18. NORTH HUDSON SEWERAGE AUTHORITY

This jurisdictional annex to the Hudson County Hazard Mitigation Plan (HMP) provides information to assist public and private sectors in the participating special districts with reducing losses from future hazard events. This annex is not guidance of what to do when a disaster occurs; its focus is on actions that can be implemented prior to a disaster to reduce or eliminate damage to property and people. The annex presents a general overview of North Hudson Sewerage Authority (NHSA), describes who participated in the planning process, assesses NHSA's risk, vulnerability, and capabilities, and outlines a strategy for achieving a more resilient community.

18.1 Hazard Mitigation Planning Team

The North Hudson Sewerage Authority identified primary and alternate HMP points of contact and developed this plan over the course of several months, with input from many County departments. The executive director represented the NHSA on the Hudson County HMP Planning Partnership and Steering Committee and supported the local planning process by securing input from persons with specific knowledge to enhance the plan. All departments were asked to contribute to the annex development through reviewing and contributing to the capability assessment, reporting on the status of previously identified actions, and participating in action identification and prioritization.

Table 18-1 summarizes the NHSA officials who participated in the development of the annex and in what capacity. Additional documentation of the NHSA's planning activities through Planning Partnership meetings is included in Volume I.

Table 18-1. Hazard Mitigation Planning Team

Primary Point of Contact	Alternate Point of Contact
Name/Title: Richard Wolff, Executive Director Address: 1600 Adams Street, Hoboken, NJ 07030 Phone Number: 201-963-0643 Email: rwolff@nhudsonsa.com	Name/Title: Amanda Martino, Grant Rite Management Corp. Address: 300 Cypress St Unit 622, Liverpool, NY 13088 Phone Number: 985-246-9552 Email: amartino@grantrite.com
National Flood Insurance Program Floodplain Administrator	
Please see Chapter 6, the City of Hoboken Annex	
Additional Contributors	
Name/Title: Laura DeFuria, Grant Rite Management Corp. Method of Participation: Participated in the planning process and provided information for requested worksheets.	
Name/Title: Method of Participation:	
Name/Title: Method of Participation:	
Name/Title: Method of Participation:	
Name/Title: Method of Participation:	
Name/Title: Method of Participation:	

18.2 Community Profile

The North Hudson Sewerage Authority (NHSA) was formed in 1988 to serve as a regional conveyance, transmission, treatment and disposal authority for wastewater generated within the Hoboken, Union City and Weehawken area. In November 1996, North Hudson acquired the collection system, pump stations, regulators, outfalls, and the River Road Wastewater Treatment Plant (WWTP) in the Town of West New York, facilities that were previously owned by the West New York Municipal Utilities Authority. On February 1, 1998, North Hudson took ownership and full operation and maintenance responsibilities of the collection systems in the cities of Hoboken, Union City, and Weehawken. The NHSA services a land area of 5.97 sq. miles, with a population of approximately 174,650 people.

The Adams Street WWTP treats all of the sewage generated within the City of Hoboken. Based on historical billed-for water use, approximately 83 percent of the sewage generated in Weehawken and 45 percent of the sewage generated in Union City is treated at the Adams Street WWTP. The River Road WWTP treats all sewage generated in the Town of West New York, approximately 17 percent of sewage generated in Weehawken, and 23 percent of sewage generated in Union City. The remaining sewage generated in Union City (with exception of a small amount of sewerage conveyed to the North Bergen MUA) is conveyed to the Jersey City MUA for treatment at the Passaic Valley Sewerage Commissioners WWTP. North Hudson bills all of the customers in the four municipalities for sewage treatment service on the basis of metered water consumption and pays the owners of other wastewater agencies (Jersey City MUA and the North Bergen MUA) for the portion of sewage they handle.

North Hudson bills all of the customers in the four municipalities for sewage treatment service and pays the North Bergen Municipal Utilities Authority and the Jersey City Sewerage Authority for the portion of sewage they handle. North Hudson's billings are based on metered water consumption for all customers.

18.3 Jurisdictional Capability Assessment and Integration

NHSA performed an inventory and analysis of existing capabilities, plans, programs, and policies that enhance its ability to implement mitigation strategies. Volume I describes the components included in the capability assessment and their significance for hazard mitigation planning. The jurisdictional assessment for this annex includes analyses of the following:

- Planning and regulatory capabilities
- Development and permitting capabilities
- Administrative and technical capabilities
- Fiscal capabilities
- Education and outreach capabilities
- Classification under various community mitigation programs
- Adaptive capacity to withstand hazard events

For a jurisdiction to succeed in reducing long-term risk, hazard mitigation must be integrated into day-to-day local government operations. As part of the hazard mitigation analysis, planning and /policy documents were reviewed and each jurisdiction was surveyed to obtain a better understanding of their progress toward plan integration. Development

of an updated mitigation strategy provided an opportunity for NHSA to identify opportunities for integrating mitigation concepts into ongoing County procedures.

