



# 1.0 BOROUGH OF RINGWOOD

This jurisdictional annex to the Passaic County Hazard Mitigation Plan (HMP) provides information to assist public and private sectors in the Borough of Ringwood 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 Ringwood, describes who participated in the planning process, assesses Ringwood’s risk, vulnerability, and capabilities, and outlines a strategy for achieving a more resilient community.

## 1.1 HAZARD MITIGATION PLANNING TEAM

The Borough of Ringwood identified primary and alternate HMP points of contact and developed this plan over the course of several months, with input from many Borough departments. The Deputy Coordinator of the Office of Emergency Management represented the community on the Passaic County HMP Planning Partnership 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 2-1 summarizes Borough officials who participated in the development of the annex and in what capacity. Additional documentation of the Borough’s planning activities through Planning Partnership meetings is included in Volume I.

Table 2-1. Hazard Mitigation Planning Team

Primary Point of Contact	Alternate Point of Contact
Name/Title: Scott Heck, Office of Emergency Management Deputy Coordinator/Borough Manager and Department of Public Works Director Address: 60 Margaret King Ave, Ringwood, NJ 07456 Phone Number: (973) 725-1661 Email: sheck@ringwoodnj.net	Name/Title: Patrick Murray, Jr., Office of Emergency Management Coordinator Address: 60 Margaret King Ave, Ringwood, NJ 07456 Phone Number: (917) 731-6958 Email: <a href="mailto:pmmurray@pjmandsons.com">pmmurray@pjmandsons.com</a>
<b>National Flood Insurance Program Floodplain Administrator</b>	
Name/Title: Jeffrey Yuhas, Borough Engineer Address: 60 Margaret King Ave, Ringwood, NJ 07456 Phone Number: (973) 475-7110 Email: jyuhas@ringwoodnj.net	
<b>Additional Contributors</b>	
Name/Title: Scott Heck, OEM Deputy Coordinator Method of Participation: Participated in Planning Partnership; Attended Planning Partnership Kickoff and Risk Assessment Review/Mitigation Strategy Workshop; Provided information on hazard event history, capabilities, NFIP program, building permits, previous mitigation actions, and critical facilities.	
Name/Title: Patrick Murray, Jr. OEM Coordinator Method of Participation: Participated in Planning Partnership; Attended Planning Partnership Kickoff and Risk Assessment Review/Mitigation Strategy Workshop; Provided information on hazard event history, capabilities, NFIP program, building permits, previous mitigation actions, and critical facilities.	



## 1.2 COMMUNITY PROFILE

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### 1.2.1 Brief History

In the early 1700s, settlers found iron ore, which prompted the construction of the first iron furnace in the area. Iron production was a major industry throughout the community's development, providing ammunition during the Revolutionary War and continuing production throughout the nineteenth and early twentieth century (Johnson 2005). The Borough of Ringwood was incorporated as an independent municipality when Pompton Township was divided into the Boroughs of Bloomingdale, Wanaque and Ringwood in 1918 (Ringwood Chamber of Commerce 2024).

### 1.2.2 Location

According to the U.S. Census Bureau, the Borough has a total land area of 28.2 square miles, of which 25.2 square miles is land and an approximate 3-square miles is water. The Borough is one of five towns that are 100% in the Highlands Preservation Zone. Most of the vacant land in the Borough is limited by wetlands, steep slopes, Category 1 waters, or located within the Highlands Preservation Area. In addition, the Borough zoning ordinance has many protective measures with regard to stormwater runoff and drainage throughout the Borough.

### 1.2.3 Governing Body Format

The Borough of Ringwood is governed by Council-Manager governing body. This structure is centered by the one directly elected body: the Council. The Council is made up of seven members and serves as policymakers for the Borough. Councilmembers serve four-year terms that are staggered. The Councilmembers elect the Mayor and Deputy Mayor in early January each year. The Mayor presides over the Council and votes in its proceedings but has no executive powers (Borough of Ringwood 2025).

The Council appoints the Manager, who serves as the chief executive and administrative officer. The duty of the Manager is to execute the will of the Council through appointing department heads, participating in Council meetings, negotiating contracts, preparing the municipal budget, and advising the Council on the Borough's financial condition. The Manager can be suspended or removed by a majority vote of the Council.

### 1.2.4 Population and Social Vulnerability

According to the U.S. Census, the 2020 population for Ringwood was 11,735, a 4 percent decrease from the 2010 Census.

Research has shown that some populations are at greater risk from hazard events because of decreased resources or physical abilities. These populations can be more susceptible to hazard events based on a number of factors including their physical and financial ability to react or respond during a hazard, and the location and construction quality of their housing. Data from the 2020 U.S. Census indicates that 4.2 percent of the population is 5 years of age or younger, 17.1 percent is 65 years of age or older, 0.9 percent is non-English speaking, 2.2 percent is below the poverty threshold, and 8.1 percent is considered disabled.



## ALICE in Passaic County

ALICE is an acronym for Asset Limited, Income Constrained, Employed – households that earn more than the Federal Poverty Level, but less than the basic cost of living for the County. While conditions have improved for some households, many continue to struggle, especially as wages fail to keep pace with the rising cost of household essentials (housing, child care, food, transportation, health care, and a basic smartphone plan). Households below the ALICE Threshold – ALICE households plus those in poverty – can't afford the essentials.

According to 2021 Point-in-Time-Data from ALICE, 32 percent of the 177,063 households in Passaic County are ALICE households (compared to the state average of 26 percent). The median household income in Passaic is \$75,430, and the County sees a labor force participation rate of 66 percent. Passaic County faces low household income compared to the state average of \$89,296, and is on par with the state average of 66% for labor force participation rates. 15 percent of Passaic households live in poverty, which exceeds the state average of 10 percent.

## 1.3 JURISDICTIONAL CAPABILITY ASSESSMENT AND INTEGRATION

Ringwood 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 community 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 Ringwood to identify opportunities for integrating mitigation concepts into ongoing Borough procedures.

### 1.3.1 Planning and Regulatory Capability and Integration

Table 2-2 summarizes the planning and regulatory tools that are available to Ringwood.



Table 2-2. 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
<b>CODES, ORDINANCES, &amp; REGULATIONS</b>				
<b>Building Code</b>	Yes	NJAC 5:23-3.14, International Building Code – New Jersey Edition, 2018; NJAC 5:24-3.14 Adopted 9/3/2019; Chapter 12 – Building and Housing; Chapter 40, Article 17 – Building Permits	State and Local	Construction Official

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

Chapter 12 established a State Uniform Construction Code Enforcing Agency to be known as the Ringwood Uniform Construction Code Enforcing Agency, consisting of a Construction Official, Building Subcode Official, Plumbing Subcode Official, Electrical Subcode Official, Fire Protection Subcode Official and such other subcode officials for such additional subcodes as the Commissioner of the Department of Community Affairs, State of New Jersey, shall hereafter adopt as part of the State Uniform Construction Code.

Chapter 40, Article 17 was established to ensure compliance with the provisions of this chapter, no person shall erect, alter, or convert any structure or building or part thereof or alter or expand the use of any land subsequent to the adoption of this chapter until a Building Permit has been issued by the Construction Official.

<b>Zoning/Land Use Code</b>	Yes	Chapter 40 – Zoning Regulations	Local	Zoning Officer
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How has or will this be integrated with the HMP and how does this reduce risk?

Zoning regulations are deemed necessary to achieve the following purposes:

- a. To protect the character and maintain the stability of all areas within the Borough, and to promote the orderly and beneficial development of such areas.
- b. To regulate the intensity, nature and extent of use of zoning lots and to determine the areas of open spaces surrounding buildings necessary to provide adequate light and air, privacy and convenience of access to property and to protect the public health, safety and welfare.
- c. To establish building lines and the location of buildings designed for residential, commercial, industrial, office or other uses within such lines and to fix reasonable standards to which buildings or structures shall conform.
- d. To prohibit uses, buildings or structures which are incompatible with the character of development or their permitted uses within specified zoning districts.
- e. To prevent such additions to and alterations or remodeling of existing buildings or structures as would not comply with the restrictions and limitations imposed hereunder.
- f. To limit congestion in the public streets and so protect the public health, safety, convenience and general welfare by providing for off-street parking of motor vehicles and for the loading and unloading of commercial vehicles.
- g. To encourage the appropriate use or development of lands in this community in a manner which will promote the public health, safety, morals, and general welfare.
- h. To secure safety from fire, flood, panic and other natural and man-made disasters.
- i. To ensure that the development and general welfare within Ringwood does not conflict with the development and general welfare of neighboring municipalities, the County and the State as a whole.
- j. To promote the establishment of appropriate population densities and concentrations that will contribute to the well-being of persons, neighborhoods, communities and regions and preservation of the environment.
- k. To provide sufficient space in appropriate locations for a variety of agricultural, residential, recreational, commercial and industrial uses and open space, both public and private, according to their respective environmental requirements in order to meet the needs of all New Jersey citizens.
- m. To promote the conservation of open space and valuable natural resources and to prevent urban sprawl and degradation of the environment through improper use of land.
- o. To reduce the hazards which exist in steep sloping areas by reason of erosion, siltation, flooding, surface water runoff, pollution of potable water supplies from point and non-point sources.



