Hazard Mitigation Plan Update for the City of Troy

Name	Title	Jurisdiction
Russ Reeves	City Engineer	City of Troy

Jurisdiction Profile

Location and Land Area

The City of Troy is located in west Rensselaer County, in the eastern part of New York State. It shares a border with Schaghticoke to the north and Albany County to the west.

According to the 2020 U.S. Census, Rensselaer County has a total area of 665 square miles (1,720 km^2), of which 652 square miles (1,690 km^2) is land and 13 square miles (34 km^2) (1.9%) is water. Of that, City of Troy has a total area of 11.06 square miles (28.64 km^2), of which 10.36 square miles (26.83 km^2) is land and 0.70 square miles (1.81 km^2) is water.[1]

Population

According to the 2022 U.S. Census Bureau's American Community Survey (ACS) Five-Year Estimates, the population of City of Troy is estimated to be 51,268 persons.[2] The July 1, 2023 U.S Census population count shows a decreased in population to 50,607.

Demographics

Of a total area of 11.06 square miles (2020 Census data), the land area is 10.36 square miles and population per square mile is 4,949.9 persons.[3]

The population of the City of Troy includes 95.8 males per 100 females (all ages). Persons under 18 years make up 17.2% of the population, and persons 65 years and over make up 13.4% (2022 Census). Young and old subsets of the population might have unique needs for care requirements and potential cognitive and/or mobility limitations before, during, and after a disaster.

The number of persons who speak a language other than English is 5,738, or 11.6%. Persons not speaking English well might have trouble understanding instructions regarding disaster preparation, response, and recovery.

Of those 25 years old and older, 87.9% are high school graduates or higher, and 33.5% have received their bachelor's degree or higher (2022 Census data). Higher education can help enhance skills associated with cognition and evaluation of risk. Higher education can, therefore, foster an overall improved perception of risk, particularly where individuals may not have prior direct experience preparing for, responding to, or recovering from a particular hazard in their daily lives.

From 2018 to 2022 there were 21,574 total households and 2.91 persons per household. Persons living alone sometimes have less of a direct social circle for support before, during, and after a disaster.

The Census Bureau classifies all people not living in housing units (house, apartment, mobile home, rented rooms) as living in group quarters. The two types of group quarters are institutional (correctional facilities, nursing homes, mental hospitals) and non-institutional (college dormitories, military barracks, group homes, missions, shelters). The Census Bureau maintains no group quarters information for this

[1] United States Census Bureau, 2025, "City of Troy, New York American Community Survey," https://www.census.gov/quickfacts/fact/table/troycitynewyork/PST045223
[2] IBID
[3] United States Census Bureau, 2025, "City of Troy, New York Quickfacts," https://www.census.gov/quickfacts/fact/table/troycitynewyork/PST045223

municipality. The needs of persons living in group quarters are unique, and residents are likely to have access and functional needs and unique care requirements before, during, and after a disaster.

According to 2022 ACS, the median household income in the City of Troy was $54,837, and the percentage of persons in poverty was 23.3%. Lower income people have limited financial resources to draw from in both a pre- and post-disaster scenario and are likely to require support as they prepare for, and recover from, hazard events.

Non-institutionalized civilians with a disability accounted for 14.0%, and percentage of people over age 65 with a disability accounted for 22.4%. Persons (civilian, non-institutionalized) without health insurance were 4.0% of the population. Persons with disabilities have access and functional needs, such as cognitive or mobility limitations, that may put them at greater risk before, during, and after a hazard event.

Brief History

The area that is now Rensselaer County was inhabited by the Algonquian-speaking Mohican Indian tribe at the time of European encounter. Kiliaen van Rensselaer, a Dutch jeweler and merchant, purchased the area in 1630, as part of the Dutch colony New Netherland. The land passed from English rule (1664) to Dutch control (1673), then back to English rule (1674), until American independence in 1776. Rensselaer County was created in 1790s from an area that was originally part of the very large Albany County. In 1807 the county reorganized.[4]

City of Troy area had long been occupied by the Mahican Indian tribe, but Dutch settlement began in the mid-seventeenth century. The Dutch colony was conquered by the English in 1664. In 1789, Troy adopted its present name following a vote of the people. Troy was incorporated as a town two years later and extended east across the county to the Vermont line, including Petersburgh. In 1796, Troy became a village and in 1816, it became a city. Lansingburgh, to the north, became part of Troy in 1900. Due to the confluence of major waterways and a geography that supported water power, the American Industrial Revolution took hold in this area, making Troy reputedly the fourth wealthiest city in America around the turn of the twentieth century.[5]

Governing Body

The governing body of the municipality consists of a Mayor and City Council, composed of seven elected members serving two-year terms. This council serves as the municipal/local government, performing executive functions of different natures. Members of this governing body are elected by the people.

Growth and Development Trends

Performing an assessment of growth and development trends is one step of a hazard mitigation plan update. This look into the future is important because development in hazard areas could put more

[4] 2020 Rensselaer County Hazard Mitigation Plan, "City of Troy Annex"
[5] IBID

people and property in harm's way and, in turn, could increase potential disaster-related damage and losses at a time when the mitigation plan's purpose is to reduce the potential for damage from natural disasters.

An evaluation of growth and development trends was undertaken by each participating jurisdiction as part of the development of the initial plan in 2011. As part of this plan update, the City of Troy reviewed and updated its prior feedback to reflect current conditions in the community as of early 2019.

The City of Troy did note major residential or commercial development taking place, or any major infrastructure development planned for the next five years in the municipality. Several multi-story residential buildings are planned or being redeveloped; the only new building of note will be located at First and Ida Streets.

The City of Troy enforces local laws to protect new development from the effects of natural hazards. All new development within the flood zone is reviewed by fire department, engineering, public utilities and public works staff, and must comply with all flood zone regulations.

Hazard Identification

The Calculated Priority Risk Index (CPRI) is a comprehensive assessment tool used to evaluate and prioritize risks in a given context. It considers various factors, such as probability, impact, and urgency, to determine the level of risk associated with particular events or situations. By considering these variables, the CPRI helps organizations and individuals make informed decisions about risk management and mitigation strategies. It provides a systematic approach to identifying and addressing potential issues, allowing for more efficient allocation of resources and proactive risk prevention. With the CPRI, stakeholders can prioritize their focus on the most critical risks, leading to more effective risk management and, ultimately, better outcomes. Table 3 shows the factors for calculating the CPRI.

Table 3: Factors in the Calculated Priority Risk Index

Risk Index Factor	Degree of Risk Level		Criteria	Factor Weight for Degree of Risk Level
Probability **What is the likelihood of the hazard occurring?**	1	Unlikely	Less than 1% probability of occurrence in the next year or a recurrence interval of greater than every 100 years.	30%
	2	Occasional	1%–10% probability of occurrence in the next year or a recurrence interval of 11–100 years.	

Risk Index Factor	Degree of Risk Level		Criteria	Factor Weight for Degree of Risk Level
	3	Likely	11%–90% probability of occurrence in the next year or a recurrence interval of 1–10 years.	
	4	Highly Likely	91%–100% probability of occurrence in the next year or a recurrence interval of less than 1 year.	
Potential Consequences **What will be the overall impact in terms of injuries, damage, death, continuity of operations, and environmental and economic impacts?**	1	Negligible	Very few injuries, if any. Only minor property damage and minimal disruption of quality of life. Temporary shutdown of critical facilities.	30%
	2	Limited	Minor injuries only. More than 10% of property in affected area damaged or destroyed. Complete shutdown of critical facilities for more than one day.	
	3	Critical	Multiple deaths/injuries possible. More than 25% of property in affected area damaged or destroyed. Complete shutdown of critical facilities more than one week.	
	4	Catastrophic	High number of deaths/injuries possible. More than 50% of property in affected area damaged or destroyed. Complete shutdown of critical facilities for 30 days or more.	
Warning Time **How long will be there be between when it is recognized the hazard is approaching and when the hazard will begin to affect the community?**	1	Self-defined	More than 24 hours	10%
	2	Self-defined	12–24 hours	
	3	Self-defined	6–12 hours	
	4	Self-defined	Less than 6 hours	
Duration **What is the length of time the hazard will remain active,**	1	Brief	Up to 6 hours	10%
	2	Intermediate	Up to one day	
	3	Extended	Up to one week	

Risk Index Factor	Degree of Risk Level		Criteria	Factor Weight for Degree of Risk Level
including how long emergency operations will need to continue after the hazard event?	4	Prolonged	More than one week	
Spatial Extent How large of an area could be impacted by a hazard event? Are impacts localized or regional?	1	Negligible	Less than 1% of area affected	20%
	2	Small	1%–25% of area affected	
	3	Moderate	25%–50% of area affected	
	4	Large	Greater than 50% of area affected	

RISK FACTOR EQUATION

RF Value = [(Probability x .30) + (Magnitude x .30) + (Onset x .10) + (Duration x .10) + (Frequency x .20)]

Table 4 presents the CPRI for the City of Troy with respect to the different hazards the jurisdiction might experience.