18.3.1 Planning and Regulatory Capability and Integration

Table 18-2 summarizes the planning and regulatory tools that are available to the North Hudson Sewerage Authority.

Table 18-2. Planning and Regulatory Capability and Integration

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
CODES, ORDINANCES, & REGULATIONS				
Building Code	No	-	State and Local	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Zoning/Land Use Code	No	-	Local	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Subdivision Code	No	-	Local	
How has or will this be integrated with the HMP and how does this reduce risk?				
Site Plan Code	No	-	Local	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Stormwater Management Code	No	-	Local	
How has or will this be integrated with the HMP and how does this reduce risk?				
Post-Disaster Recovery/ Reconstruction Code	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Real Estate Disclosure Requirements	Yes	Senate Bill 3110; P. L. 2023, c. 93, July 3, 2023	State	Sellers and Landlords of commercial or residential property

How has or will this be integrated with the HMP and how does this reduce risk?

For leases, the law amends the New Jersey Truth-in-Renting Act, N.J.S.A. 46:8-43 et seq., to require every landlord to notify in writing each of the landlord's tenants, prior to lease signing or renewal, whether the property is located in the Federal Emergency Management Agency (FEMA) Special Flood Hazard Area ("100-year floodplain") or Moderate Risk Flood Hazard Area ("500-year floodplain") and if the landlord has actual knowledge that the rental premises or any portion of the parking areas of the real property containing the rental premises has been subjected to flooding. The law does not apply to (1) landlords who lease commercial space or residential dwellings for less than one month, (2) residential dwellings in a premises containing not more than two units, (3) owner-occupied premises containing not more than three units, or (4) hotels, motels, or other guest houses serving transient or seasonal guests for a period of less than 120 days.

The model notice is to contain the heading "Flood Risk" and questions for the landlord to answer regarding the landlord's actual knowledge of past flooding of the property. The questions regarding the property being in a FEMA Special or Moderate Risk Flood Hazard Area shall not contain the option for "unknown." To determine how the questions are to be answered, FEMA's current flood insurance rate maps for the leased premises area must be consulted. The landlord will be required to answer whether the rental premises or any portions of the parking areas of the real property containing the rental premises ever experienced any flood damage, water seepage, or pooled water due to a natural flood event and, if so, the number of times that has occurred.

The notice to residential tenants must also indicate that flood insurance may be available to renters through FEMA's National Flood Insurance Program to cover their personal property and contents in the event of a flood and that standard renter's insurance does not typically cover flood damage.

For sales, the law also amends the New Jersey Consumer Fraud Act, N.J.S.A. 56:8-1 et seq., to require sellers of real property to disclose, on the property condition disclosure statement, whether the property is located in the FEMA Special or Moderate Risk Flood Hazard Area and any actual knowledge of the seller concerning flood risks of the property to the purchaser before the purchaser becomes obligated under any contract for the purchase of the property.

The disclosure statement must contain the heading "Flood Risk" and ask the seller the following questions:

- Is any or all of the property in the Special Flood Hazard Area ("100-year floodplain") or a Moderate Risk Flood Hazard Area ("500-year floodplain") according to FEMA's current flood insurance rate maps?
- Is the property subject to any requirement under federal law to obtain and maintain flood insurance on the property? Properties in the Special Flood Hazard Area with mortgages from federally regulated or insured lenders are required to obtain and maintain flood insurance.
- Have you ever received assistance from, or are you aware of any previous owners receiving assistance from FEMA, the U.S. Small Business Administration, or any other federal disaster flood assistance for flood damage on the property? For properties that have received flood disaster assistance, the requirement to obtain flood insurance passes down to all future owners.
- Is there flood insurance on the property? A standard homeowner's insurance policy typically does not cover flood damage.
- Is there a FEMA elevation certificate available for the property? If so, it must be shared with the buyer. An elevation certificate is a FEMA form, completed by a licensed surveyor or engineer, that provides critical information about the flood risk of the property and is used by flood insurance providers to determine the appropriate insurance rating for the property.
- Have you ever filed a claim for flood damage to the property with any insurance provider? If the claim was approved, what was the amount received?
- Has the property experienced any flood damage, water seepage, or pooled water due to a natural flood event, such as heavy rainfall, coastal storm surge, tidal inundation, or river overflow? If so, how many times?

Not all provisions of this law have become effective at the time of the writing of this plan.