	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
<p>p. To preserve streams, watercourses and wetlands in their natural state wherever possible and practical.            q. To preserve and protect the quality and quantity of ground and surface water supply from pollution and violation of their safe yield.            r. To preserve and protect areas of high water table, flood way and flood hazard areas.            s. To assure the adequacy of existing and proposed culverts and bridges; to induce water recharge into the ground where practical; to lessen non-point pollution; to maintain the integrity of stream channels for their biological functions as well as for drainage and the means necessary for water supply, preservation or prevention or alleviation of flooding.</p>				
<b>Subdivision Code</b>	Yes	Chapter 36 – Land Subdivision	Local	Planning
<p>How has or will this be integrated with the HMP and how does this reduce risk?            The board of commissioners of any county having a county planning board shall provide for the review of all subdivisions of land within the county by said county planning board and for the approval of those subdivisions affecting county road or drainage facilities as set forth and limited hereinafter in this section. Borough has a Planning Board. The Borough Land Subdivision code (Chapter 36) provides rules, regulations and standards to guide land subdivision and land use control in the Borough. The flood hazard, wetlands, percent slope need to be included in the subdivision application to be reviewed by the Planning Board.</p>				
<b>Site Plan Code</b>	Yes	Chapter 36 – Land Subdivision	Local	Planning
<p>How has or will this be integrated with the HMP and how does this reduce risk?            The board of commissioners of any county having a county planning board shall provide for the review of all subdivisions of land within the county-by-county planning board and for the approval of those subdivisions affecting county road or drainage facilities. 40:27-6.10: Each municipal clerk shall file with the county planning board a copy of the planning and zoning ordinances of the municipality and shall notify the county planning board of the introduction of any revision or amendment of such an ordinance which affects lands adjoining county roads or other county lands, or lands lying within 200 feet of a municipal boundary, or proposed facilities or public lands shown on the county master plan or official county map.</p>				
<b>Stormwater Management Code</b>	Yes	Chapter 28 – Stormwater Management	Local	Planning, Stormwater Coordinator
<p>How has or will this be integrated with the HMP and how does this reduce risk?            The purpose of this chapter is to establish minimum stormwater management requirements and controls for major development (i.e., one acre more acre of land or increasing impervious surface by ¼ acre or more) in the Borough of Ringwood. Stormwater management measures for major development shall be developed to meet the erosion control, groundwater recharge, stormwater runoff quantity, and stormwater runoff quality standards in the chapter. To the maximum extent feasible, these standards shall be met by incorporating nonstructural stormwater management strategies into the design. If these strategies alone are not sufficient to meet these standards, structural stormwater management measures necessary to meet these standards shall be incorporated into the design.</p>				
<b>Post-Disaster Recovery/ Reconstruction Code</b>	No	-	-	-
<p>How has or will this be integrated with the HMP and how does this reduce risk?            N/A</p>				



	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
<b>Real Estate Disclosure Requirements</b>	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?

This law went into effect in March 2024 during the planning process of this plan update.



	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
<b>Growth Management</b>	Yes	Chapter 40 – Zoning Regulations	Local	Construction Official
<p>How has or will this be integrated with the HMP and how does this reduce risk?            The Zoning Regulations:</p> <ul style="list-style-type: none"> <li>Establish a precise and detailed plan for the use of land and buildings in the Borough of Ringwood and is enacted in order to promote and protect the public health, safety, morals and general welfare of the people.</li> <li>Encourage the appropriate use or development of lands in this community in a manner which will promote the public health, safety, morals, and general welfare.</li> <li>Ensure that the development and general welfare within Ringwood does not conflict with the development and general welfare of neighboring municipalities, the County and the State as a whole.</li> <li>Promote the establishment of appropriate population densities and concentrations that will contribute to the well-being of persons, neighborhoods, communities and regions and preservation of the environment.</li> </ul>				
<b>Environmental Protection Ordinance(s)</b>	Yes	Chapter 37 – Environmental Impact Statements	Local	Planning Board, Board of Adjustment
<p>How has or will this be integrated with the HMP and how does this reduce risk?            Environmental Assessment Ordinance (Environmental Impact Statement) was passed in compliance with the Highlands Act. The Borough is one of five towns that are 100 percent within the Highlands Preservation Zone. The EIS considers slopes, stream corridors, floodplains, water supply and other hazard areas and environmental resources.</p>				
<b>Flood Damage Prevention Ordinance</b>	Yes	Chapter 27 – Flood Damage Prevention	Federal, State, Local	Construction Official
<p>How has or will this be integrated with the HMP and how does this reduce risk?            These regulations, in combination with the flood provisions of the Uniform Construction Code and FHACA shall apply to all proposed development in flood hazard areas established in Section 27-102 of these regulations. The purposes and objectives of these regulations are to promote the public health, safety and general welfare and to minimize public and private losses due to flood conditions in specific flood hazard areas through the establishment of comprehensive regulations for management of flood hazard areas, designed to:</p> <ol style="list-style-type: none"> <li>Protect human life and health.</li> <li>Prevent unnecessary disruption of commerce, access, and public service during times of flooding.</li> <li>Manage the alteration of natural floodplains, stream channels and shorelines;</li> <li>Manage filling, grading, dredging and other development which may increase flood damage or erosion potential.</li> <li>Prevent or regulate the construction of flood barriers which will divert floodwater or increase flood hazards.</li> <li>Contribute to improved construction techniques in the floodplain.</li> <li>Minimize damage to public and private facilities and utilities.</li> <li>Help maintain a stable tax base by providing for the sound use and development of flood hazard areas.</li> <li>Minimize the need for rescue and relief efforts associated with flooding.</li> <li>Ensure that property owners, occupants, and potential owners are aware of property located in flood hazard areas.</li> <li>Minimize the need for future expenditure of public funds for flood control projects and response to and recovery from flood events.</li> <li>Meet the requirements of the National Flood Insurance Program for community participation set forth in Title 44 Code of Federal Regulations, Section 59.22.</li> </ol> <p>This ordinance follows the latest model code coordinated ordinance and meets the minimum requirements for complying with the NFIP.</p>				



	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
<b>Wellhead Protection</b>	Yes	Chapter 39 – Wellhead Protection	Local	Zoning Officer and Engineer

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

Delineation of well head protection areas (WHPAs) is part of the NJ-approved 1991 well head protection plan (WHPP) for public community water supply wells. These are priority areas for efforts to prevent and clean up ground water contamination. Municipalities are empowered to regulate land use, physical facilities and other activities within WHPAs areas, the potential for groundwater contamination can be reduced under the provisions of the New Jersey Municipal Land Use Law, N.J.S.A. 40:55D-1 et seq., which authorizes each municipality to plan and regulate land use to secure a safe and adequate drinking water supply for its residents. Also refer to Safe Drinking Water Regulations (NJAC 7:10-11.7(b)1)).

The Borough’s Well Head Protection ordinance is Chapter 39. The groundwater under the Borough is a major source of existing and future water supplies, including drinking water. The Borough of Ringwood is empowered to regulate these activities under the provisions of the New Jersey Municipal Land Use Law, N.J.S.A 40:55D-1 et seq., which authorizes each Municipality to plan and regulate land use to secure a safe and adequate drinking water supply for its residents.

<b>Emergency Management Ordinance</b>	No	-	-	-
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How has or will this be integrated with the HMP and how does this reduce risk?

N/A

<b>Climate Change Ordinance</b>	No	-	-	-
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How has or will this be integrated with the HMP and how does this reduce risk?

N/A

<b>Other</b>	Yes	Tree Protection Ordinance	Local	Building Department
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How has or will this be integrated with the HMP and how does this reduce risk?

Tree Protection Ordinance in the zoning ordinance – This ordinance regulates the removal of trees on private property; a permit is needed from the Building Department prior to removal.

**PLANNING DOCUMENTS**

<b>General/Comprehensive Plan</b>	Yes	Borough of Ringwood Master Plan, Reexamination, 2022	Local	Planning
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How has or will this be integrated with the HMP and how does this reduce risk?

The Borough intends to integrate the Master Plan with the updated HMP.

<b>Capital Improvement Plan</b>	Yes	Borough of Ringwood Master Plan, Reexamination, 2022	Local	Borough Manager
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How has or will this be integrated with the HMP and how does this reduce risk?

The Borough intends to integrate the Master Plan with the updated HMP.

<b>Disaster Debris Management Plan</b>	No	-	-	-
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How has or will this be integrated with the HMP and how does this reduce risk?