Table 4: Types of Hazard Events with Calculated Priority Risk Index for the City of Troy

Type of Hazard Event	Probability	Potential Consequences	Warning Time	Duration	Spatial Extent	Risk Factor Value
Dam Failure	2	2	4	4	2	2.4
Drought	2	1	1	4	2	2.1
Earthquake	3	1	4	1	1	1.9
Extreme Temperature	3	1	1	3	4	2.4
Flooding	3	2	1	3	2	2.3
High Winds	3	2	1	2	3	2.4
Hurricane or Tropical Storm	3	3	1	3	3	2.8
Landslide	3	2	4	4	1	2.5
Lightning	1	1	3	2	1	1.3

Type of Hazard Event	Probability	Potential Consequences	Warning Time	Duration	Spatial Extent	Risk Factor Value
Tornado	2	2	2	4	3	2.4
Wildfire	1	1	3	2	1	1.3
Winter Storm	3	2	1	4	4	2.8

Hazard Event History

Understanding hazard event histories is crucial for effective risk management. Analyzing past events allows us to identify trends, patterns, and recurring risk factors. This knowledge enables us to better prepare for and mitigate the impact of future hazards. Examining hazard event histories provides valuable insights to inform decision-making and help prioritize resources for risk prevention and response efforts. Table 5 lists some of the more notable events in the City of Troy for events since the 2020 plan update.

Table 5: Notable Hazard Events in the City of Troy Since 2020

Type of Hazard Event	FEMA Disaster # (If Applicable)	Date(s)	Damage or Impacts	Description
Drought	None	None	None	None
Earthquake	None	04/05/2024	No reported impacts	Earthquake with epicenter in NJ, felt in some parts of the county
Extreme Temperature	None	07/20/2019	Heat index values in the 100°F–110°F range in the warmest spots of the Hudson Valley.	Extreme Heat
	None	08/12/2021	Heat indices reached 95°F–104°F across parts of the Hudson River from Albany and points southward reaching 105°F–110°F.	Extreme Heat
	None	01/20/2019	Cold weather prompted the closing of schools and the opening of warming shelters across the region.	Extreme Cold: Behind an arctic cold front, bitter cold air, winds chill values to be as low as -40 degrees below zero
	None	01/30/2019	The wind chills prompted many schools to close or delay opening, and there were several reports of water main breaks due to the cold.	Extreme Cold, some temperatures were as cold as -30 degrees below zero.
	None	02/03/2023–02/04/2023	Warming centers were opened.	Extreme Cold: Wind chill values reached -15 to -45 degrees below zero

Type of Hazard Event	FEMA Disaster # (If Applicable)	Date(s)	Damage or Impacts	Description
Extreme Temperature (cont.)	None	07/14/2021	Many roads and bridges were washed out, and there was minor damage to many homes and businesses, damage estimates in the millions.	Extreme Cold: Wind chills fell to 20 to 40 degrees below zero across most of the region.
	None	02/04/2022	Hit flood gauge but no reported damages, 1.4- 3.8 in snow reported	Extreme Cold: Wind chills fell to -15 to -35 degrees below zero.
	None	04/10/2022	Action initiated at 21 ft, flooding reached 23.44ft	Arctic Cold: With extreme wind chills some squalls; temperatures ranging from -18 to -39 below zero with wind gusts up to 44 mph in the region.
Flooding (Including Flooding, Dam Failure, and Ice Jams)	None	07/14/2021	Many roads and bridges were washed out, and there was minor damage to many homes and businesses with damage estimates in the millions.	Heavy Flash Flooding: 2–5 in fell in 2 hrs.
	None	02/04/2022	Ice jam hit flood gauge but no reported damages, 1.4–3.8 in snow reported.	Ice Jam: Eagle Bridge, Rt-67, freezing rain and prolonged period of sleet
	None	04/10/2022	Action initiated at 21 ft, flooding reached 23.44 ft	Flooding of Hudson River at Troy
	None	07/24/2023	Washed out section of Garfield Rd and private residence	Town of Stephentown had breach of William Miaski Dam
Hazardous Materials	None	None	None	None

Type of Hazard Event	FEMA Disaster # (If Applicable)	Date(s)	Damage or Impacts	Description
High Wind	None	02/17/2022–02/18/2022	Downed tree branches and power lines, some power outages	High wind event with icing
	None	03/07/2022–03/08/2022	National grid power outages throughout county	High wind event
Hurricane or Tropical Storm	None	08/04/2020	Flooding/flash flooding in flood prone areas	Tropical Storm Isaias
Landslide	None	03/11/2024	Emergency declaration issued, 5 power poles were damaged in the landslide, many trees were downed, caused gas leak, road was closed for 2 weeks while crews did repairs	Landslide on Spring Avenue in City of Troy
Lightning	None	None	None	None
Terrorism	N/A	None	None	None
Tornado	None	None	None	None
Utility & Infrastructure Failure	N/A			Water main break on Talyr Ln, affecting Eastern Troy
Wildfire	None	None	None	None
Winter Storm (Including Ice Storm and Snowstorm)	None	12/16/2020–12/17/2020	Downed trees and power lines from weight of snow	Snowfall in Rensselaer County ranging from 17.3 in to 26 in
	None	12/15/2022–12/17/2022		Nor'easter, snowfall ranging from 1 in in Petersburgh to 12 in in Grafton

Type of Hazard Event	FEMA Disaster # (If Applicable)	Date(s)	Damage or Impacts	Description
Winter Storm (cont.)	None	03/13/2023–03/15/2023	Downed trees and power lines with widespread power outages	Nor'easter, heavy wet snow, accumulations from 12 in in North Greenbush to 31 in in Petersburgh
	None	03/22/2024–03/23/2024	State of emergency was declared due to significant power outages throughout county with many trees down and power lines down, leading to many road closures throughout county.	Long period of rain, followed but freezing rain and sleet and then freezing temperatures; up to 0.5 in ice and snow accumulations ranging from 4 in to 11.5 in

According to the National Centers for Environmental Information (NCEI)[6] at the National Oceanic and Atmospheric Administration (NOAA), the notable events in the [Jurisdiction Name] since [year] include the following:

- **January 25, 2019** – Heavy Rain/Snow Melt Flooding: Following a heavy snowfall event January 19–20 over much of eastern New York, a strong low pressure system tracking through southern Canada ushered in an unseasonably warm and moist airmass on January 24. Temperatures surged into the 40s to mid-50s. Steady rainfall fell during much of the January 24 as a secondary low pressure system developed over the Mid-Atlantic and tracked into southern New England. One to two inches of rainfall occurred over much of the region, although a few reports of three to four inches were recorded over portions of the southern Adirondacks and the eastern Catskills. New daily rainfall records were set at Albany, Glens Falls, and Poughkeepsie.

  The combination of the rainfall along with the mild temperatures melting some of the snow resulted in urban and poor drainage flooding over portions of the region along with minor to moderate river flooding in the Hoosic basin. Some ice jam flooding also occurred. Numerous road closures also occurred due to flooding in Washington County, NY. In addition, seven vessels along the Hudson River near Troy were ripped from their moorings during the early morning of January 25, likely by a surge of water and ice from upstream. Some of these vessels struck bridges, resulting in bridge closures during the morning rush hour, including the Patroon Island Bridge, which carries Interstate 90 over the Hudson.

  A surge of ice and water from the prior day's heavy rain and snowmelt moved down the Hudson River and tore a total of ten vessels lose from their moorings above the Federal Dam in Troy during the predawn hours of January 25. The vessels included tugboats, barges, a cruise ship, and a floating restaurant. Some of the vessels struck bridges, some ran aground, and at least one sank. The loose vessels prompted the closing of several bridges between Troy and Albany over the Hudson during the morning rush hour, including the Patroon Island Bridge that carries Interstate 90. Amtrak trains crossing the river were forced to reduce their speed as a precaution. The vessels were secured by 11 a.m. Damage amounts were estimated at $350,000.

- **June 26, 2019 –** Thunderstorm Wind: An upper level trough and embedded disturbance moved through the region during the late afternoon and evening hours of Wednesday, June 26, 2019. The passage of these features allowed for strong to severe thunderstorms to develop, resulting in numerous reports of trees and power lines down. A microburst also occurred in the town of Mechanicville, with dozens of trees snapped and a little league dugout destroyed by the wind. Tree branches were downed onto power lines.

- **August 21, 2019** – Flooding: Multiple severe weather hazards occurred during the afternoon and evening hours of Wednesday, August 21, 2019, due to a strong upper-level shortwave moving into a

[6] National Oceanic and Atmospheric Administration (NOAA) National Centers for Environmental Information (NCEI). 01/01/2011–09/30/2024. "Rensselaer County, New York." https://www.ncdc.noaa.gov/stormevents/listevents.jsp?eventType=ALL&beginDate_mm=01&beginDate_dd=01&beginDate_yyyy=2011&endDate_mm=09&endDate_dd=30&endDate_yyyy=2024&county=RENSSELAER%3A83&hailfilter=0.00&tornfilter=0&windfilter=000&sort=DT&submitbutton=Search&statefips=36%2CNEW+YORK.

humid and unstable airmass, resulting in multiple severe thunderstorms, flooding, and two confirmed tornadoes with damage across much of the region. Over 10,000 people lost power. Several inches of water rushed down Sixth Street, Federal Street, and Hoosick Street. There were also a few feet of standing water in places downtown Troy. Roadways were closed due to damage and debris on Federal Street, Sage Avenue, and Peoples Avenue.