Growth Management	No	-	Local	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Environmental Protection Ordinance(s)	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Flood Damage Prevention Ordinance	No	-	Federal, State, County and Local	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Wellhead Protection	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Emergency Management Ordinance	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Climate Change Ordinance	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Other	-	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
PLANNING DOCUMENTS				
General/Comprehensive/Master Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Capital Improvement Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Disaster Debris Management Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Floodplain Management or Watershed Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Stormwater Management Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Open Space Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Urban Water Management Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Habitat Conservation Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Economic Development Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Community Wildfire Protection Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Community Forest Management Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Transportation Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Agriculture Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Climate Action/ Resilience/Sustainability Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Tourism Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Business/ Downtown Development Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Other	-	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
RESPONSE/RECOVERY PLANNING				
Emergency Operations Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Continuity of Operations Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Substantial Damage Response Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Threat and Hazard Identification and Risk Assessment	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Post-Disaster Recovery Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Public Health Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Other	-	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				

18.3.2 Development and Permitting Capability

Table 18-3 summarizes the capabilities of the NHSA to oversee and track development.

Table 18-3. Development and Permitting Capability

	Yes/No	Comment
Do you issue development permits? • If you issue development permits, what department is responsible? • If you do not issue development permits, what is your process for tracking new development?	No/NA	-
Are permits tracked by hazard area? (For example, floodplain development permits.)	No/NA	-
Do you have a buildable land inventory? • If you have a buildable land inventory, please describe	No/NA	-
Describe the level of buildout in your jurisdiction.	N/A	

18.3.3 Administrative and Technical Capability

Table 18-4 summarizes potential staff and personnel resources available to the NHSA and their current responsibilities that contribute to hazard mitigation.

Table 18-4. Administrative and Technical Capabilities

Resources	Available? (Yes/No)	Comment (available staff, responsibilities, support of hazard mitigation)
ADMINISTRATIVE CAPABILITY		
Planning Board	No/NA	-
Zoning Board of Adjustment	No/NA	-
Planning Department	No/NA	-
Mitigation Planning Committee	No/NA	-
Environmental Board/Commission	No/NA	-
Open Space Board/Committee	No/NA	-
Economic Development Commission/Committee	No/NA	-
Public Works/Highway Department	No/NA	-
Construction/Building/Code Enforcement Department	No/NA	-
Emergency Management/Public Safety Department	No/NA	-
Maintenance programs to reduce risk (stormwater maintenance, tree trimming, etc.)	Yes	Maintenance staff, manuals and regular schedules for routine upkeep of all equipment and conveyance system.
Mutual aid agreements	Yes	Police and fire
Human Resources Manual - Do any job descriptions specifically include identifying or	No	-

Resources	Available? (Yes/No)	Comment (available staff, responsibilities, support of hazard mitigation)
implementing mitigation projects or other efforts to reduce natural hazard risk?		
Other	No	-
TECHNICAL/STAFFING CAPABILITY		
Planners or engineers with knowledge of land development and land management practices	Yes	Contractual support and in-house staff
Engineers or professionals trained in building or infrastructure construction practices	Yes	Contractual support and in-house staff
Planners or engineers with an understanding of natural hazards	Yes	Contractual support and in-house staff
Staff with expertise or training in benefit/cost analysis	No	-
Professionals trained in conducting damage assessments	No	-
Personnel skilled or trained in GIS and/or Hazus applications	No	-
Staff that work with socially vulnerable populations or underserved communities	No / NA.	-
Environmental scientists familiar with natural hazards	No / NA.	-
Surveyors	No / NA.	-
Emergency manager	No / NA.	-
Grant writers	Yes	Contractual support and in-house staff
Resilience Officer	No / NA.	-
Other (this could include stormwater engineer, environmental specialist, etc.)	Yes	Contractual support and in-house staff

18.3.4 Fiscal Capability

Table 18-5 summarizes financial resources available to the NHSA.

Table 18-5. Fiscal Capabilities

Financial Resources	Accessible or Eligible to Use? (Yes/No)
Community Development Block Grants (CDBG, CDBG-DR)	No
Capital improvement project funding	Yes
Authority to levy taxes for specific purposes	No
User fees for water, sewer, gas, or electric service	Yes
Impact fees for homebuyers or developers of new development/homes	No
Stormwater utility fee	Yes

Financial Resources	Accessible or Eligible to Use? (Yes/No)
Incur debt through general obligation bonds	No
Incur debt through special tax bonds	No
Incur debt through private activity bonds	Yes
Withhold public expenditures in hazard-prone areas	No
Other federal or state funding programs	Yes
Open Space Acquisition funding programs	No
Other (for example, Clean Water Act 319 Grants [Nonpoint Source Pollution])	Yes

18.3.5 Education and Outreach Capability

Table 18-6 summarizes the education and outreach resources available to the NHSA.