N/A





	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
<b>Floodplain Management or Watershed Plan</b>	Yes	An Assessment of the Lakes and Watersheds of Ringwood Borough, 2021	Local	Borough Manager
<p>How has or will this be integrated with the HMP and how does this reduce risk?            Ringwood Borough in Passaic County is located entirely within the Preservation Area of the Highlands Region (18,230 acres). The municipality's Petition for Plan Conformance was approved by the Highlands Council on October 13, 2011. Providing drinking water to millions of New Jersey residents, the Borough of Ringwood is situated in the heart of the New Jersey Highlands and is home to several public and private lakes that sit within the Ramapo Mountains.</p> <p>In order to take an active role in the management of these natural resources within multiple watersheds, the Borough of Ringwood will be the first municipality in the state of New Jersey to take a regional approach to private lake management through a public-private partnership (PPP) with lake associations. Although these lakes are private, the Borough wishes to take an active role in the management of the surrounding watersheds of these lakes, as the lakes themselves are managed by their respective associations. This regional approach to lake management has recently been informally suggested by staff of both the New Jersey Department of Environmental Protection (NJDEP) and the New Jersey Highlands Council (NJHC).</p> <p>The assessment includes various recommendations for stormwater management upgrades such as porous pavement, vegetated swales, retention basins, etc.</p>				
<b>Stormwater Management Plan</b>	Yes	Municipal Stormwater Management Plan, 2005	State and Local	Stormwater Coordinator
<p>How has or will this be integrated with the HMP and how does this reduce risk?            NJPDES general permits authorizing stormwater discharges from Tier A and Tier B municipalities, as well as public complexes, and highway agencies that discharge stormwater from municipal separate storm sewers (MS4s).</p>				
<b>Stormwater Pollution Prevention Plan</b>	Yes	Stormwater Pollution Prevention Plan	State and Local	Stormwater Coordinator
<p>How has or will this be integrated with the HMP and how does this reduce risk?            Permits authorizing stormwater discharges from Tier A and Tier B municipalities, as well as public complexes, and highway agencies that discharge stormwater from municipal separate storm sewers (MS4s).</p>				
<b>Open Space Plan</b>	Yes	Open Space Plan, 2010	Local	Open Space Committee
<p>How has or will this be integrated with the HMP and how does this reduce risk?            To preserve open space and provide a balance of recreational activities, while improving and protecting water and air quality, historic sites, farmland, and other natural resources.</p>				
<b>Urban Water Management Plan</b>	No	-	-	-
<p>How has or will this be integrated with the HMP and how does this reduce risk?            N/A</p>				
<b>Habitat Conservation Plan</b>	No	-	-	-
<p>How has or will this be integrated with the HMP and how does this reduce risk?            N/A</p>				
<b>Economic Development Plan</b>	Yes	Borough of Ringwood Master Plan, Reexamination, 2022	Local	Borough Manager
<p>How has or will this be integrated with the HMP and how does this reduce risk?            The Borough intends to integrate the Master Plan with the updated HMP.</p>				
<b>Community Wildfire Protection Plan</b>	No	-	-	-
<p>How has or will this be integrated with the HMP and how does this reduce risk?            N/A</p>				



	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
<b>Community Forest Management Plan</b> How has or will this be integrated with the HMP and how does this reduce risk? N/A	No	-	-	-
<b>Transportation Plan</b> How has or will this be integrated with the HMP and how does this reduce risk? N/A	No	-	-	-
<b>Agriculture Plan</b> How has or will this be integrated with the HMP and how does this reduce risk? N/A	No	-	-	-
<b>Climate Action/ Resilience/Sustainability Plan</b> How has or will this be integrated with the HMP and how does this reduce risk? N/A	No	-	-	-
<b>Tourism Plan</b> How has or will this be integrated with the HMP and how does this reduce risk? N/A	No	-	-	-
<b>Business/ Downtown Development Plan</b> How has or will this be integrated with the HMP and how does this reduce risk? N/A	No	-	-	-
<b>Other</b> <ul style="list-style-type: none"> <li>Stream Corridor Management Plan</li> <li>Housing Element and Fair Share Plan, May 10, 2010</li> <li>Natural Resource Inventory, June 2005</li> </ul>	Yes	-	Local	-
<b>RESPONSE/RECOVERY PLANNING</b>				
<b>Emergency Operations Plan</b> How has or will this be integrated with the HMP and how does this reduce risk? N/A	No	-	-	-
<b>Continuity of Operations Plan</b> How has or will this be integrated with the HMP and how does this reduce risk? N/A	No	-	-	-
<b>Substantial Damage Response Plan</b> How has or will this be integrated with the HMP and how does this reduce risk? N/A	No	-	-	-
<b>Threat and Hazard Identification and Risk Assessment</b> How has or will this be integrated with the HMP and how does this reduce risk? N/A	No	-	-	-
<b>Post-Disaster Recovery Plan</b> How has or will this be integrated with the HMP and how does this reduce risk? N/A	No	-	-	-



	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
<b>Public Health Plan</b>	Yes	Health Community Planning Report, 2022	Local	Borough Health Department
How has or will this be integrated with the HMP and how does this reduce risk? Provides individual, municipal-level reports that offer a snapshot of a municipality's health and environmental data to help promote a healthy and safe environment.				
<b>Other</b>	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				

### 1.3.2 Development and Permitting Capability

Table 2-3 summarizes the capabilities of Ringwood to oversee and track development.

Table 2-3. Development and Permitting Capability

	Yes/No	Comment
Do you issue development permits?	Yes	
<ul style="list-style-type: none"> <li>If you issue development permits, what department is responsible?</li> <li>If you do not issue development permits, what is your process for tracking new development?</li> </ul>	N/A	Building Department
Are permits tracked by hazard area? (For example, floodplain development permits.)	Yes	-
Do you have a buildable land inventory?	Yes	
<ul style="list-style-type: none"> <li>If you have a buildable land inventory, please describe</li> </ul>		Borough has a build-out plan as part of the COHA obligation
Describe the level of buildout in your jurisdiction.	N/A	Land use in the Borough is predominately conservation and residential, with commercial recreation, industrial, and business uses. Since the adoption of the 2012 Master Plan Reexamination Report, the Borough has experienced minimal development

### 1.3.3 Administrative and Technical Capability

Table 2-4 summarizes potential staff and personnel resources available to Ringwood and their current responsibilities that contribute to hazard mitigation.

Table 2-4. Administrative and Technical Capabilities

Resources	Available? (Yes/No)	Comment (available staff, responsibilities, support of hazard mitigation)
<b>ADMINISTRATIVE CAPABILITY</b>		
Planning Board	Yes	Planning/Land Use Administrator



Resources	Available? (Yes/No)	Comment (available staff, responsibilities, support of hazard mitigation)
		The Ringwood Planning Board was established to perform the duties of a municipal Planning Board as outlined in the Municipal Land Use Law. The Board consists of nine members and two alternates. Members include the Mayor, a member of the Borough Council as well as nine residents of the community. The resident members are appointed by the Mayor.
Zoning Board of Adjustment	Yes	The Zoning Board reviews appeals from the decision of the Zoning Officer, requests for interpretation of the Zoning Ordinance, Dimensional Variances, Use Variances, Map Act Variances, Site Plan reviews and Subdivision Approval.
Planning Department	No	-
Mitigation Planning Committee	No	-
Environmental Board/Commission	Yes	Environmental Commission
Open Space Board/Committee	Yes	<p>Open Space, Conservation, Recreation, Farmland and Historical Preservation Advisory Committee</p> <p>The Committee shall prioritize the needs of the Borough with specific regard to the a.) Need for Environmental Conservation and Protection of Open Space, b.) Need for Additional Recreational/Parkland Uses, c.) Need for and Viability of Purchases for Farmland and Historical Preservation and Restoration Purposes.</p>
Economic Development Commission/Committee	Yes	<p>Economic Development Advisory Commission</p> <p>The Ringwood Economic Development Commission will provide direct support to light industry and commercial companies seeking to relocate or expand in Ringwood.</p>
Public Works/Highway Department	Yes	<p>Department of Public Works</p> <p>Responsible for the operation and functioning of the Borough's extensive municipal infrastructure (roadways, storm drainage, sanitary sewerage, potable water supply and distribution, recycling and solid waste collection and disposal) as well as maintenance of ballfields, parks, and playgrounds.</p>
Construction/Building/Code Enforcement Department	Yes	<p>Building and Zoning</p> <p>The Building Department includes administration and enforcement of zoning, building and other codes as well as property maintenance. Within the Building Department, the Ringwood Construction Official enforces the New Jersey State Uniform Construction Code (UCC).</p>
Emergency Management/Public Safety Department	Yes	<p>Emergency Management and Police Department</p> <p>The Borough of Ringwood Office of Emergency Management is a standalone component of the Municipal government. The office works closely with Federal, State, County and local agencies to assure the coordination of large-scale events. It plans for, coordinates and directs</p>



Resources	Available? (Yes/No)	Comment (available staff, responsibilities, support of hazard mitigation)
		operations at large scale civil emergencies that usually require the coordinated efforts of multiple components of municipal government, outside agencies and local volunteer groups.
Maintenance programs to reduce risk (stormwater maintenance, tree trimming, etc.)	Yes	DPW/Engineering – stormwater management, de-snagging, clearing
Mutual aid agreements	Yes	Borough Manager
Human Resources Manual - Do any job descriptions specifically include identifying or implementing mitigation projects or other efforts to reduce natural hazard risk?	No	-
Other	No	-
<b>TECHNICAL/STAFFING CAPABILITY</b>		
Planners or engineers with knowledge of land development and land management practices	Yes	Engineering/Borough Engineer
Engineers or professionals trained in building or infrastructure construction practices	Yes	Engineering/Borough Engineer
Planners or engineers with an understanding of natural hazards	Yes	Engineering/Borough Engineer
Staff with expertise or training in benefit/cost analysis	Yes	Borough Manager
Professionals trained in conducting damage assessments	No	-
Personnel skilled or trained in GIS and/or Hazus applications	Yes	Engineering/Borough Engineer
Staff that work with socially vulnerable populations or underserved communities	Yes	Health Department
Environmental scientists familiar with natural hazards	No	-
Surveyors	No	-
Emergency manager	Yes	Borough Manager
Grant writers	No	-
Resilience Officer	No	-
Other (this could include stormwater engineer, environmental specialist, etc.)	No	-

### 1.3.4 Fiscal Capability

Table 2-5 summarizes financial resources available to Ringwood.