- **July 14, 2021** – Flooding: Slow-moving thunderstorms stayed over Rensselaer County during the afternoon of July 14, resulting in 2 to 5 inches of rainfall over two to three hours over central and southern portions of the county. The runoff from the rainfall washed out or destroyed numerous roads and bridges, some of which would take weeks to months to reconstruct. Damages to roads and bridges totaled around $3 million, according to county officials. The Rensselaer County Executive declared a state of emergency and urged no unnecessary travel after the storms. Governor Hochul requested a Physical Disaster Declaration from the Small Business Administration, citing major damage to 18 homes and 9 businesses totaling $1.895 million, and minor damage to 281 homes and 14 businesses totaling $2.3 million. Some of the storms also produced wind damage with reports of trees and power lines down. There were several reports of roads flooded and washed out in the Poestenkill area, including Plank Road, Snyders Corner Road, and Blue Factory Road.
- **August 12, 2021** – Thunderstorm Wind: The continuation of a hot and humid air mass caused the development of another batch of showers and thunderstorms during the afternoon hours across eastern New York, mainly impacting the Capital District. Damaging wind gusts knocked down trees and power lines as a result. Lightning also struck a house on Old Loudonville Road in the Hamlet of Loudonville, causing a fire. A large tree was downed across North Lake Avenue and Kestner Lane near Sycaway.
- **March 13, 2023** – Winter Storm: A powerful Nor'easter resulted in widespread moderate to heavy wet snow and gusty winds across eastern New York March 13-March 15, 2023. Anywhere from 15 to 30 inches of snow with locally higher amounts in excess of 30 inches fell over the SW Adirondacks and eastern Catskills. Valley locations received lesser amounts with totals generally ranging between 7 to 15 inches. A few locations across the western Mohawk Valley and mid-Hudson Valley received less than 6 inches of snow.

  Numerous downed trees and power lines resulted in widespread power outages. According to the National Grid, approximately 141,000 customers lost power within the state of New York with most occurring within the county warning area. Some locations were without power for at least 1 or 2 days. Several warming stations opened to assist those without power. This event led to the closing of many school districts, and resulted in chain-up laws and bans of empty tractor trailers and/or tandems on some area interstates. A state of emergency was issued for several jurisdictions as a result of the storm. The key impacts were power outages, school closures, car accidents, and travel restrictions.
- **March 22, 2024** – Winter Storm: The complex interaction of a northern stream shortwave and a southern stream coastal low-pressure system brought widespread snow (moderate to heavy in places), freezing rain, and rain to eastern New York from the evening of Friday, March 22, through the evening of Saturday, March 23, 2024. The heaviest snow fell across areas mainly north of Interstate 90 where totals of 7 to 20 inches were common. To the south, 4 to 8 inches of snow fell from portions of the Schoharie Valley eastward to the Capital District into eastern Rensselaer County. Snowfall amounts

of 5 inches or less fell farther south. Freezing rain accumulations were primarily focused across the Capital District where some flat ice accumulations of over 0.50 inches were observed.

Nearly 100,000 people lost power from this storm, with most of these in the Capital District as the weight of the ice and snow snapped numerous trees, branches, and power lines. Some municipalities were without power for multiple days. Albany and Rensselaer county officials declared states of emergency. Numerous accidents were also reported and area schools were forced to close. Road closures (from accidents, hazardous conditions, or downed trees and power lines) led to travel delays. The key impacts were power outages, school closures, traffic accidents, and travel delays.

National Flood Insurance Program (NFIP) Summary

The National Flood Insurance Program (NFIP) is a Federal Emergency Management Agency (FEMA) program that provides flood insurance to millions of policyholders across the country. The following information is provided to meet federal standards. The City of Troy answered the NFIP questions in Table 6 through Table 8 to the best of its ability.

Table 6: Responses on Floodplain Management from the City of Troy

Question	Response
Who is the floodplain manager? Is this their primary or secondary role?	The Director of Code Enforcement is the Floodplain Manager.
Does the floodplain manager have adequate training and capacity for their role? If not, what else is needed?	It is recommended that the Director of Code Enforcement obtain FEMA Floodplain manager certification.
How does the community enforce its floodplain rules? Does enforcement include monitoring compliance and acting to correct violations?	The city requires a floodplain elevation certification prepared by a licensed surveyor for any structure located within 100 year floodplain. The city enforces this requirement with monitoring compliance and ensures that all violations are corrected.
When was the community's most recent Community Assistance Visit (CAV)?	March 2024
Were any violations noted on the community's most recent CAV?	No violations were noted.
Is there an upcoming CAV? If no, is one needed?	No
When was the most recent floodplain management ordinance adopted?	It was adopted before 1987.
Does your community participate in the Community Rating System (CRS)? If so, describe the steps the community has taken to achieve the CRS goals.	No. The city doesn't participate in the CRS.

Question	Response
Does the community's floodplain management ordinance include any higher standards? If so, please list.	The city enforces the requirements of the NYS 2020 IBC Building code for floodplain management and FEMA and HUD's federal floodplain regulations.
Who is responsible for permitting?	The Department of Code Enforcement
How does the community issue development permits in the special flood hazard area?	The city issues permits for existing structures only that are located in a special flood hazard area and must comply with ASCE 24-14 Flood Resistant Design and construction.
Does the community maintain elevation certificates?	Yes
Does the community track the number of buildings in the special flood hazard area? If yes, are there any trends?	No
How many repetitive loss (RL) structures does the community have? (List number and type of structure.)	Six, all residential structures
How many severe repetitive loss (SRL) structures does the community have? (List number and type of structure.)	None
Have any RL/SRL properties been mitigated since the last plan update?	None
Who is responsible for making substantial damage/substantial improvement determinations?	City Engineer and the Director of Code Enforcement
How does the substantial damage/substantial improvement process work in your community?	Drawings for remediation are reviewed and approved by Code Enforcement Personnel and the City Engineer.
Is there sufficient staff and training to make substantial damage/substantial improvement determinations?	All certified code officers are trained by New York State continuing education and mandatory training.
How are substantial damage/substantial improvement requirements messaged to the public before and after an event?	Public notices and social media outlets
Have any substantially damaged/substantially improved structures been mitigated since the last plan update?	None

Question	Response
How will the community remain in compliance with the NFIP moving forward? (Simply stating "the community will continue to comply with the NFIP" will not meet FEMA's planning requirements.)	The City of Troy will participate in the Community Rating System and NFIP training program to ensure compliance.

Table 7: Responses on Floodplain Mapping from the City of Troy

Question	Response
How does the community support map change requests? This could be requests during the Risk MAP process or through Letters of Map Amendment or Revision.	City will review and make changes if necessary.
When did the latest Flood Insurance Rate Map (FIRM) become effective?	Before 1987
When was the latest FIRM adopted?	3/6/1980
Is the FIRM and Flood Insurance Study (FIS) report in an accessible location? How would the public get access to their flood map information?	Through the Troy Public Library
Does the community use any Risk MAP products? If so, describe.	Yes, the Flood Insurance Rate Maps
Does the community collect updated floodplain data or modeling? Is this shared with partners and with FEMA?	No. The city would like to participate in any data collection or modeling done.
Other comments?	None

Table 8: Responses on Flood Insurance and Outreach from the City of Troy

Question	Response
How does the community educate the public on floodplain management and the availability of flood insurance, in and out of the floodplain?	Through the Code Enforcement Department
How does the community engage with insurance agents on flood insurance?	Through online services
Does the community (or state) have flood hazard disclosure laws?	NYS does, but not the city

Question	Response
How familiar is the public with their flood insurance options?	Not very
How many properties have flood insurance in the community?	306
Are there any areas where flood insurance is lacking?	Yes
Other comments?	None

Critical Facilities Information

The following information is provided to meet standard F1. Identifying critical facilities in flood-prone areas is crucial for effective emergency planning and risk management. By understanding the potential impact of flooding on these facilities, local authorities can develop proactive strategies to mitigate risks and ensure the safety and functionality of these important assets during flood events. This information is valuable for decision-making and prioritizing resources for emergency response and preparedness efforts. Table 9 lists the critical facilities (emergency facilities, critical infrastructure and utilities, and other key facilities, as presented in Risk Assessment) that are in the floodplain in the City of Troy.