Table 18-6. Education and Outreach Capabilities

Outreach Resources	Available? (Yes/No)	Comment
Public information officer or communications office	Yes	PIO for MUA
Personnel skilled or trained in website development	Yes	IT Department
Hazard mitigation information available on your website	Yes	MUA Website
Social media for hazard mitigation education and outreach	Yes	MUA Website
Citizen boards or commissions that address issues related to hazard mitigation	No / NA.	-
Warning systems for hazard events	Yes	MUA Website
Natural disaster/safety programs in place for schools	No / NA.	-
Organizations that conduct outreach to socially vulnerable populations and underserved populations	No / NA.	-
Public outreach mechanisms / programs to inform citizens on natural hazards, risk, and ways to protect themselves during such events	Yes	Public outreach / warning protocol through NHSA's website and social media accounts.

Commented [SU1]: NHSA: Please provide additional where highlighted green in the comments column.

18.3.6 Community Classifications

Table 18-7 summarizes classifications for community programs available to the NHSA.

Table 18-7. Community Classifications

Program	Participating? (Yes/No)	Classification	Date Classified
Community Rating System (CRS)	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	Yes	3	-
Public Protection (ISO Fire Protection Classes 1 to 10)	Yes	1	-
National Weather Service StormReady Certification	No / NA.	-	-
Firewise Communities classification	No / NA.	-	-

Program	Participating? (Yes/No)	Classification	Date Classified
Sustainable Jersey	No / NA.	-	-
Other: Organizations with mitigation focus (advocacy group, non-government)	-	-	-

N/A = Not applicable
— = Unavailable

18.3.7 Adaptive Capacity

Adaptive capacity is defined as "the ability of systems, institutions, humans and other organisms to adjust to potential damage, to take advantage of opportunities, or respond to consequences" (IPCC 2022). Each jurisdiction has a unique combination of capabilities to adjust to, protect from, and withstand a future hazard event, future conditions, and changing risk. Table 18-8 summarizes the adaptive capacity for each identified hazard of concern and the North Hudson Sewerage Authority's capability to address related actions using the following classifications:

- Strong: Capacity exists and is in use.
- Moderate: Capacity might exist; but is not used or could use some improvement.
- Weak: Capacity does not exist or could use substantial improvement

Table 18-8. Adaptive Capacity

Hazard	Adaptive Capacity - Strong/Moderate/Weak
Dam/Levee	Moderate
Drought	Moderate
Extreme Temperatures	Moderate
Flood	Strong
Geologic Hazards	Moderate
Severe Weather	Moderate
Severe Winter Weather	Moderate
Wildfire	Moderate

18.4 National Flood Insurance Program Compliance

The NHSA does not participate in the NFIP. For NFIP compliance with the City of Hoboken, please refer to the City's annex (Chapter 6).

18.5 Growth/Development Trends

Understanding how past, current, and projected development patterns have or are likely to increase or decrease risk in hazard areas is a key component to appreciating a jurisdiction's overall risk to its hazards of concern. Recent and

expected future development trends, including major residential/commercial development and major infrastructure development, are summarized in Table 18-9 through Table 18-11.

Table 18-9. Number of Building Permits for New Construction Issued Since the Previous HMP

	New Construction Permits Issued			
	Single Family	Multi-Family	Other (commercial, mixed-use, etc.)	Total
The North Hudson Sewerage Authority is not responsible for permitting new construction. Permitting is the responsibility of the City of Hoboken.				

Table 18-10. Recent Major Development and Infrastructure from 2019 to Present

Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zones*	Description / Status of Development
None Identified					

Table 18-11. Known or Anticipated Major Development and Infrastructure in the Next Five Years

Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zones*	Description / Status of Development
None Identified					

18.6 Jurisdictional Risk Assessment

The hazard profiles in Volume I provide detailed information regarding each planning partner's vulnerability to the identified hazards, including summaries of the North Hudson Sewerage Authority's risk assessment results and data used to determine the hazard ranking. Key local risk assessment information is presented below.

18.6.1 Hazard Area

Hazard area maps illustrate the probable hazard areas impacted within the County, to include NHSA. These hazard maps are shown in Volume 1 of this plan within the hazard profiles. These maps are based on the best available data at the time of the preparation of this plan and are adequate for planning purposes. Maps are provided only for hazards that can be identified clearly using mapping techniques and technologies and for which Hudson has significant exposure. The maps show the location of potential new development, where available.

18.6.2 Hazard Event History

The history of natural and non-natural hazard events in the NHSA is detailed in Volume I, where each hazard profile includes a chronology of historical events that have affected the County and its municipalities. Table 18-12 provides details on loss and damage in the NHSA during hazard events since the last hazard mitigation plan update.