Table 2-5. Fiscal Capabilities

Financial Resources	Accessible or Eligible to Use? (Yes/No)
Community Development Block Grants (CDBG, CDBG-DR)	Yes
Capital improvement project funding	Yes
Authority to levy taxes for specific purposes	Yes, for capital improvements, water system upgrades and roads
User fees for water, sewer, gas, or electric service	Yes, water and sewer
Impact fees for homebuyers or developers of new development/homes	No
Stormwater utility fee	No
Incur debt through general obligation bonds	Yes
Incur debt through special tax bonds	No
Incur debt through private activity bonds	No
Withhold public expenditures in hazard-prone areas	No
Other federal or state funding programs	Yes, NJDOT and Highlands Coalition Grant
Open Space Acquisition funding programs	No
Other (for example, Clean Water Act 319 Grants [Nonpoint Source Pollution])	No

### 1.3.5 Education and Outreach Capability

Table 2-6 summarizes the education and outreach resources available to Ringwood.

Table 2-6. Education and Outreach Capabilities

Outreach Resources	Available? (Yes/No)	Comment
Public information officer or communications office	Yes	-
Personnel skilled or trained in website development	Yes	-
Hazard mitigation information available on your website	Yes	Community preparedness toolkit; FEMA's website; hurricane survival guide for New Jersey; Gypsy Moth bulletin and other resources for residents on emergency preparedness; stormwater management information, FEMA flood maps, mines, and superfund sites..
Social media for hazard mitigation education and outreach	Yes	Used for Sustainable Jersey efforts Post information regarding cleaning catch basis and storm events
Citizen boards or commissions that address issues related to hazard mitigation	No	-
Warning systems for hazard events	Yes	Reverse 911 and social media
Natural disaster/safety programs in place for schools	No	-
Organizations that conduct outreach to socially vulnerable populations and underserved populations	No	-



Outreach Resources	Available? (Yes/No)	Comment
Public outreach mechanisms / programs to inform citizens on natural hazards, risk, and ways to protect themselves during such events	Yes	Police department phone line for road hazards and street closures

### 1.3.6 Community Classifications

Table 2-7 summarizes classifications for community programs available to Ringwood.

Table 2-7. Community Classifications

Program	Participating? (Yes/No)	Classification	Date Classified
Community Rating System (CRS)	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	Yes	Class 4 (1 and 2 dwellings) Class 3 for all other construction	-
Public Protection (ISO Fire Protection Classes 1 to 10)	No	-	-
National Weather Service StormReady Certification	No	-	-
Firewise Communities classification	No	-	-
New Jersey Sustainable Jersey Community	Yes	Bronze	December 10, 2021
Other: Organizations with mitigation focus (advocacy group, non-government)	N/A	-	-

N/A = Not applicable

— = Unavailable

### 1.3.7 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 2-8 summarizes the adaptive capacity for each identified hazard of concern and the Borough’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 2-8. Adaptive Capacity

Hazard	Adaptive Capacity - Strong/Moderate/Weak
Dam Failure	Moderate
Drought	Moderate
Geological Hazards	Moderate



Hazard	Adaptive Capacity - Strong/Moderate/Weak
Extreme Temperature	Moderate
Flood	Moderate
Severe Weather	Moderate
Severe Winter Weather	Moderate
Wildfire	Moderate

## 1.4 NATIONAL FLOOD INSURANCE PROGRAM COMPLIANCE

This section provides specific information on the management and regulation of the regulatory floodplain, including current and future compliance with the National Flood Insurance Program (NFIP). The floodplain administrator listed in Table 2-1 is responsible for maintaining this information.

### 1.4.1 NFIP Statistics

Table 2-9 summarizes the NFIP policy and claim statistics for Ringwood.

Table 2-9. Ringwood NFIP Summary of Policy and Claim Statistics

# Claims (Losses)	3
Total Loss Payments	\$30,759
# Repetitive Loss Properties (NFIP definition)	1
# Repetitive Loss Properties (FMA definition)	0
# Severe Repetitive Loss Properties (NFIP definition)	0
# Severe Repetitive Loss Properties (FMA definition)	0

*NFIP Definition of Repetitive Loss: The NFIP defines a repetitive loss property as any insurable building for which two or more claims of more than \$1,000 were paid by the NFIP within any rolling 10-year period since 1978.*

*FMA Definition of Repetitive Loss: FEMA’s Flood Mitigation Assistance (FMA) program defines a repetitive loss property as any insurable building that has incurred flood-related damage on two occasions, in which the cost of the repair, on average, equaled or exceeded 25 percent of the market value of the structure at the time of each such flood event.*

*Definition of Severe Repetitive Loss: A residential property covered under an NFIP flood insurance policy and: (a) That has at least four NFIP claim payments over \$5,000 each, and the cumulative amount of such claims payments exceeds \$20,000; or (b) For which at least two separate claims payments have been made with the cumulative amount of the building portion of such claims exceeding the market value of the building. At least two of the claims must have occurred within any 10-year period, more than 10 days apart.*

Source: NJOEM 2024

### 1.4.2 Flood Vulnerability Summary

Table 2-10 provides a summary of the NFIP program in Ringwood.

Table 2-10. NFIP Summary

NFIP Topic	Comments
Flood Vulnerability Summary	





NFIP Topic	Comments
Describe areas prone to flooding in your jurisdiction.	Low lying properties and those downstream of culverts are prone to flooding.
Do you maintain a list of properties that have been damaged by flooding?	No
Do you maintain a list of property owners interested in flood mitigation?	No
How many homeowners and/or business owners are interested in mitigation (elevation or acquisition)?	Unknown
Are any RiskMAP projects currently underway in your jurisdiction? If so, state what projects are underway.	No
How do you make Substantial Damage determinations?	Unknown
How many Substantial Damage determinations were declared for recent flood events in your jurisdiction?	Unknown
How many properties have been mitigated (elevation or acquisition) in your jurisdiction? If there are mitigation properties, how were the projects funded?	None
Do your flood hazard maps adequately address the flood risk within your jurisdiction? If not, state why.	Yes
<b>NFIP Compliance</b>	
What local department is responsible for floodplain management?	Manager and Engineer
Are any certified floodplain managers on staff in your jurisdiction?	No
Do you have access to resources to determine possible future flooding conditions from climate change?	Yes
Does your floodplain management staff need any assistance or training to support its floodplain management program? If so, what type of assistance/training is needed?	No
Provide an explanation of NFIP administration services you provide (e.g., permit review, GIS, education/outreach, inspections, engineering capability)	Provide residents with mapping amendments
How do you determine if proposed development on an existing structure would qualify as a substantial improvement?	This is complete through Ordinance 27-103.14., with the Construction Official and Floodplain Administrator
What are the barriers to running an effective NFIP program in the community, if any?	Lack of Public Education
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? If so, state the violations.	None
When was the most recent Community Assistance Visit (CAV) or Community Assistance Contact (CAC)?	January 2023 with NJDEP
What is the local law number or municipal code of your flood damage prevention ordinance?	Ordinance 2023-02 Chapter 27 Ringwood Municipal Code
What is the date that your flood damage prevention ordinance was last amended?	April 18, 2023



NFIP Topic	Comments
Does your floodplain management program meet or exceed minimum requirements? If exceeds, in what ways?	The Borough meets the minimum requirements
Are there other local ordinances, plans or programs (e.g., site plan review) that support floodplain management and meeting the NFIP requirements? For instance, does the planning board or zoning board consider efforts to reduce flood risk when reviewing variances such as height restrictions?	Yes
Does your community plan to join the CRS program or is your community interested in improving your CRS classification?	No

## 1.5 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 2-11 through Table 2-13.

Table 2-11. 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
<b>2020</b>				
Total Permits	1	0	0	1
Permits within SFHA	0	0	0	0
<b>2021</b>				
Total Permits	5	0	0	5
Permits within SFHA	0	0	0	0
<b>2022</b>				
Total Permits	5	0	0	5
Permits within SFHA	0	0	0	0
<b>2023</b>				
Total Permits	1	0	0	1
Permits within SFHA	0	0	0	0

SFHA = Special Flood Hazard Area (1% flood event)

Table 2-12. Recent Major Development and Infrastructure from 2017 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					

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



Table 2-13. 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					

## 1.6 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 Ringwood’s risk assessment results and data used to determine the hazard ranking. Key local risk assessment information is presented below.

### 1.6.1 Hazard Area

Hazard area maps provided below illustrate the probable hazard areas impacted within the Borough are shown in Figure 2-1 through Figure 2-2. 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 Ringwood has significant exposure. The maps show the location of potential new development, where available.