Table 9: Critical Facilities Located in the Floodplain in the City of Troy

Critical Facility	Type of Facility	Jurisdiction	1% Chance? Zone AE	0.2% Chance? Zone X (Shaded)	How has this facility been protected from flooding?	Feasibility of Mitigating the Flood Risk
Unnamed	Bus	City of Troy	No	No		
Unnamed	Bus	City of Troy	No	Yes	No	Not feasible due to little change in grade
Unnamed	Bus	City of Troy	No	Yes	No	Not feasible due to little change in grade
HVCC Cogen Plant	Electric Power	City of Troy	No	No	N/A	N/A
Mt Ida Hydroelectric	Electric Power	City of Troy	No	No	N/A	N/A
Rensselaer Emergency Operations Center	Emergency Operation Centers	City of Troy	No	Yes	No	Not feasible
Troy Fire Department Bouton Road Station	Fire Stations	City of Troy	No	No	N/A	N/A
Troy Fire Department Canal Avenue Station...	Fire Stations	City of Troy	No	Yes	No	Not feasible
Troy Fire Department Central Fire Station...	Fire Stations	City of Troy	No	No	N/A	N/A
Troy Fire Department Lansingburgh Station...	Fire Stations	City of Troy	No	Yes	No	Fire station is being relocated.
Troy Fire Department North Street Station...	Fire Stations	City of Troy	No	No	N/A	N/A

Critical Facility	Type of Facility	Jurisdiction	1% Chance? Zone AE	0.2% Chance? Zone X (Shaded)	How has this facility been protected from flooding?	Feasibility of Mitigating the Flood Risk
Troy Fire Department Station 3 Campbell..	Fire Stations	City of Troy	No	No	N/A	N/A
Eddy Heritage House Nursing and Rehabilitation Center	Medical Care	City of Troy	No	No	N/A	N/A
Eddy Memorial Geriatric Center	Medical Care	City of Troy	No	No	N/A	N/A
Samaritan Hospital	Medical Care	City of Troy	No	No	N/A	N/A
Samaritan Hospital St Mary's	Medical Care	City of Troy	No	No	N/A	N/A
South Troy Primary Care Center	Medical Care	City of Troy	No	No	N/A	N/A
Sunnyview Therapy Services at Hudson Valley Plaza	Medical Care	City of Troy	No	No	N/A	N/A
The Burdett Care Center	Medical Care	City of Troy	No	No	N/A	N/A
The Eliot at Troy	Medical Care	City of Troy	No	No	N/A	N/A
The Pines at Heartwood	Medical Care	City of Troy	No	No	N/A	N/A
The Terrace at the Eddy Memorial	Medical Care	City of Troy	No	No	N/A	N/A
Troy Adult Home	Medical Care	City of Troy	No	No	N/A	N/A
Troy Center for Rehabilitation and Nursing	Medical Care	City of Troy	No	No	N/A	N/A

Critical Facility	Type of Facility	Jurisdiction	1% Chance? Zone AE	0.2% Chance? Zone X (Shaded)	How has this facility been protected from flooding?	Feasibility of Mitigating the Flood Risk
Troy Health Center	Medical Care	City of Troy	Yes	No	No	Not feasible
Troy Veterans Affairs Clinic	Medical Care	City of Troy	Yes	No	No	Not feasible
Chevron Products Co	Oil	City of Troy	No	No	N/A	N/A
Rensselaer County Jail / Rensselaer City...	Police Stations	City of Troy	No	Yes	No	Existing structure is slab-on; jail is out of 100-year floodplain.
Rensselaer Polytechnic Institute Department...	Police Stations	City of Troy	No	No	N/A	N/A
Troy City Police Department - Headquarters...	Police Stations	City of Troy	No	No	N/A	N/A
Troy City Police Department - North Station...	Police Stations	City of Troy	No	No	N/A	N/A
Troy City Police Department - South Staion...	Police Stations	City of Troy	No	Yes	No	N/A
Troy Housing Authority Dept Of Public Safety...	Police Stations	City of Troy	No	No	N/A	N/A
Troy Police Department	Police Stations	City of Troy	No	No	N/A	N/A
Chevron U.S.A. Troy Terminal Dock	Ports	City of Troy	No	Yes	N/A	No longer operational

Critical Facility	Type of Facility	Jurisdiction	1% Chance? Zone AE	0.2% Chance? Zone X (Shaded)	How has this facility been protected from flooding?	Feasibility of Mitigating the Flood Risk
Dock	Ports	City of Troy	Yes	No	N/A	No longer operational
Dock	Ports	City of Troy	No	No	N/A	N/A
King Service South Troy Plant Dock	Ports	City of Troy	No	Yes	No	No longer operational
Troy Terminal Dock	Ports	City of Troy	Yes	No	No	N/A
U. S. Army Corps Of Engineers Wharf	Ports	City of Troy	Yes	No	No	Federal dam fixed structure
Troy Water Filtration Plant	Potable Water	City of Troy	No	No	N/A	N/A
Boces Robert H Gibson Technical School	Schools	City of Troy	No	No	N/A	N/A
Carroll Hill School	Schools	City of Troy	No	No	N/A	N/A
Catholic Central High School	Schools	City of Troy	No	No	N/A	N/A
Emma Willard School	Schools	City of Troy	No	No	N/A	N/A
Hudson Valley Community College	Schools	City of Troy	No	No	N/A	N/A
Kipp Troy Preparatory Charter School	Schools	City of Troy	Yes	No	No	Fixed structure, not feasible
Knickerbacker Middle School	Schools	City of Troy	No	No	N/A	N/A

Critical Facility	Type of Facility	Jurisdiction	1% Chance? Zone AE	0.2% Chance? Zone X (Shaded)	How has this facility been protected from flooding?	Feasibility of Mitigating the Flood Risk
Lansingburgh Senior High School	Schools	City of Troy	No	No	N/A	N/A
PS 12	Schools	City of Troy	Yes	No	No	Fixed structure
PS 14	Schools	City of Troy	No	No	N/A	N/A
PS 16	Schools	City of Troy	No	No	N/A	N/A
PS 18	Schools	City of Troy	No	No	N/A	N/A
PS 2	Schools	City of Troy	No	No	N/A	N/A
Redemption Christian Academy	Schools	City of Troy	No	No	N/A	N/A
Rensselaer Park Elementary School	Schools	City of Troy	No	No	N/A	N/A
Rensselaer Polytechnic Institute	Schools	City of Troy	No	No	N/A	N/A
Russell Sage College	Schools	City of Troy	No	No	N/A	N/A
Sacred Heart School	Schools	City of Troy	No	No	N/A	N/A
Samaritan Hospital School of Nursing	Schools	City of Troy	No	No	N/A	N/A
Susan Odell Taylor School for Children	Schools	City of Troy	No	No	N/A	N/A
Troy High School	Schools	City of Troy	No	No	N/A	N/A
Troy Middle School	Schools	City of Troy	No	No	N/A	N/A

Critical Facility	Type of Facility	Jurisdiction	1% Chance? Zone AE	0.2% Chance? Zone X (Shaded)	How has this facility been protected from flooding?	Feasibility of Mitigating the Flood Risk
True North Troy Prep Elementary School	Schools	City of Troy	No	No	N/A	N/A
True North Troy Preparatory Charter S...	Schools	City of Troy	No	No	N/A	N/A
Turnpike Elementary School	Schools	City of Troy	No	No	N/A	N/A
Combined Sewer Overflows	Waste Water	City of Troy	No	No	N/A	N/A
Rock Salt Storage Facility - Troy	Waste Water	City of Troy	Yes	No	No	Facility is being relocated.
Troy - C Combined Sewer Overflows	Waste Water	City of Troy	Yes	No	No	Changed as part of future project

Jurisdiction/Public Identified Vulnerabilities

Table 10 provides crucial information on critical facilities in the City of Troy, highlighting the city's vulnerability to identified hazards. It outlines the susceptibility of assets to damage from the identified hazards, offering valuable insights into their potential impact on these essential facilities. By understanding the risks to these assets, local authorities can develop proactive strategies to mitigate the vulnerabilities and ensure the safety and functionality of these important assets during hazard events. This data is invaluable for decision-making and prioritizing resources for emergency response and preparedness efforts, ultimately contributing to more effective risk management and building the resilience of the community.

Table 10: Vulnerable Assets in the City of Troy

Vulnerable Assets	What makes this group/asset vulnerable during hazards? Have there ever been issues with recovery after an event?
People (residents, workers, visiting populations, and socially vulnerable populations like seniors, individuals with disabilities, lower-income individuals, etc.)	
Approximately 12% of the population of the City of Troy resides in the 100-year floodplain.	Basements often flood in low income areas.
Structures (residential, commercial, industrial, government-owned, planned capital improvement, etc.)	
7,066 acres of land area in the municipality	N/A
1,054 acres in the 100-year floodplain (15% of land area)	N/A
Economic Assets (major employers, primary economic sectors, critical infrastructure like telecommunications networks, etc.)	
Approximately 8% of improved property in the City of Troy is located in the 100-year floodplain, totaling $11,211,809,000 replacement cost value (RCV) structure and contents.	N/A
RCV $885,055,654 in the 100-year floodplain (8% RCV)	N/A
Natural, Historical, and Cultural Resources (conservation areas, beaches, parks, critical habitats, community centers, historic places, etc.)	
Burden Ironworks Office Building	N/A
Central Troy Historic District	N/A
Herman Melville House	N/A
McCarthy Building	N/A
National State Bank Building	N/A
Northern River Street Historic District	N/A

Vulnerable Assets	What makes this group/asset vulnerable during hazards? Have there ever been issues with recovery after an event?
Poesten Kill Gorge Historic District	N/A
Powers Home	N/A
Public School No. 10	N/A
River Street Historic District	N/A
Trinity Church	N/A
Troy Gas Light Company	N/A
Washington Park Historic District	N/A
Critical Facilities and Infrastructure (hospitals, law enforcement, water, power, transportation systems, etc.)	
None	N/A
Community Activities (major local events, such as festivals, or economic events, like farming or fishing)	
None	N/A
Are there any other assets that you can think to include?	
None	

Additional Public Involvement

As part of this 2025 plan update, the City of Troy undertook various activities to (a) alert the public and other stakeholders to the fact that the HMP Planning Committee was developing the update and (b) provide the public and other stakeholders with a forum to ask questions and submit comments and suggestions on the process. Table 11 presents the outreach activities undertaken by the City of Troy for the 2025 plan update.