Table 18-12. Hazard Event History in Hudson

Dates of Event	Event Type (Disaster Declaration)	County Designated?	Summary of Event	Summary of Damage and Losses in Hudson
February 25, 2019	Strong Wind, High Wind	No	Widespread damaging wind gusts occurred as storms moved through Hudson County. Wind gusts reached an estimated 58 miles per hour. Damages from these strong, damaging winds totaled over $50,000 across the County.	Nothing to report
January 20, 2020 – May 11, 2023	Covid-19 Pandemic (EM-3451-NJ, DR-4488-NJ)	Yes	As of March 4, 2023, Hudson County accounts for 219,191 positive cases of COVID-19 in the State of New Jersey, and 2,671 of the reported deaths. A total of 1,565,233 vaccinations have been delivered in the County to both residents and non-residents.	Provided dissemination of information to the public for management, control and reduction of immediate threats to public health and safety; Provided interior facility disinfection for Management, control and reduction of immediate threats to public health and safety Provide personal protective equipment, N95 mask, purchase of air purifiers, temperature screening equipment for facilities where activities were performed for management Force account Materials: $8,110.00 Contracts: $28,994.10 Work completed total: **$37,104.10**
February 7, 2020	Strong Wind, High Wind	No	Widespread damaging wind gusts occurred as storms moved through Hudson County. Wind gusts reached an estimated 53 miles per hour. Damages from these strong, damaging winds totaled over $50,000 across the County.	Nothing to report
April 13, 2020	Strong Wind, High Wind	No	Widespread damaging wind gusts occurred as storms moved through Hudson County. Wind gusts reached an estimated 58 miles per hour. Damages from these strong, damaging winds totaled over $50,000 across the County.	Nothing to report

Dates of Event	Event Type (Disaster Declaration)	County Designated?	Summary of Event	Summary of Damage and Losses in Hudson
August 4, 2020	Tropical Storm Isaias (DR-4574-NJ)	Yes	The remnants of Hurricane Ida produced heavy rainfall, flash floods, widespread wind damage, and power outages. There were multiple disruptions to mass transit and road closures due to downed power lines and trees were noted, with numerous water systems having to move to alternate power. One person was injured in Hudson County because of this event.	Nothing to report
September 1-3, 2021	Remnants of Hurricane Ida (EM-3573-NJ, DR-4614-NJ)	Yes	Extremely heavy rainfall associated with the remnants of Hurricane Ida overspread northeast New Jersey during the evening of September 1 and continued through the early morning hours of September 2. Rainfall totals ranged from 5-8+ inches across much of the region, with much of that rain falling in just a few hours. This resulted in widespread flash flooding leading to numerous road closures and water rescues in addition to extensive river flooding. One fatality and seven injuries occurred in Hudson County as a result of this storm.	Debris Removal and clearing of Sewer Mains and Catch Basins; 18th street and Hackensack Plank rd, Weehawken, NJ 07086 • Force account Equipment; $4,691.75 • Contract: $67,533.24 Work Completed Total: $72,224.99 Emergency Protective Measures-Incident management activities for the assessment and repair to the damaged infrastructure from the West New York solids and Floatable Facility:6400 Anthony M Defineo Way West New York, NJ 07093 • Contracts: $7,584.01 Work Completed Total: $7,584.01 Damage: West New York Solids and Floatables Facility Basement; Intense flood waters and high volume debris flow and build up due to storm ida: 6400 Anthony M Defineo Way West New York, Nj 07093
January 28-29, 2022	Winter Storm	No	A Nor'easter brought snow and gusty winds. Wind gusts of 40 mph were reported. Snow and blowing snow impacted Hudson County, with snow totals amounting to 8.5 inches in Hudson County.	Nothing to report

EM = Emergency Declaration (FEMA)
FEMA = Federal Emergency Management Agency

DR = Major Disaster Declaration (FEMA)
N/A = Not applicable

18.6.3 Hazard Ranking and Vulnerabilities

The hazard profiles in Volume I have detailed information regarding each planning partner's vulnerability to the identified hazards. The following presents key risk assessment results for the NHSA.

18.6.3.1 Hazard Ranking

The participating jurisdictions have differing degrees of vulnerability to the hazards of concern, so each jurisdiction ranked its own degree of risk to each hazard. The community-specific hazard ranking is based on problems and impacts identified by the risk assessment presented in Volume I. The ranking process involves an assessment of the likelihood of occurrence for each hazard; the potential impacts of the hazard on people, property, and the economy; community capabilities to address the hazard; and changing future climate conditions. The North Hudson Sewerage Authority reviewed the County hazard ranking and individual results to assess the relative risk of the hazards of concern to the community. During the review of the hazard ranking, the NHSA indicated the following:

- NHSA noted that Flood should rank high for Hoboken and Weehawken, and Medium for Union City, and West New York.
- NHSA noted that Geological Hazards should be high based off a major mud slide during Storm Ida. Also, due to a large retaining wall failure.