Figure 2-1. Ringwood NEHRP Hazard Area Extent and Location Map

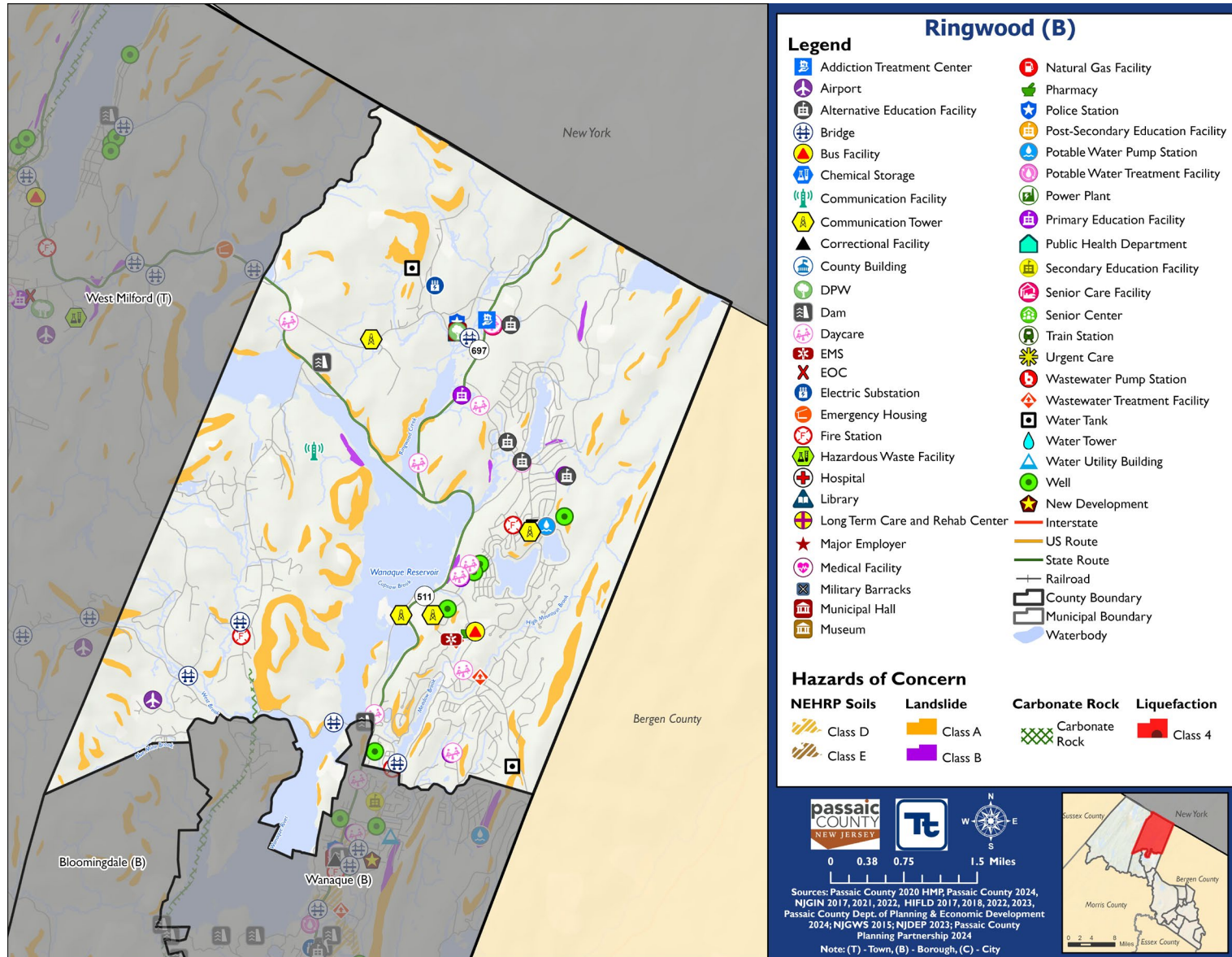
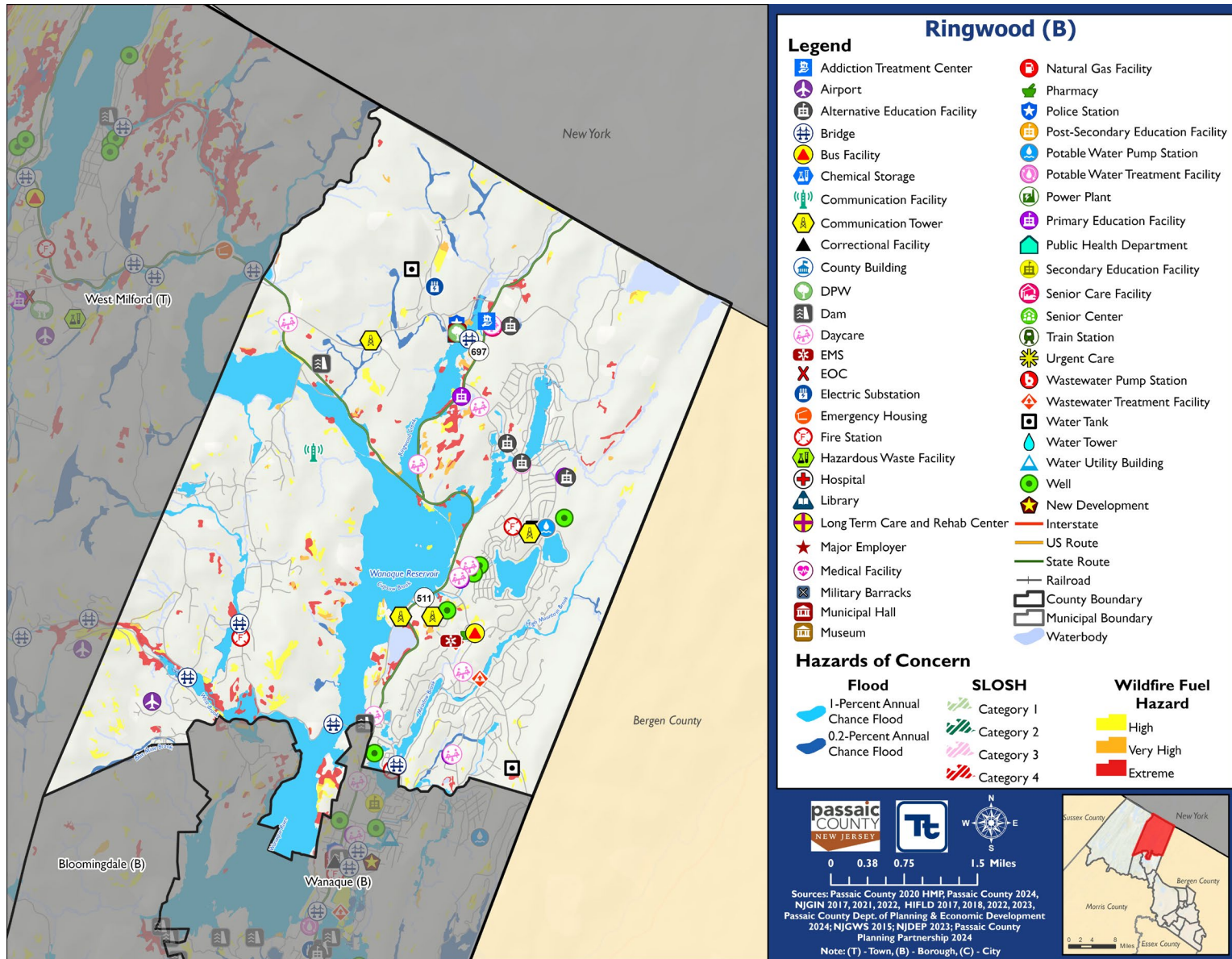




Figure 2-2. Ringwood Flood and Wildfire Hazard Area Extent and Location Map





### 1.6.2 Hazard Event History

The history of natural and non-natural hazard events in Ringwood is detailed in Volume I, where each hazard profile includes a chronology of historical events that have affected the County and its municipalities. Table 2-14 provides details on loss and damage in Ringwood during hazard events since the last hazard mitigation plan update.

Table 2-14. Hazard Event History in Ringwood

Dates of Event	Event Type (Disaster Declaration)	County Designated?	Summary of Event	Summary of Damage and Losses in Ringwood
December 17-23, 2023	Flood	N/A	Over 5 inches of rainfall resulted in major flooding and power outages in the region. State of emergency and evacuations were declared during the initial storm and subsequent riverine flooding.	The Borough conducted numerous area cleanups.
January 20, 2020-May 11, 2023	Covid-19 Pandemic (EM-3451-NJ, DR-4488-NJ)	Yes	As of September 26, 2023, Passaic County accounted for 7,530 positive cases of COVID-19, and 32 reported deaths (State of New Jersey, 2023).	The Borough had to pay \$1,013,506 in overtime and staffing needs.
September 1-3, 2021	Remnants of Hurricane Ida (EM-3573-NJ, DR-4614-NJ)	Yes	The remnants of Hurricane Ida produced heavy rainfall and riverine and flash floods. Rainfall totals exceed 3 inches in parts of the County; 4 water rescues occurred due to flash flooding.	The Borough incurred about \$314,550 in damages and overtime.

EM = Emergency Declaration (FEMA)  
 FEMA = Federal Emergency Management Agency  
 DR = Major Disaster Declaration (FEMA)  
 N/A = Not applicable

### 1.6.3 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 Ringwood .

#### 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. Ringwood 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 Borough indicated that it agreed with the preliminary hazard rankings.



Table 2-15 shows Ringwood’s final hazard rankings for identified hazards of concern. Mitigation action development uses the ranking to target hazards with the highest risk.