Table 11: Outreach Activities Undertaken by the City of Troy

Activity Date	Type of Activity	Activity Details	Department and/or Staff Member
April 2024–September 2024	Survey	The survey was distributed online and via physical flyers at City Hall and local areas such as libraries.	Mayor's Office

Capabilities Assessment

Local mitigation capabilities are essential for reducing the impact of hazards on communities. Local authorities can effectively mitigate hazards by leveraging existing authorities, policies, programs, and resources. These capabilities encompass a range of strategies, such as land use planning, building codes and enforcement, public education and outreach, infrastructure protection, and natural resource protection. Through collaboration with various stakeholders, including emergency management agencies, public works departments, and environmental organizations, local communities can implement comprehensive mitigation efforts to minimize the impact of disasters. Table 12 through Table 15 provide the capabilities of the City of Troy.

Planning and Regulatory

Planning and regulatory capabilities are the plans, policies, codes, and ordinances that prevent and reduce the impacts of hazards.

Table 12: Planning and Regulatory Capabilities of the City of Troy

Regulatory Tools (Codes, Ordinances, Plans)	In Place (Y or N)	How has or could this resource be used for hazard mitigation?
Building code	Y	Utilized to prevent potential issues or hazards from occurring
Zoning ordinance	Y	Utilized to prevent potential issues or hazards from occurring
Subdivision ordinance or regulations	Y	Planning department to make sure analysis occurs so sites are viable for construction. Encourages growth in areas less flood, wildfire or landslide prone. Minimizes impacts from natural disasters.
Special purpose ordinances (floodplain management, stormwater management, hillside or steep slope ordinances, wildfire ordinances, hazard setback requirements)	Y	Floodplain Management, Stormwater Management., Setback RQMTS
Growth management ordinances (also called "smart growth" or anti-sprawl programs)	Y	Planning Ordinance
Site plan review requirements	Y	Zoning Ordinance

Regulatory Tools (Codes, Ordinances, Plans)	In Place (Y or N)	How has or could this resource be used for hazard mitigation?
General, comprehensive or master plan	Y	Realize Troy Comprehensive Plan 2018
Capital improvements plan	N	Submit as part of annual budget
Economic development plan	N	N/A
Emergency response plan	Y	City Disaster Preparedness Plan
Post-disaster recovery plan	Y	City Disaster Preparedness Plan
Post-disaster recovery ordinance	Y	City Disaster Preparedness Plan
Real estate disclosure requirements	Y	NYS FOIL
Other	None	N/A

Administrative and Technical

Administrative and technical capabilities include staff and their skills.

Table 13: Administrative Capabilities of the City of Troy

Staff/Personnel Resources	Available (Y or N)	How has or could this resource be used for hazard mitigation?
Planner(s) or engineer(s) with knowledge of land development and land management practices	Y	Land development professionals can mitigate hazards by incorporating risk assessments, resilient infrastructure, sustainable land use planning, and environmental conservation into their designs to reduce vulnerability to natural disasters and promote community safety.
Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure	Y	All new construction has to follow NYS IBC 2020, including features for stormwater, earthquake, and lateral loads that must be checked to make sure requirements are met before building.
Planners or engineer(s) with an understanding of natural and/or human-caused hazards	Y	Planners and engineers with knowledge of hazards can mitigate risks by designing safe land use, resilient infrastructure, and adaptive strategies to reduce the impact of natural and human-caused disasters.

Staff/Personnel Resources	Available (Y or N)	How has or could this resource be used for hazard mitigation?
Floodplain manager	Y[7]	The Floodplain Manager is Code Enforcement officer and makes sure regulations are followed.
Surveyors	N	N/A
Staff with education or expertise to assess the community's vulnerability to hazards	Y	Staff with expertise in assessing community vulnerability can identify at-risk areas, evaluate potential impacts of hazards, and recommend strategies for reducing risks.
Personnel skilled in GIS and/or HAZUS	Y	GIS mapping personnel employed by city, which also has access to county resources.
Scientists familiar with the hazards of the community	N	N/A
Emergency manager	N	N/A
Grant writers	N	Part-time grant writer
Staff with expertise or training in benefit/cost analysis	N	N/A

Financial

Financial capabilities are the resources to fund mitigation actions.

Table 14: Financial Capabilities of the City of Troy

Financial Resources	Accessible or Eligible to Use (Yes/No/Don't Know)	How has or could this resource be used for hazard mitigation?
Community Development Block Grant (CDBG)	Y	Planning department
Capital improvements project funding	Y	Capital improvement project funding can be used for hazard mitigation by financing infrastructure upgrades to reduce the impact of natural disasters.

[7] All communities participate in the National Flood Insurance Program; as such, they are required by the regulations to have an appointed floodplain manager.

Financial Resources	Accessible or Eligible to Use (Yes/No/Don't Know)	How has or could this resource be used for hazard mitigation?
Authority to levy taxes for specific purposes	Y	The authority to levy taxes for specific purposes can be used for hazard mitigation by generating dedicated funding to support projects like infrastructure improvements, emergency preparedness, and resilience-building efforts in high-risk areas.
Fees for water, sewer, gas, or electric service	Y	Yes (for sewer only; gas and electric are private)
Impact fees for homebuyers or developers for new developments/homes	Y	Unknown
Incur debt through general obligation bonds	Y	The authority to incur debt through general obligation bonds can be used for hazard mitigation by raising funds to finance large-scale projects with repayment spread over time.
Incur debt through special tax and revenue bonds	Y	The authority to incur debt through special tax and revenue bonds can be used for hazard mitigation by securing funding for targeted projects with repayment tied to specific revenue sources such as taxes or fees.
Incur debt through private activity bonds	Don't know	N/A
Withhold spending in hazard-prone areas	N	N/A
State mitigation grant programs	Y	State mitigation grant programs can be used to fund projects that reduce long-term risks, such as infrastructure improvements, community resilience initiatives, and hazard-resistant construction in vulnerable areas.
Other	None	N/A

Education and Outreach

Education and outreach capabilities are programs and methods that could communicate about and encourage risk reduction.

Table 15: Education and Outreach Capabilities of the City of Troy

Education and Outreach Capability	In Place (Y/N)	Does this resource currently incorporate hazard mitigation?	Notes
Community Newsletter(s)	Yes	No, but can be	None
Hazard awareness campaigns (such as Firewise, Storm Ready, Severe Weather Awareness Week, school programs)	No	No	None
Public meetings/events (Please describe.)	Yes	Yes	None
Emergency management listserv	No	No	None
Local news	Yes	No	None
Distributing hard copies of notices (e.g., public libraries, door-to-door outreach)	Yes	No	None
Insurance disclosures/outreach	No	No	None
Organizations that represent, advocate for, or interact with underserved and vulnerable communities (Please describe.)	Yes, Unity House, Joseph's House, ARC of Rensselaer	Not really	None
Social media (Please describe.)	Facebook	Yes	None
Other? (Please describe.)	None	N/A	None

Opportunities to Expand and/or Improve Capabilities

Table 16 presents opportunities for the City of Troy to expand or improve capabilities.

Table 16: Opportunities to Expand and/or Improve the Capabilities of the City of Troy

Capability Type	Opportunity to Expand and/or Improve
Planning and Regulations	• Study was done to identify aerial topography, and the city might work on changing regulations and zoning near critical areas.
Administrative and Technical	• More disaster training is needed.
Financial	• In order to increase the community's capabilities, a large financial interest must be taken by the administration and community. This would include equipment and personnel for the planning and response to hazards.

Capability Type	Opportunity to Expand and/or Improve
Education and Outreach	• More outreach should be done to low-income populations.

Mitigation Strategy

Table 17 presents details about the 2019 mitigation actions. Table 18 presents the actions in the 2025 update, and Table 19 shows the prioritization of the mitigation actions.

Table 17: Status of Actions for the City of Troy in 2019[8]

Initiative Number	Initiative Name	Description of the Problem	Description of the Solution	Project Lead/ Department and Position Title	Status Update
1	Tomhannock Transmission Line Replacement *NEW*	Aged infrastructure that needs to be replaced	Remove and replace the existing water lines from reservoir to water treatment plan to provide continuous water to residents.	Department of Public Utility-City Engineer	The installation of 45,000 linear feet of 36" diameter transmission mains has been completed (Phase I). Some slope mitigation and the installation of a new concrete box culvert is being completed under the phase I work activity and will be completed by spring of 2025. The engineering for the remaining transmission line replacement (Phase II) will be completed in the fall of 2026.