Table 18-13 shows Hudson's final hazard rankings for identified hazards of concern. Mitigation action development uses the ranking to target hazards with the highest risk.

Table 18-13. Hazard Ranking

Hazard	Rank
Dam/Levee Failure	Low
Drought	Medium
Extreme Temperature	Medium
Flood	High
Geological Hazards	High
Severe Weather	High
Severe Winter Weather	High
Wildfire	Low

Note: The scale is based on the hazard rankings established in Volume I, modified as appropriate based on review by the jurisdiction

18.6.3.2 Critical Facilities

Table 18-14 identifies critical facilities in the community located in the 1 percent and 0.2 percent annual chance floodplains.

Table 18-14. Critical Facilities Flood Vulnerability

Name	Type	Vulnerability	
		1% Annual Chance Event	0.2% Annual Chance Event
NHSA - H6/H7 Stormwater PS	Wastewater Pump	X	X
North Hudson Sewerage Authority	Wastewater Treatment	X	X
North Hudson Sewerage Authority – Transfer Hob	Wastewater Pump	X	X
Pump Station 5th Street	Wastewater Pump	X	X
Pump Station H1	Wastewater Pump	X	X

Source: Hudson County; HIFLD; NJGIN

18.6.4 Identified Issues

After review of the NHSA's hazard event history, hazard rankings, hazard location, and current capabilities, Hudson identified the following vulnerabilities within the community:

- During periods of heavy rain, areas in Hoboken (9th and Madison) flood and affect local businesses and residents. This section of the road is considered a lifeline as it provides direct access to emergency services.
- The Adams Street Wastewater Treatment Plant (WWTP) has limited capacity to treat sewage during wet weather events, leading to CSOs and localized flooding.
- A key pump station is located in a flood-prone area, putting electrical and control systems at risk of failure during storms.

18.7 Mitigation Strategy and Prioritization

This section discusses the status of mitigation actions from the previous HMP, describes proposed hazard mitigation actions, and prioritizes actions to address over the next five years.

18.7.1 Past Mitigation Action Status

Table 18-15 indicates progress on the County's mitigation strategy identified in the 2020 HMP. Actions that are still recommended but not completed or that are in progress are carried forward and combined with new actions as part of the mitigation strategy for this plan update. Previous actions that are now ongoing programs and capabilities are indicated as such and are presented in the capability assessment earlier in this annex.

18.7.2 Additional Mitigation Efforts

In addition to the mitigation actions completed in Table 18-15, Hudson identified the following mitigation efforts completed since the last HMP:

- None Identified

Since the adoption of the County's first HMP, Hudson has made significant mitigation progress in the following areas:

- None Identified

Table 18-15. Status of Previous Mitigation Actions

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2025 HMP or Discontinue 2. If including action in the 2025 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
2020-NHSA-001	Wet weather pump station at 11th Street area	Coastal Storm, Severe Weather, Flood	NHSA, City of Hoboken Eng. and DPW	**Problem**: Flooding of 8th to 11th Street - west side of Hoboken. **Solution**: The City of Hoboken submitted a Letter of Intent ("LOI") to the New Jersey Environmental Infrastructure Trust for a $9 million low interest loan to install a new wet weather pump station at 11th Street along the waterfront. If funded, the City will pay for the pump station's construction and the NHSA will operate and maintain the pump station in perpetuity. Design of the H-5 pump station is complete.	1. Complete 2. N/A	1.Discontinue 2. N/A 3. This action has been completed

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2025 HMP or Discontinue 2. If including action in the 2025 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
2020-NHSA-002	Northeast Resilience Park	N/A	NHSA and City of Hoboken	**Problem**: The northwest section of the City of Hoboken generates CSOs. This can lead to sources of pollution in the Hudson River. **Solution**: Build a stormwater storage tank/pump station and stormwater collection system. This will help reduce the amount of pollution sources entering Hudson River.	1.In Progress 2. Currently under construction	1.Include 2. Completion spring of 2025 3. N/A

Commented [SU2]: NHSA: Please confirm if this has concluded or still in progress.