Table 2-15. Hazard Ranking

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

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

### Critical Facilities

Table 2-16 identifies critical facilities in the community located in the 1 percent and 0.2 percent annual chance floodplains.

Table 2-16. Critical Facilities Flood Vulnerability

Name	Type	Vulnerability	
		1% Annual Chance Event	0.2% Annual Chance Event
1600404	Bridge	X	X
1600406	Bridge	X	X
1600491	Bridge	X	X
1600496	Bridge	X	X
James Drive Sewer Plant	Wastewater Treatment Facility	X	X
Pump Station	Well	-	X
Pump Station - Potable	Potable Water Pump Station	-	X
Water Buffering Tank	Water Tank	-	X
Well 7	Well	-	X

*Source: Passaic County 2020 HMP, Passaic County 2024, NJGIN 2017, 2021, 2022, HIFLD 2017, 2018, 2022, 2023, Passaic County Dept. of Planning & Economic Development 2024*

In addition to critical facilities that are exposed to flooding, the Borough of Ringwood contains at least one high hazard dam; however, this information is considered sensitive by the County and site-specific information is not provided.



## 1.6.4 Identified Issues

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

- Frequent flooding events have resulted in damages to residential properties. These properties have been repetitively flooded as documented by paid NFIP claims. The Borough has one repetitive loss properties, but other nearby properties may be impacted by flooding as well.
- The following critical facilities are municipally owned and located in the special flood hazard area:
  - Highway Bridge: 1600404
  - Highway Bridge: 1600406
  - Highway Bridge: 1600491
  - Highway Bridge: 1600496
  - James Drive Sewer Plant
  - Pump Station
  - Pump Station - Potable
  - Water Buffering Tank
  - Well 7
- Major disaster events can result in large amounts of debris that overwhelm normal trash collection operations. Depending on the amount generated, temporary staging areas for debris collection may be needed. The municipality does not have a disaster debris management plan in place. During a disaster that results in debris, a plan with outlined responsibilities is needed to adequately address post-disaster cleanup operations.
- The municipality does not have a Substantial Damage Management Plan in place, nor do they have a formal process in place when conducting substantial damage determinations. The municipality is in need of a formal process and plan to provide a framework for conducting such inspections and determinations.
- The Borough experiences flooding along roadways and is leading to bank erosion as well. The Borough does not have a list of problem roads/culverts to start making improvements with.
- The Borough does not have an official partnership with the Highlands for testing inflows into the lake as well as testing the phosphorus and nitrogen levels present in the lake.
- The Borough does not have a permanent redundant power source at the MJ Ryerson School/Shelter and the Peter Cooper School/Shelter and both of these facilities are necessary heating/cooling and emergency shelters for the Borough.
- The Borough Library consistently experiences flooding issues; however, it does not keep track of property owners that may be interested in mitigation or related technical assistance.
- The Borough suffers from drainage issues along the following roads:
  - High Mountain Road Phase 1 and 2
  - Skyline Lake Drive
  - Brookcyde Avenue
- There are multiple dams, which are critical infrastructures, located in the 1- and 0.2-percent flood hazard areas. The Borough also has multiple high-hazard potential dams that have the potential to impact those living nearby.





## 1.7 MITIGATION STRATEGY AND PRIORITIZATION

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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.

### 1.7.1 Past Mitigation Action Status

Table 2-17 indicates progress on the Borough'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.

### 1.7.2 Additional Mitigation Efforts

In addition to the mitigation actions completed in Table 2-17, Ringwood did not identify other mitigation efforts completed since the last HMP.



**Table 2-17. 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-Ringwood-001	-		Borough Manager	Increase culvert capacity and raise banks and roadways.	1. No Progress 2. Roadway still floods and bank erosion occurs.	1. Include 2. Keep as is 3. N/A
2020-Ringwood-002	-		Borough Manager	Develop a public private partnership with the Highlands for all lakes, testing inflows into the lake and the lakes to determine phosphorus and nitrogen loading.	1. In Progress 2.	1. Include 2. Keep as is 3. N/A
2020-Ringwood-003	-		Planning Board	When updating the Master Plan, review and align with the Hazard Mitigation Plan to ensure future land use plan take into account high-hazard areas.	1. Complete 2.	1. Discontinue 2. N/A 3. This action is complete
2020-Ringwood-004	-		Emergency Manager	Install permanent generators at critical facility locations in the Borough, including MJ Ryerson School/Shelter and Peter Cooper School/shelter. Extend water system service to Peter Cooper, Erskine, Hewitt and MJ Ryerson schools which are designated shelters.	1. In Progress 2. Public water has been installed at some shelters. Generators are still needed at all facilities.	1. Include 2. Keep as is 3. N/A
2020-Ringwood-005	-		NFIP Floodplain Administrator	Flood proof utilities in Municipal Building/Police Department located on Margaret King Avenue	1. Complete 2.	1. Discontinue 2. N/A 3. This action is complete



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-Ringwood-006	-		NFIP Floodplain Administrator	Conduct outreach to flood-prone property owners, including RL/SRL property owners and provide information on mitigation alternatives. After preferred mitigation measures are identified, collect required property-owner information and develop a FEMA grant application and BCA to obtain funding to implement acquisition/purchase/moving/elevating residential homes in the flood prone area that experience frequent flooding (high risk areas).	1.No Progress 2.	1.Include 2. Keep as is 3. N/A
2020-Ringwood-007	-		Emergency Manager	Develop an internal tracking system to document sinkhole events and associated impacts. Work with property owners to identify appropriate mitigation actions.	1. 2.	1. 2. 3.
2020-Ringwood-008	-		Emergency Manager	Conduct a feasibility study to identify mitigation alternatives to reduce flood impacts to the Library. Identify the most feasible action, apply for funding and implement the action.	1.No Progress 2.	1.Include 2. Keep as is 3. N/A



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-Ringwood-009	-		Engineer	Increase the capacity of the drainage in the Borough including at the following locations identified in the capital plan for improvements: <ul style="list-style-type: none"> <li>• Edgewood Road/Sylvan Lane Drainage</li> <li>• High Mountain Road/Seneca Drive Drainage, Phase 1</li> <li>• High Mountain Road, Phase 2.</li> <li>• Skyline Lake Drive (near #81)</li> <li>• E. Brookcyde Avenue (near 108)</li> </ul>	1. In Progress 2. Drainage is still needed at High Mountain Road Phase 1 and 2, Skyline Lake Drive, and Brookcyde Avenue. Edgewood Road drainage improvements have been recently installed.	1. Include 2. Keep as is 3. N/A



### 1.7.3 Proposed Hazard Mitigation Actions for the HMP Update

Ringwood 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 Ringwood 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 Borough priorities.

Table 2-18 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 2-19 provides a summary of the prioritization of all proposed mitigation actions for the HMP update.



Table 2-18. Analysis of Mitigation Actions by Hazard and Category

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

*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 2-19. 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	
Action 2025-RingwoodB-001	Repetitive Loss Property Mitigation	1	1	1	1	1	0	1	1	1	1	1	1	0	1	12	High
Action 2025-RingwoodB-002.	Critical Facilities in the Floodplain	1	1	1	1	1	0	1	1	1	1	1	1	1	0	12	High
Action 2025-RingwoodB-003	Disaster Debris Management Plan	0	1	1	1	1	0	1	1	1	1	1	1	0	1	11	High
Action 2025-RingwoodB-004	Substantial Damage Management Plan	0	1	1	1	1	0	1	1	1	1	1	1	0	1	11	High
Action 2025-RingwoodB-005	Repetitive Flooded Road Inventory	1	1	1	1	1	0	1	1	1	1	1	1	0	1	12	High
Action 2025-RingwoodB-006	Partnership with the Highlands	1	1	1	1	1	1	1	1	1	1	1	1	1	1	14	High
Action 2025-RingwoodB-007	Permeant Generators at Critical Facilities	1	1	1	1	1	0	0	1	1	1	1	1	1	1	12	High
Action 2025-RingwoodB-008	Library Mitigation	1	1	1	1	1	0	1	1	1	1	1	1	1	0	12	High
Action 2025-RingwoodB-009	Drainage Improvements	1	1	1	1	1	0	0	1	1	1	1	1	1	1	12	High
Action 2025-RingwoodB-010	Dam Owner Partnership	1	1	1	1	1	1	1	1	1	1	1	1	1	0	13	High