[8] Projects related to Critical Facilities (CF) must protect the facility to the 500-year event or worst damage scenario, whichever is greater.

Initiative Number	Initiative Name	Description of the Problem	Description of the Solution	Project Lead/ Department and Position Title	Status Update
2	Ida Lake Dam Replacement *NEW*	The dam that creates the Ida Lake in the Ida Cemetery is in danger of collapse. This project looks to replace the dam	Remove and replace the dam to provide protection for residents living downstream of the dam.	DPU-City Engineer	The engineering evaluation will be completed in the fall of 2025, with funding and construction by fall 2026.
3	Relocate the 911 Communications Vault (2011 T-1)	The main vault for the E-911 center is in the floodplain. During a high flood, the vault will become saturated, interrupting communications	Move communication vault.	City Engineering/RCBPS	Engineering Evaluation and securing funding will be completed by summer 2026 with project implementation by fall 2027.
4	Transmission Pipeline Repair and Replacement (2011 T-2)	Transmission Pipelines-Repair/Replacement, protection and surveillance of two 30" diameter cast iron transmission mains that extend from the Tomhannock Reservoir to the water plant.	Replace water lines.	DPU-City Engineer	Projection Completion by fall 2026
5	CCTV for Water Storage Tanks (2011 T-3)	Water Storage Tanks-Provide CCTV with DVD remote video surveillance of three water storage tanks. Monitoring shall be provided at the water	Monitor water supply.	DPU-City Engineer	Projection Completion by fall 2025

Initiative Number	Initiative Name	Description of the Problem	Description of the Solution	Project Lead/ Department and Position Title	Status Update
		plant operations console.			
6	Water Supply Protection (2011 T-4)	Tomhannock Reservoir - Water Supply Protection: Provide security fencing at accessible areas. Provide CCTV with DVD remote video surveillance with monitoring at the water plant.	Monitor water supply.	DPU-City Engineer	Projection Completion by fall 2027
7	Dam Mitigation (2011 T-5)	City of Troy High Hazard Dams - Inspection and Mitigation of Three High Hazard Dams: Tomhannock Reservoir Dam, Wright, and Bradley Lake Dams.	Replace dam to mitigate a possible failure.	City Engineer	As part of the city's dam safety program, the inspection of the three high-hazard dams listed an updated inspection and mitigation plan will be prepared and completed by the fall of 2025 with the mitigation measures completed by the fall of 2026.
8	Landslide Slope Stabilization (2011 T-6)	Landslides in Slope Stability Prone Area: Provide slope stability mitigation and monitoring to critical	Slope land to mitigate a possible landslide.	City Engineer	Landslide prone areas will be identified and mapped with site specific topography at 2' contour intervals.

Initiative Number	Initiative Name	Description of the Problem	Description of the Solution	Project Lead/ Department and Position Title	Status Update
		landslide areas in the City of Troy, including steep embankments along Spring Avenue and Thompson Street and the areas of Stow, Brickyard Road, and Old Mill Street.			Where practicable, soil borings will be obtained and mitigation measures outlined in terms of an engineering report and engineering design mitigation measures. This work effort will begin in the spring of 2025 and be completed in the fall of 2026.
9	Bulkhead Wall Stabilization (2011 T-7)	Bulkhead Wall at Hudson River: The City of Troy owns approximately 1.5 miles of seawall in varying states of deterioration. Mitigation is required that includes driving PZ 32 sheet pile with whalers and dead men shall be driven at various locations to ensure and maintain the structural integrity of the existing seawall. A reinforced concrete cap shall be placed on top of the wall	Shore and replace portions of the seawall to make more resilient.	City Engineer	A new seawall has been installed that extends the base of Hutton Street South to the former 1-Monument Sq. site, which is the site of the former City Hall. It will be important to continue a PZ 32 sheet pile wall section with soldier columns whalers and dead men to ensure that the existing deteriorated seawall and shore line is retained. It shall be noted that there is a 4'

Initiative Number	Initiative Name	Description of the Problem	Description of the Solution	Project Lead/ Department and Position Title	Status Update
		section (est. length 2,000 feet).			diameter Rensselaer County sewerage interceptor line that transmits 5MGD of raw sewage to a sewage treatment plant on a daily basis. The preliminary engineering for this and grant application will be completed in the fall of 2025 with the anticipated grant being issued so final engineering can be completed in the fall of 2026. It is projected that the construction of the 1.5 mile new seawall will be completed in the fall of 2028.
10	Gas Pipeline Replacement (2011 T-8)	Natural gas distribution and transmission lines: The City of Troy has a network of existing cast iron transmission and distribution as lines that are corroded and need to be replaced. Some	Repair and replace portions of cast iron gas line to prevent gas line failures and possible explosions.	National Grid-City Engineer	The existing 225 psi high pressure gas line is 12" diameter cast iron and crosses beneath the Hudson River and resurfaces at 30" below grade at the south end of the former King Fuel

Initiative Number	Initiative Name	Description of the Problem	Description of the Solution	Project Lead/ Department and Position Title	Status Update
		date back approximately 120–130 years. This includes replacement of services and valving.			site. This existing gas transmission main provides natural gas to the entire City of Troy. The City of Troy will partner with National Grid to obtain a hazard mitigation grant to replace and relocate this transmission line. It is anticipated that a joint grant application will be made by the end of the year 2025. The final engineering shall be completed by the end of year 2026 with construction implementation completed at the end of year 2028.
11	Propane Gas Farm Drills (2011 T-9)	Underground Propane Storage Facility: This includes the John Ray and Son 30,000 gallon underground storage facility along with associated venting and leak detection.	Drill on events related to propane storage facility failure. These should be citywide practice drills in conjunction with Rensselaer County Hazmat as needed.	Fire Department	This fire department drill is conducted by annual basis by every shift.

Initiative Number	Initiative Name	Description of the Problem	Description of the Solution	Project Lead/ Department and Position Title	Status Update
12	Hazmat Drills and Pre-Planning (2011 T-10)	Hazardous Material Transport Along Hoosick Street (NYS Route 7): Numerous tractor trailers carrying hazardous material access Hoosick Street on a daily basis. This mitigation task will involve pre-planning and practice drills in the event of a hazardous material spill.	Drill on possible hazmat releases to be proactive and partner with other teams in the area.	Fire Department	Hazmat Practice drills occur along the Route 7 corridor also on a biannual basis.
13	Participate in County-Led Hazard Mitigation Outreach (2011 T-CL-1)	Residents could benefit from additional information on hazards, risks, and hazard mitigation measures they can take on their own properties to reduce damages and improve resident safety before, during and after a hazard event.	Public awareness program on hazards, prevention, and mitigation: The county will maintain a hazard mitigation and mitigation planning web presence (local municipal websites to link up to this site, if they haven't already done so); all participating jurisdictions to support preparation of a joint annual hazard mitigation and mitigation planning fact sheet and its distribution; periodic discussion of hazard	County-led action item. CPG Member, Mayor	The City of Troy plans on developing an overall hazard identification program that identifies critical sites and infrastructure where public safety problems could arise and how mitigation efforts will take place as well as public notifications and maintaining communications with the public, county, and state officials. The city will develop this

Initiative Number	Initiative Name	Description of the Problem	Description of the Solution	Project Lead/ Department and Position Title	Status Update
			mitigation and the mitigation plan at other regular local meetings; use of annual flyers, newsletters, advertisements, or radio/TV announcements at the discretion of each jurisdiction (incorporating as much free information as possible from the FEMA Publications Warehouse and other appropriate sources) (public education).		preliminary approach with completion in the fall of 2025 and shall furnish this documentation to the Rensselaer County Emergency Management Coordinator for review.
14	Request Code/Ordinance Review by County As Needed (2011 T-CL-2)	Communities are safer and more resilient when new construction and substantial improvements take into account the latest information on hazard vulnerabilities and measures to reduce risk.	Code update: Review existing local codes and ordinances against the identified hazards to determine whether there need to be any amendments to address identified hazards and, where a need is identified, modify or amend the codes and ordinances as applicable (prevention).	County-led action item. CPG Member, Mayor	An updated city code or ordinance is going to be undertaken and incorporate changes with the 100- and 500-year flood insurance rate maps, updated FEMA design guidelines, and identified upcoming changes to the New York State IBC Building Code. This work activity shall be coordinated by the City of Troy with

Initiative Number	Initiative Name	Description of the Problem	Description of the Solution	Project Lead/ Department and Position Title	Status Update
					the New York State department of State (Division of Buildings and Codes) and the Rensselaer County Emergency Management Coordinator. This task will be undertaken with a draft completed by the fall of 2025.
15	Send CEO to County-Led Training (2011 T-CL-3)	There can be a loss of institutional knowledge with staff changes. Even when staff is the same, continual training improves local capabilities and allows officials to better regulate activities in hazard areas to protect lives and property.	Code enforcement: Enforcement of NYS and Local Building Codes with Continual CEO training (prevention).	County-led action item. CPG Member, Mayor	The City of Troy is undertaking a technical engineering brief that includes specific building code and engineering requirement and infrastructure design and management requirement that will take place within the limits of the City of Troy in Rensselaer County. This document will insure the quality of the engineering design and construction on a continuous basis in order to maintain the