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2025 HMP or Discontinue 2. If including action in the 2025 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
2020-NHSA-003	Madison Street Sewer Replacement Project	Coastal Storm, Severe Weather, Flood	NHSA and City of Hoboken	**Problem**: During periods of heavy rain, areas in Hoboken (9th and Madison) flood and affect local businesses and residents. This section of the road is considered a lifeline as it provides direct access to emergency services. **Solution**: Raise street grades and improve combined sewer conveyance. This will help reduce street flooding, protecting businesses and residents, and allowing roadways to remain open.	1.In Progress 2. Under construction	1.Include 2. Completion in spring of 2026 3. N/A

18.7.3 Proposed Hazard Mitigation Actions for the HMP Update

Hudson participated in the mitigation strategy workshop for this HMP to identify appropriate actions to include in a local hazard mitigation strategy. Its comprehensive consideration of all possible activities to address hazards of concern included review of the following FEMA documents:

- FEMA 551 "Selecting Appropriate Mitigation Measures for Floodprone Structures" (March 2007)
- FEMA "Mitigation Ideas—A Resource for Reducing Risk to Natural Hazards" (January 2013).

The action worksheets included at the end of this annex list the mitigation actions that Hudson would like to pursue in the future to reduce the effects of hazards. The actions are dependent upon available funding (grants and local match availability) and may be modified or omitted at any time based on the occurrence of new hazard events and changes in County priorities.

Table 18-16 indicates the range of proposed mitigation action categories. The four FEMA mitigation action categories and the six CRS mitigation action categories are listed in the table to further demonstrate the wide range of activities and mitigation measures selected.

Volume I identifies 14 evaluation criteria for prioritizing the mitigation actions. To assist with rating each mitigation action as high, medium, or low priority, a numeric rank is assigned (-1, 0, or 1) for each of the evaluation criteria. Table 18-17 provides a summary of the prioritization of all proposed mitigation actions for the HMP update.

Table 18-16. Analysis of Mitigation Actions by Hazard and Category

	Actions That Address the Hazard, by Action Category									
	FEMA				CRS					
Hazard	LPR	SIP	NSP	EAP	PR	PP	PI	NR	SP	ES
Dam and Levee Failure										
Drought										
Extreme Temperatures										
Flood		X			X	X			X	
Geological Hazards										
Severe Weather		X			X	X			X	
Severe Winter Weather										
Wildfire										

Local Plans and Regulations (LPR)—These actions include government authorities, policies or codes that influence the way land and buildings are being developed and built.

Structure and Infrastructure Project (SIP)—These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure. This type of action also involves projects to construct structures to reduce the impact of hazards.

Natural Systems Protection (NSP)—These are actions that minimize damage and losses and preserve or restore the functions of natural systems.

Education and Awareness Programs (EAP)—These are actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. These actions may also include participation in national programs, such as StormReady and Firewise Communities

Preventative Measures (PR)—Government, administrative or regulatory actions, or processes that influence the way land and buildings are developed and built. Examples include planning and zoning, floodplain local laws, capital improvement programs, open space preservation, and storm water management regulations.

Property Protection (PP)—These actions include public activities to reduce hazard losses or actions that involve (1) modification of existing buildings or structures to protect them from a hazard or (2) removal of the structures from the hazard area. Examples include acquisition, elevation, relocation, structural retrofits, storm shutters, and shatter-resistant glass.

Public Information (PI)—Actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. Such actions include outreach projects, real estate disclosure, hazard information centers, and educational programs for school-age children and adults.

Natural Resource Protection (NR)—Actions that minimize hazard loss and preserve or restore the functions of natural systems. These actions include sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.

Structural Flood Control Projects (SP)—Actions that involve the construction of structures to reduce the impact of a hazard. Such structures include dams, setback levees, floodwalls, retaining walls, and safe rooms.

Emergency Services (ES)—Actions that protect people and property during and immediately following a disaster or hazard event. Services include warning systems, emergency response services, and the protection of essential facilities

Table 18-17. Summary of Prioritization of Actions

Project Number	Project Name	Scores for Evaluation Criteria															High / Medium / Low
		Life Safety	Property Protection	Cost-Effectiveness	Political	Legal	Fiscal	Environmental	Social Vulnerability	Administrative	Hazards of Concern	Climate Change	Timeline	Community Lifelines	Other Local Objectives	Total	
2025-NHSA-001	Madison Street Sewer Replacement Project	1	1	1	1	1	0	0	1	1	1	1	1	1	0	**11**	High
2025-NHSA-002	Expand Wet Weather Treatment Capacity	1	1	1	1	1	0	0	1	1	1	1	1	1	0	**11**	High
2025-NHSA-003	Flood-Proof Pump Station Electrical Systems	0	1	1	1	1	0	0	0	1	1	1	1	1	0	**9**	Medium

Note: Volume I, Section 6 (Mitigation Strategy) conveys guidance on prioritizing mitigation actions. Low (0-6), Medium (7-10), High (11-14).

Action 2025-NHSA-001. Madison Street Sewer Replacement Project

Commented [SU3]: NHSA: For all actions, please review funding source.