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



Action 2025-RingwoodB-001. Repetitive Loss Property Mitigation

Lead Agency:	Public Works	
Supporting Agencies:	Department of Building and Zoning	
Hazard(s) of Concern:	Severe Storm, Flood	
Description of the Problem:	Frequent flooding events have resulted in damages to residential properties. These properties have been repetitively flooded as documented by paid NFIP claims. The Borough has one repetitive loss properties, but other nearby properties may be impacted by flooding as well.	
Description of the Solution:	Conduct outreach to 10 flood-prone property owners, including RL/SRL property owners and provide information on mitigation alternatives. After preferred mitigation measures are identified, collect required property-owner information, and develop a FEMA grant application and BCA to obtain funding to implement acquisition/purchase/moving/elevating residential homes in the flood prone areas that experience frequent flooding (high risk areas).	
Estimated Cost:	Staff Time	
Potential Funding Sources:	BRIC, FMA, HMGP, match from property owners	
Implementation Timeline:	Within 5 Years	
Goals Met:		
Benefits:	Eliminates flood damage to homes and residences, which creating an open space for the municipality and increasing flood storage.	
Impact on Socially Vulnerable Populations:	Removing homes from the floodplain immediately removes the risk to life and property. Socially vulnerable populations may be able to have houses elevated or acquired when it would otherwise be unaffordable.	
Impact on Future Development:	Increased outreach to homeowners within a flood prone area will limit construction in areas that are prone to hazard events. Homes may be acquired, which will remove those structures from the floodplain and prevent future development on those sites.	
Impact on Critical Facilities/Lifelines:	Removing structures from the floodplain decreases the demand on utilities and emergency services including health and medical, law enforcement, and search and rescue.	
Impact on Capabilities:	Removing the risk from the immediate floodplain via acquisition of properties will free up resources for search and rescue and other emergency operations as needed.	
Climate Change Considerations:	Climate change is likely to increase the frequency and severity of severe rainfall, flash flooding, riverine flooding, and coastal flooding from sea level rise and storm surge events. Removing structures from the floodplain will reduce the response and recovery costs as a result of these events and decrease the loss of human life as a result of these events. Elevating structures will reduce the recovery costs as a result of these events.	
Mitigation Category	Structure and Infrastructure Project	
CRS Category	Property Protection	
Priority	High	
Alternatives:	Action	Evaluation
	No Action	-
	Levee around floodplain	Costly, not enough room





## 1.0. Borough of Ringwood

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	Deployable flood barriers	Requires deployment. Residents may not have adequate time to deploy, especially those who are elderly or disabled.
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Action 2025-RingwoodB-002. Critical Facilities in the Floodplain

Lead Agency:	Public Works; Facility Managers						
Supporting Agencies:	Flood Advisory Board						
Hazard(s) of Concern:	Flood						
Description of the Problem:	<p>The following critical facilities are municipally owned and located in the special flood hazard area:</p> <ul style="list-style-type: none"> <li>• Highway Bridge: 1600404</li> <li>• Highway Bridge: 1600406</li> <li>• Highway Bridge: 1600491</li> <li>• Highway Bridge: 1600496</li> <li>• James Drive Sewer Plant</li> <li>• Pump Station</li> <li>• Pump Station - Potable</li> <li>• Water Buffering Tank</li> <li>• Well 7</li> </ul>						
Description of the Solution:	<p>The Borough will conduct a feasibility assessment to determine what additional floodproofing measures are needed at the facilities listed above to protect each to the 500-year flood level. Options include:</p> <ul style="list-style-type: none"> <li>• Elevation of facility</li> <li>• Floodproofing of facility</li> <li>• Mobile flood barriers</li> </ul> <p>Once the most cost-effective option is identified, the Borough will carry out the option.</p>						
Estimated Cost:	TBD based on facility and floodproofing measure decided upon						
Potential Funding Sources:	FEMA HMGP and PDM, BRIC, USDA Community Facilities Grant Program, Emergency Management Performance Grants (EMPG) Program, Borough Budget						
Implementation Timeline:	Within 5 Years and then ongoing						
Goals Met:	1,2,5						
Benefits:	Ensures continuity of operations of the critical facilities listed above.						
Impact on Socially Vulnerable Populations:	Protection of critical facilities provides an opportunity for first responders and emergency managers to maintain critical services that socially vulnerable populations rely on.						
Impact on Future Development:	The risk of significant damage occurring to the structure will be reduced, which will allow critical operations to be maintained or only briefly interrupted in severe events. This provides continued support to both current and future development in the service area.						
Impact on Critical Facilities/Lifelines:	This action will protect the critical facilities listed above which maintains the critical services that each provides.						
Impact on Capabilities:	This action improves continuity of operations during a flood event, allows for a more rapid return to pre-disaster capabilities after a flood event, and faster deployment of post disaster capabilities.						
Climate Change Considerations:	This action addresses anticipated increases in flooding frequency and severity through protection to the 500-year (0.2-percent annual chance) flood level.						
Mitigation Category	Structure and Infrastructure Projects						
CRS Category	Emergency Services, Property Protection						
Priority	High						
Alternatives:	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="width: 20%;">Action</th> <th style="width: 20%;">Evaluation</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>		Action	Evaluation			
	Action	Evaluation					



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	No Action	-
	Relocate facility	Relocation is expensive and results in loss or delay of critical services in the immediate area
	Establish plans to enter into MOU with neighboring critical facilities to provide service during flood events	Reduction in response times and delay of critical services in the immediate area.



Action 2025-RingwoodB-003. Disaster Debris Management Plan

Lead Agency:	Public Works	
Supporting Agencies:	Passaic County Emergency Management	
Hazard(s) of Concern:	Dam Failure, Drought, Geological Hazards, Extreme Temperature, Flood, Severe Weather, Severe Winter Weather, Wildfire	
Description of the Problem:	Major disaster events can result in large amounts of debris that overwhelm normal trash collection operations. Depending on the amount generated, temporary staging areas for debris collection may be needed. The municipality does not have a disaster debris management plan in place. During a disaster that results in debris, a plan with outlined responsibilities is needed to adequately address post-disaster cleanup operations.	
Description of the Solution:	The municipality will develop a disaster debris management plan. This plan will establish procedures and guidelines for managing disaster debris in a coordinated, environmentally responsible, and cost-effective manner. The plan will identify responsibilities for execution of the plan. The plan will align with permitted temporary collection areas.	
Estimated Cost:	Staff time	
Potential Funding Sources:	Municipal budget	
Implementation Timeline:	Within 5 years	
Goals Met:	5	
Benefits:	The action will result in increased quicker and more efficient cleanup after disaster events.	
Impact on Socially Vulnerable Populations:	N/A	
Impact on Future Development:	N/A	
Impact on Critical Facilities/Lifelines:	N/A	
Impact on Capabilities:	The action will result in increased post disaster capabilities.	
Climate Change Considerations:	Climate change may result in an increase in the frequency and severity of weather-related disaster events. This action will increase the capabilities to respond to these events.	
Mitigation Category	Local Plans and Regulations	
CRS Category	Emergency Services	
Priority	High	
Alternatives:	Action	Evaluation
	No Action	-
	Rely on federal cleanup	These services may or may not be available
	Rely on state cleanup	These services may or may not be available



Action 2025-RingwoodB-004. Substantial Damage Management Plan

Lead Agency:	Floodplain Administrator
Supporting Agencies:	Public Works, Code Enforcement
Hazard(s) of Concern:	Dam Failure, Drought, Geological Hazards, Extreme Temperature, Flood, Severe Weather, Severe Winter Weather, Wildfire
Description of the Problem:	<p>Officials in NFIP-participating communities are responsible for regulating all development in SFHAs by issuing permits and enforcing local floodplain requirements, including Substantial Damage, for the repairs of damaged buildings. After any disaster event, they must:</p> <ul style="list-style-type: none"> <li>• Determine where the damage occurred within the community and if the damaged structures are in an SFHA.</li> <li>• Determine what to use for “market value” and cost to repair; uniformly applying regulations will protect against liability and promote equitable administration.</li> <li>• Determine if repairing plus improving the damaged structure equals or exceeds 50% of the structure’s pre-damage value.</li> <li>• Require permits for floodplain development.</li> </ul> <p>The municipality does not have a Substantial Damage Management Plan in place, nor do they have a formal process in place when conducting substantial damage determinations. The municipality is in need of a formal process and plan to provide a framework for conducting such inspections and determinations.</p>
Description of the Solution:	<p>The municipality will develop a Substantial Damage Management Plan, following the six step planning process in 2021 Developing a Substantial Damage Management Plan (<a href="https://crsresources.org/files/500/developing_subst_damage_mgmt_plan.pdf">https://crsresources.org/files/500/developing_subst_damage_mgmt_plan.pdf</a>). This plan will outline responsibilities for Substantial Damage determinations, determining market value, and permit approval processes following a disaster event.</p>
Estimated Cost:	Low
Potential Funding Sources:	Municipal budget
Implementation Timeline:	Within 5 years to develop the plan; ongoing to maintain and update the plan
Goals Met:	5
Benefits:	This plan will provide a process in making Substantial Damage Determinations and allow the municipality to make these determinations and meet NFIP requirements more quickly.
Impact on Socially Vulnerable Populations:	Substantially damaged structures are required to be rebuilt to be compliance with current codes. Socially vulnerable populations may not have the financial means to make these improvements. This action may allow for the identification of potential resources to address substantial damages to structures owned by socially vulnerable populations.
Impact on Future Development:	A Substantial Damage Management Plan would include all existing, current, and future development in the municipality.
Impact on Critical Facilities/Lifelines:	A Substantial Damage Management Plan would include all critical facilities and lifelines in the municipality.
Impact on Capabilities:	This action improves disaster recovery capabilities.
Climate Change Considerations:	Climate change is likely to increase the intensity and frequency of many climate related disaster events. This action provides additional planning for disaster recovery.
Mitigation Category	Local Plans and Regulations



CRS Category	Emergency Services, Preventative	
Priority	High	
Alternatives:	Action	Evaluation
	No Action	-
	Rely on state or federal resources following disaster events	Resources may not be available during major widespread events
	Establish MOUs with outside agencies to conduct Substantial Damage Determinations	A plan outlining responsibility is still necessary to prevent missing important requirements