Initiative Number	Initiative Name	Description of the Problem	Description of the Solution	Project Lead/ Department and Position Title	Status Update
					continuity of knowledge and to reinforce the technical capabilities of staff members to spite changes in personnel. Training and documentation will be the central focus of this work effort. The preliminary version of this technical manual will be available in the fall of 2026.
16	Send Comprehensive Plan Update to County for Review by County Planning (2011 T-CL-4)	A long-term vision for the community that does not take into account hazard areas can put lives and property at risk. Taking into account natural hazards and hazard mitigation measures can make the community more resilient.	Ensure that local comprehensive plans incorporate natural disaster mitigation techniques through a courtesy review of draft plans by the County Planning Department (prevention).	County-led action item. CPG Member, Mayor	This disaster mitigation plan will be developed and provided to the county for their review by the end of 2025.
17	Attend County-Led Workshops on Natural Hazards and Hazard	When municipal staff are not armed with information on zoning and planning issues that sometimes arise	Hold periodic workshops for municipalities regarding zoning and planning issues that arise regarding natural hazards	County-led action item. CPG Member, Mayor	The City of Troy will be prepared to provide identification and mitigation measures for natural disasters and

Initiative Number	Initiative Name	Description of the Problem	Description of the Solution	Project Lead/ Department and Position Title	Status Update
	Mitigation (2011 T-CL-5)	regarding natural hazards and hazard mitigation, they may make decisions that do not foster community resiliency.	and hazard mitigation (prevention).		hazard mitigation as it relates to zoning and planning issues and flood plain management. It is anticipated that this document shall be provided to the county in preliminary form at the end of 2025.
18	Update Floodplain Management Ordinance (2011 T-NFIP-1)	Outdated ordinances mean that a community is not regulating to the latest codes and standards or hazard information, and that does not foster community resiliency.	Update/revise floodplain management ordinance to comply with latest FEMA regulations.	Mayor's Office	Please refer to item 17 above.
19	Designate a Floodplain Administrator (2011 T-NFIP-2)	Staff changes	Designate/install a specific person to be the municipality's Floodplain Administrator.	Code Enforcement	Please refer to item 17 above.
20	Staff Training in NFIP (2011 T-NFIP-3)	Staff changes	Add/train sufficient members of staff to adequately enforce NFIP regulations and floodplain management ordinances.	Code Enforcement	Please refer to item 17 above.
21	Update Floodplain	Substantial improvements of	Update/revise floodplain management ordinance to	Code Enforcement	Please refer to item 17 above.

Initiative Number	Initiative Name	Description of the Problem	Description of the Solution	Project Lead/ Department and Position Title	Status Update
	Management Ordinance When New FIRMs Are Released (2011 T-NFIP-4)	existing structures and new construction would be at risk if the city was regulating to old FIRMs.	be consistent with potential future new FIRMs.		
22	Require Certified Floodplain Manager Certification (2011 T-NFIP-5)	Floodplain manager would benefit from the training and certification regarding FEMA-480.	Require staff involved in floodplain management and ordinance enforcement to become Certified Floodplain Managers.	Code Enforcement	Please refer to item 17 above.
23	Mitigation of Repetitive Loss Properties *NEW*	Troy has five NFIP Repetitive Loss Properties.	The city will support property owners who wish to undertake flood mitigation on private property.	Mayor's Office and Code Enforcement	Please refer to item 17 above.

Table 18: Proposed 2025 Mitigation Actions for the City of Troy[9]

Project #	Project Name	Action Worksheet (Yes/No)	Goal / Objective Being Met	Hazard to Be Mitigated	Description of the Problem	Description of the Solution	Lead Agency	Related to CF?	EHP Issues	Estimated Timeline	Estimated Costs	Estimated Benefits	Potential Funding Sources	Priority
1	Tomhannock Transmission Line Replacement	No	Protect existing assets.	Utility and infrastructure failure	Aged infrastructure that needs to be replaced	Remove and replace the existing water lines from reservoir to water treatment plan to provide continuous water to residents.	DPU-City Engineer	Yes	No	2 years	$35 million	Prevents loss of revenue from water and prevents loss of service for customers	HMGP, BRIC, FMA	High
2	Ida Lake Dam Replacement	No	Protect existing assets.	Flooding and utility and infrastructure failure	The dam that creates the Ida Lake in the Ida Cemetery is in danger of collapse. This project looks to replace the dam.	Remove and replace the dam to provide protection for residents living downstream of the dam.	DPU-City Engineer	No	No	2 years	$1 million	By mitigating dam, prevents losses from residential buildings and potential injury	HMGP, BRIC, FMA	Medium
3	Relocate the 911 Communications Vault	No	Improve capabilities.	Flooding and utility and infrastructure failure	The main vault for the E-911 center is in the floodplain. During a high flood, the vault will become saturated, interrupting communications.	Move communication vault.	City Engineering/RCBPS	Yes	No	3 years	$500,000	Would prevent loss in 911 communications	HMGP, BRIC	Medium
4	Transmission Pipeline Monitoring and Protection	No	Protect existing assets.	Utility and infrastructure failure	Transmission Pipelines: Surveillance of two 30" diameter cast iron transmission mains that extend from the Tomhannock Reservoir to the water plant is needed.	Add CCTV surveillance within our right of way and security fencing where appropriate.	DPU-City Engineer	Yes	No	2 years	$1.5 million	Pipeline is vulnerable to vandalism or damage. Providing security prevents loss of service to thousands.	HMGP, BRIC, FMA	Medium
5	CCTV for Water Storage Tanks	No	Protect existing assets.	Utility and infrastructure failure	Water Storage Tanks: Provide CCTV with DVD remote video surveillance of three water storage tanks. Monitoring shall be provided at the water	Monitor water supply.	DPU-City Engineer	Yes	No	1 year	$300,000	Since tanks are vulnerable to vandalism or damage, security prevents loss of service.	HMGP, BRIC, FMA	Medium

[9] BRIC = Building Resilient Infrastructure and Communities, DEC = Department of Environmental Conservation, DPU = Department of Public Utility, FMA = Flood Mitigation Assistance, HMGP = Hazard Mitigation Grant Program, NYSDOT = New York State Department of Transportation

Project #	Project Name	Action Worksheet (Yes/No)	Goal / Objective Being Met	Hazard to Be Mitigated	Description of the Problem	Description of the Solution	Lead Agency	Related to CF?	EHP Issues	Estimated Timeline	Estimated Costs	Estimated Benefits	Potential Funding Sources	Priority
					plant operations console.									
6	Water Supply Protection	No	Protect existing assets.	Utility and infrastructure failure	Tomhannock Reservoir - Water Supply Protection: Provide security fencing at accessible areas. Provide CCTV with DVD remote video surveillance with monitoring at the water plant.	Monitor water supply.	DPU-City Engineer	Yes	No	3 years	$2 million	Since the reservoir is vulnerable to vandalism or damage, security prevents loss of service.	HMGP, BRIC, FMA	Medium
7	Dam Mitigation	No	Protect existing assets.	Flooding and utility and infrastructure failure	City of Troy High Hazard Dams - Inspection and mitigation of Three High Hazard Dams: Tomhannock Reservoir Dam, Wright, and Bradley Lake Dams.	Replace dam to mitigate possible failures.	DPU-City Engineer	No	No	3 years	$7 million	If there was the loss of a dam, there would be significant loss of property and life.	HMGP, BRIC, FMA	High
8	Landslide Slope Stabilization	No	Protect existing assets.	Landslides	Landslides in slope stability prone area: Provide slope stability mitigation and monitoring to critical landslide areas in the City of Troy, including steep embankments along Spring Avenue and Thompson Street and the areas of Stow, Brickyard Road, and Old Mill Street.	Slope land to mitigate a possible landslide.	DPU-City Engineer	No	No	2 years	$3.5 million	Landslides in these areas would result in loss of utilities, loss of property, potential injury, and delay of emergency services.	HMGP, BRIC	High
9	Bulkhead Wall Stabilization	No	Protect existing assets.	Flooding and infrastructure	Bulkhead Wall at Hudson River: The City of Troy owns approximately 1.5 miles of seawall in	Shore and replace portions of the seawall to make it more resilient.	DPU-City Engineer	No	No	4 years	$5 million	Prevents flooding and loss of residential and business property	HMGP, BRIC, FMA	Medium

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					varying states of deterioration. Mitigation is required that includes driving PZ 32 sheet pile with whalers and dead men shall be driven at various locations to ensure and maintain the structural integrity of the existing seawall. A reinforced concrete cap shall be placed on top of the wall section (est. length 2,000 feet).									
10	Gas Pipeline Replacement	No	Protect existing assets.	Utility and infrastructure failure	Natural gas distribution and transmission lines: The City of Troy has a network of existing cast iron transmission and distribution as lines that are corroded and need to be replaced. Some date back approximately 120–130 years. This includes replacement of services and valving.	Repair and replace portions of cast iron gas line to prevent gas line failures and possible explosions.	National Grid, City Engineer	No	No	4 years	$500,000	Would prevent loss of revenue and potential public health hazard or explosions from gas leaks	HMGP, BRIC	Low
11	Propane Gas Farm Drills	No	Improve capabilities.	Utility and infrastructure failure	Underground Propane Storage Facility: This includes the John Ray and Son 30,000 gallon underground storage facility along with associated venting and leak detection. Citywide practice	Drill on events related to propane storage facility failure.	Troy Fire Department	No	No	1 year	>$100,000	Help to decrease response time, preventing damages and injury	HMGP, BRIC	Medium