Lead Agency:	NHSA
Supporting Agencies:	City of Hoboken
Hazards of Concern:	Flood, Severe Weather
Description of the Problem:	During periods of heavy rain, areas in Hoboken (9th and Madison) flood and affect local businesses and residents. This section of the road is considered a lifeline as it provides direct access to emergency services.
Description of the Solution:	Raise street grades and improve combined sewer conveyance. This will help reduce street flooding, protecting businesses and residents, and allowing roadways to remain open. This project is expected to be completed by Spring 2026.
Estimated Cost:	High
Potential Funding Sources:	I-Bank (NJDEP)
Implementation Timeline:	1-5 years
Goals Met:	1,2,6,7
Benefits:	Reduce street flooding, protect infrastructure, continuity of operations
Impact on Socially Vulnerable Populations:	Emergency vehicles will have the ability to assist residents during a flood event.
Impact on Future Development:	Ensuring safe travel encourages businesses and residents to remain in or move to the area.
Impact on Critical Facilities/Lifelines:	Roadway will be less likely to incur damage from floodwaters and be able to remain open for travel.
Impact on Capabilities:	Economic resiliency is increased by reducing the time needed for businesses to access facilities to reopen following a flood.
Climate Change Considerations:	Consideration should be taken for more frequent flood events as a result of increases in rainfall frequency and severity.
Mitigation Category	Structure and Infrastructure Project
CRS Category	Property Protection
Priority	High
Alternatives	**Action** / **Evaluation** No Action / - Reroute stormwater to nearby water bodies / Backflow risk Installing green infrastructure / Space constraints, requires regular maintenance

Action 2025-NHSA-002. Expand Wet Weather Treatment Capacity

Lead Agency:	NHSA	
Supporting Agencies:	-	
Hazards of Concern:	Flood, Severe Weather	
Description of the Problem:	The Adams Street Wastewater Treatment Plant (WWTP) has limited capacity to treat sewage during wet weather events, leading to CSOs and localized flooding.	
Description of the Solution:	Construct a new outfall to increase the plant's wet weather treatment capacity. This will allow excess flows to be safely discharged, reducing CSOs and improving water quality.	
Estimated Cost:	High	
Potential Funding Sources:	I-Bank (NJDEP), EPA Clean Water Fund	
Implementation Timeline:	1-5 years	
Goals Met:	2,3,6	
Benefits:	Reduces CSOs, protects public health, improves compliance with environmental regulations.	
Impact on Socially Vulnerable Populations:	Reduces exposure to contaminated floodwaters in densely populated areas	
Impact on Future Development:	Supports sustainable growth by improving wastewater infrastructure.	
Impact on Critical Facilities/Lifelines:	Enhances reliability of wastewater treatment during emergencies.	
Impact on Capabilities:	Increases NHSA's capacity to manage extreme weather events.	
Climate Change Considerations:	Prepares NHSA for more frequent and intense rainfall events associated with climate change.	
Mitigation Category	Structure and Infrastructure Project	
CRS Category	Preventative Measures	
Priority	High	
Alternatives	**Action**	**Evaluation**
	No Action	-
	Green Infrastructure	Can not handle large volumes during extreme weather events
	Storage Tanks	Costly and spece-limited

Action 2025-NHSA-003. Flood-Proof Pump Station Electrical Systems

Lead Agency:	NHSA	
Supporting Agencies:	-	
Hazards of Concern:	Flood, Severe Weather	
Description of the Problem:	A key pump station is located in a flood-prone area, putting electrical and control systems at risk of failure during storms.	
Description of the Solution:	Elevate electrical and control components above flood levels to ensure continued operation during flood events.	
Estimated Cost:	High	
Potential Funding Sources:	FEMA HMGP	
Implementation Timeline:	1-5 years	
Goals Met:	2,6	
Benefits:	Continuity of operations; reduce infrastructure vulnerability	
Impact on Socially Vulnerable Populations:	Improves reliability of water services, reducing health and safety risks during extreme weather events.	
Impact on Future Development:	Supports growth by ensuring modern, resilient infrastructure that can handle increased demand.	
Impact on Critical Facilities/Lifelines:	Enhances monitoring and control of water systems, reducing service interruptions to hospitals, shelters, and emergency services.	
Impact on Capabilities:	Enhances operational reliability during emergencies.	
Climate Change Considerations:	Prepares infrastructure for more frequent and intense storms.	
Mitigation Category	Structure and Infrastructure Project	
CRS Category	Property Protection, Structural Flood Control Projects	
Priority	Medium	
Alternatives	**Action**	**Evaluation**
	No Action	-
	Relocate Station	Costly and Complex
	Temporary Flood Barriers	Short term fix