Project #	Project Name	Action Worksheet (Yes/No)	Goal / Objective Being Met	Hazard to Be Mitigated	Description of the Problem	Description of the Solution	Lead Agency	Related to CF?	EHP Issues	Estimated Timeline	Estimated Costs	Estimated Benefits	Potential Funding Sources	Priority
					drills in conjunction with Rensselaer County Hazmat.									
12	Hazmat Drills and Pre-Planning	No	Improve capabilities.	Utility and infrastructure failure	Hazardous Material Transport Along Hoosick Street (NYS Route 7): Numerous tractor trailers carrying hazardous material access Hoosick Street on a daily basis. This mitigation task will involve pre-planning and practice drills in the event of a hazardous material spill.	Drill on possible Hazmat releases to be proactive and partner with other teams in the area.	Troy Fire Department	No	No	2 years	>$100,000	Help to decrease response time, prevent damages and injury	HMGP, BRIC	Medium
13	Participate in County-Led Hazard Mitigation Outreach	No	Increase public awareness.	Drought, earthquake, extreme temperatures, flooding, hazardous materials, high winds, hurricane/ tropical storms, landslide, lightning, terrorism, tornado, utility, and infrastructure failure, wildfire, winter storms	Residents could benefit from additional information on hazards, risks, and hazard mitigation measures they can take on their own properties to reduce damages and improve resident safety before, during and after a hazard event.	Public awareness program on hazards, prevention, and mitigation: The county will maintain a hazard mitigation and mitigation planning web presence (local municipal websites to link up to this site, if they haven't already done so); all participating jurisdictions to support preparation of a joint annual hazard mitigation and mitigation planning fact sheet and its distribution; periodic discussion of hazard mitigation and the mitigation plan at other regular local meetings; use of annual flyers,	County-led action item. Mayor	No	No	2 years	>$100,000	Increasing awareness will reduce losses by empowering the public to add mitigation measures.	HMGP, BRIC	Medium

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						newsletters, advertisements, or radio/TV announcements at the discretion of each jurisdiction (incorporating as much free information as possible from the FEMA Publications Warehouse and other appropriate sources) (public education).								
14	Request Code/ Ordinance Review by County As Needed	No	Promote resilient new development.	Utility and infrastructure failure	Communities are safer and more resilient when new construction and substantial improvements take into account the latest information on hazard vulnerabilities and measures to reduce risk.	Code update: Review existing local codes and ordinances against the identified hazards to determine whether there need to be any amendments to address identified hazards and, where a need is identified, modify or amend the codes and ordinances as applicable (prevention).	County-led action item. Mayor	No	No	1 year	>$100,000	Prevents property damage and losses by ensuring codes are up to date	HMGP, BRIC	Medium
15	Send CEO to County-Led Training	No	Promote resilient new development.	Utility and infrastructure failure	There can be a loss of institutional knowledge with staff changes. Even when staff is the same, continual training improves local capabilities and allows officials to better regulate activities in hazard areas to protect lives and property.	Code enforcement: Enforcement of NYS and Local Building Codes with Continual CEO training (prevention).	County-led action item. Mayor	No	No	2 years	>$100,000	Prevents property damage and losses by ensuring codes are up to date	HMGP, BRIC	Medium
16	Send Comprehensive Plan Update to	No	Promote resilient new development.	Utility and infrastructure failure	A long-term vision for the community that does not take into	Ensure that local comprehensive plans incorporate natural	County-led action item. Mayor	No	No	1 year	>$100,000	Encourages smart development	HMGP, BRIC	Medium

Project #	Project Name	Action Worksheet (Yes/No)	Goal / Objective Being Met	Hazard to Be Mitigated	Description of the Problem	Description of the Solution	Lead Agency	Related to CF?	EHP Issues	Estimated Timeline	Estimated Costs	Estimated Benefits	Potential Funding Sources	Priority
	County for Review by County Planning				account hazard areas can put lives and property at risk. Taking into account natural hazards and hazard mitigation measures can make the community more resilient.	disaster mitigation techniques through a courtesy review of draft plans by the County Planning Department (prevention).						practices and prevents future damages		
17	Attend County-Led Workshops on Natural Hazards and Hazard Mitigation	No	Promote resilient new development.	Drought, earthquake, extreme temperatures, flooding, hazardous materials, high winds, hurricane/ tropical storms, landslide, lightning, terrorism, tornado, utility, and infrastructure failure, wildfire, winter storms	When municipal staff are not armed with information on zoning and planning issues that sometimes arise regarding natural hazards and hazard mitigation, they may make decisions that do not foster community resiliency.	Hold periodic workshops for municipalities regarding zoning and planning issues that arise regarding natural hazards and hazard mitigation (prevention).	County-led action item. Mayor	No	No	2 years	>$100,000	Encourages smart development practices and prevents future damages	HMGP, BRIC	Medium
18	Update Floodplain Management Ordinance	No	Protect existing assets.	Flooding	Outdated ordinances mean that a community is not regulating to the latest codes and standards or hazard information, and that does not foster community resiliency.	Update or revise floodplain management ordinance to comply with latest FEMA regulations.	Mayor's office	No	No	2 years	>$100,000	Encourages smart development practices and prevents future damages	HMGP, BRIC, FMA	Low
19	Designate a Floodplain Administrator	No	Protect existing assets.	Flooding	Staff changes	Designate/install a specific person to be the municipality's Floodplain Administrator.	Code Enforcement	No	No	1 year	>$100,000	Encourages smart development practices and prevents future damages	HMGP, BRIC, FMA	Medium

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20	Staff Training in NFIP	No	Protect existing assets.	Flooding	Staff changes	Add/train sufficient members of staff to adequately enforce NFIP regulations and floodplain management ordinances.	Code Enforcement	No	No	1 year	>$100,000	Encourages smart development practices and prevents future damages	HMGP, BRIC, FMA	Medium
21	Update Floodplain Management Ordinance When New Flood Insurance Rate Map(s) Are Released	No	Protect existing assets.	Flooding	Substantial improvements of existing structures, and new construction, would be at risk if the city was regulating to old FIRMs.	Update or revise floodplain management ordinance to be consistent with potential future new FIRMs.	Code Enforcement	No	No	2 years	>$100,000	Encourages smart development practices and prevents future damages	HMGP, BRIC, FMA	Low
22	Require Certified Floodplain Manage Certification	No	Improve capabilities.	Flooding	Floodplain manager would benefit from the training and certification regarding FEMA-480.	Require staff involved in floodplain management and ordinance enforcement to become Certified Floodplain Managers.	Code Enforcement	No	No	2 years	>$100,000	Encourages smart development practices and prevents future damages	HMGP, BRIC, FMA	Low
23	Mitigation of Repetitive Loss Properties	No	Protect existing assets.	Flooding	Troy has five NFIP Repetitive Loss Properties.	The city will support property owners who wish to undertake flood mitigation on private property.	Mayor's Office and Code Enforcement	No	No	3 years	>$100,000	Prevention of future private property damage	HMGP, BRIC, FMA	Medium
24	Eddy Lane Pump Station	No	Protect existing assets.	Flooding	Pump has deteriorated piping.	Piping needs to be replaced to avoid potential flooding of low-income housing area.	City Engineer	Yes	No	3 years	$500,000	Prevention of loss of service and prevention damages to low-income area	HMGP, BRIC, FMA	High

Table 19: Prioritization of Mitigation Actions for the City of Troy

Action #	Social	Technical	Administrative	Political	Legal	Economic	Environmental	Priority
1	3	3	4	3	3	3	3	High
2	3	3	2	3	2	2	2	Medium
3	3	2	2	3	3	2	3	Medium
4	3	2	2	3	3	2	3	Medium
5	3	2	2	3	3	2	3	Medium
6	3	2	2	3	3	2	3	Medium
7	4	3	3	4	3	3	3	High
8	2	3	3	4	3	3	3	High
9	2	2	2	4	3	3	3	Medium
10	3	2	2	3	2	2	2	Low
11	4	3	3	4	3	3	3	Medium
12	4	3	3	4	3	3	3	Medium
13	4	3	3	3	3	3	3	Medium
14	3	3	3	3	3	3	3	Medium
15	4	3	3	4	3	3	3	Medium
16	4	2	2	3	3	3	3	Medium
17	4	3	3	3	3	3	3	Medium
18	3	2	2	2	3	3	3	Low
19	4	3	3	3	3	3	3	Medium
20	4	3	3	4	3	3	3	Medium

Action #	Social	Technical	Administrative	Political	Legal	Economic	Environmental	Priority
21	3	2	2	2	3	3	3	Low
22	3	2	2	2	3	3	3	Low
23	2	2	3	3	2	3	3	Medium
24	4	4	3	3	3	3	3	High