Action 2025-RingwoodB-005. Repetitive Flooded Road Inventory

Lead Agency:	Public Works	
Supporting Agencies:	Department of Building and Construction	
Hazard(s) of Concern:	Flood	
Description of the Problem:	The Borough experiences flooding along roadways and is leading to bank erosion as well. The Borough does not have a list of problem roads/culverts to start making improvements with.	
Description of the Solution:	The Borough will conduct a flood study to determine what is causing flood issues along roadways and will document the problem areas that they wish to apply for funding for. The Borough will then upsize culvert capacity and determine what else needs to be done, including bank stabilization, to reduce and prevent flood events at each problem area.	
Estimated Cost:	TBD	
Potential Funding Sources:	HMGP, BRIC, FMA, Municipal Budget	
Implementation Timeline:	Within 5 Years; ongoing once established	
Goals Met:	2,5	
Benefits:	The Borough will have its problem areas documented and will work to improve conditions to reduce flood prone roadways.	
Impact on Socially Vulnerable Populations:	Some socially vulnerable populations may be dependent on roadways that are blocked or damaged by flood events.	
Impact on Future Development:	Future development can occur along areas that used to be problem areas.	
Impact on Critical Facilities/Lifelines:	Critical facilities and lifelines may not have to be concerned with flooding in or around critical facilities and this may improve emergency vehicle access.	
Impact on Capabilities:	This action would strengthen the Borough's ability to deal with flood.	
Climate Change Considerations:	Climate change is likely to increase the intensity and frequency of many climate related disaster events.	
Mitigation Category	Structure and Infrastructure Projects, Natural Systems Protection	
CRS Category	Natural Resource Protection, Structural Flood Control Projects	
Priority	High	
Alternatives:	Action	Evaluation
	No Action	-
	Purchase moveable flood barriers	Does not solve issue
	Upsize all culverts	Not necessary or cost effective



Action 2025-RingwoodB-006. Partnership with the Highlands

Lead Agency:	Highlands	
Supporting Agencies:	Public Works, Borough Administration	
Hazard(s) of Concern:	Flood	
Description of the Problem:	The Borough does not have an official partnership with the Highlands for testing inflows into the lake as well as testing the phosphorus and nitrogen levels present in the lake.	
Description of the Solution:	The Borough will work to develop a public or private partnership with the Highlands for all lakes, to test the inflows into the lake, as well as the phosphorus and nitrogen levels that may be present in the lake.	
Estimated Cost:	Staff Time	
Potential Funding Sources:	Municipal Budget	
Implementation Timeline:	Within 5 Years	
Goals Met:	8	
Benefits:	This action would improve the Borough's knowledge of lake inflow and nutrient levels.	
Impact on Socially Vulnerable Populations:	Some socially vulnerable populations may be more sensitive to nutrient levels that are present in and around lakes.	
Impact on Future Development:	N/A	
Impact on Critical Facilities/Lifelines:	N/A	
Impact on Capabilities:	This strengthens the Borough's ability to form partnerships.	
Climate Change Considerations:	Climate change is likely to increase the intensity and frequency of many climate related disaster events.	
Mitigation Category	Education and Awareness Programs	
CRS Category	Public Information, Preventative Measures	
Priority	High	
Alternatives:	Action	Evaluation
	No Action	-
	Purchase moveable flood barriers	Does not solve issue
	Upsize all culverts	Not necessary or cost effective





Action 2025-RingwoodB-007. Permeant Generators at Critical Facilities

Lead Agency:	Public Works	
Supporting Agencies:	Department of Building and Zoning	
Hazard(s) of Concern:	Flood	
Description of the Problem:	The Borough does not have a permanent redundant power source at the MJ Ryerson School/Shelter and the Peter Cooper School/Shelter and both of these facilities are necessary heating/cooling and emergency shelters for the Borough.	
Description of the Solution:	The Borough will conduct a generator study to determine the right sized generators that are needed at each facility, and will obtain funding to purchase and install the correct sized generators so that they may continue emergency operations as needed. Public Works will perform routine maintenance on the generators to ensure their longevity.	
Estimated Cost:	TBD after Study	
Potential Funding Sources:	HMGP, BRIC, USDA Community Facilities Grant Program, Emergency Management Performance Grants (EMPG) Program, Annual Budget	
Implementation Timeline:	Within 5 Years	
Goals Met:	1,5,6,7	
Benefits:	This action protects public health and safety and ensures continued operation of a critical facility and its essential functions during a power outage.	
Impact on Socially Vulnerable Populations:	Protection of critical facilities provides an opportunity for first responders, utility workers, and emergency managers to stage and deploy resources to vulnerable and hazard prone areas.	
Impact on Future Development:	This action results in protection of a critical facility that could support future development.	
Impact on Critical Facilities/Lifelines:	This action protects public health and safety and ensures continued operation of a critical facility and its essential functions during a power outage.	
Impact on Capabilities:	This action ensures continuity of operations to maintain capabilities.	
Climate Change Considerations:	Climate change is likely to increase severe weather events such as flooding, wind, and extreme temperatures that result in power failures. This action accounts for a likely increase in power failure events.	
Mitigation Category	Structure and Infrastructure Projects	
CRS Category	Emergency Services	
Priority	High	
Alternatives:	Action	Evaluation
	No Action	-
	Microgrid	Costly and difficult to implement.
	Solar panels and battery backup	Solar power is unlikely to be able to provide battery power for extended power failure events.



Action 2025-RingwoodB-008. Library Mitigation

Lead Agency:	Public Works	
Supporting Agencies:	Library Owner	
Hazard(s) of Concern:	Flood	
Description of the Problem:	The Borough Library consistently experiences flooding issues.	
Description of the Solution:	The Borough will conduct a feasibility study to identify mitigation alternatives to reduce flood impacts to the library and the Borough will then identify the most feasible action, apply for funding, and will implement the action.	
Estimated Cost:	TBD after study	
Potential Funding Sources:	HMGP, BRIC, USDA Community Facilities Grant Program, Annual Budget	
Implementation Timeline:	Within 5 Years	
Goals Met:	4,5	
Benefits:	The Library will be able to be used as an emergency shelter and will remain operable and in use.	
Impact on Socially Vulnerable Populations:	Some socially vulnerable populations may be dependent on the Library for heating/cooling during extreme temperature or storm events.	
Impact on Future Development:	The risk of significant damage occurring to the structure will be reduced, which will allow operations to adapt and resume in a more efficient manner.	
Impact on Critical Facilities/Lifelines:	The library will remain in use and can potentially be used as another emergency shelter.	
Impact on Capabilities:	Ensuring continuity of operations allows for a more rapid return to normalcy after a hazard event.	
Climate Change Considerations:	Consideration should be taken for increases in flooding frequency and severity.	
Mitigation Category	Structure and Infrastructure Projects	
CRS Category	Structural Flood Control Projects	
Priority	High	
Alternatives:	Action	Evaluation
	No Action	-
	Moveable flood barriers purchased	Does not prevent the issue
	Improve drainage system	May not be related to drainage



Action 2025-RingwoodB-009. Drainage Improvements

Lead Agency:	Public Works	
Supporting Agencies:	Department of Building and Zoning	
Hazard(s) of Concern:	Flood	
Description of the Problem:	<p>The Borough suffers from drainage issues along the following roads:</p> <ul style="list-style-type: none"> <li>• High Mountain Road Phase 1 and 2</li> <li>• Skyline Lake Drive</li> <li>• Brookcyde Avenue</li> </ul>	
Description of the Solution:	The Borough will increase the capacity of the drainage at the above locations that were identified in the Capital Plan for improvements.	
Estimated Cost:	TBD based on needed improvements	
Potential Funding Sources:	HMGP, BRIC, FMA, Municipal Budget	
Implementation Timeline:	Within 5 Years	
Goals Met:	2,5	
Benefits:	The Borough will have reduced drainage issues.	
Impact on Socially Vulnerable Populations:	Socially vulnerable populations can be disproportionately impacted by roadways with flooding issues.	
Impact on Future Development:	Future development may be encouraged after drainage issues make improvements.	
Impact on Critical Facilities/Lifelines:	Critical facilities located along the roadways with drainage issues will experience reduced flooding.	
Impact on Capabilities:	This action improves drainage in the Borough.	
Climate Change Considerations:	Consideration should be taken for increases in flooding frequency and severity.	
Mitigation Category	Structure and Infrastructure Projects	
CRS Category	Structural Flood Control Projects	
Priority	High	
Alternatives:	Action	Evaluation
	No Action	-
	Moveable flood barriers purchased	Does not prevent the issue
	Elevate Roadways	Not cost effective



Action 2025-RingwoodB-010. Dam Owner Partnership

Lead Agency:	Public Works	
Supporting Agencies:	Dam Owner and Managers	
Hazard(s) of Concern:	Dam Failure	
Description of the Problem:	There are multiple dams, which are critical infrastructures, located in the 1- and 0.2-percent flood hazard areas. The Borough also has multiple high-hazard potential dams located in the Borough, including: the Sally's Pond Dam, Monksville Dam, Furnace Road Dam, Skyline Lake #2 (Upper) Dam, Skyline Lake #1 (Lower) Dam, Erskine Upper Lake Dam, and Cupsaw Lake Dam. These structures have the potential to impact those living nearby.	
Description of the Solution:	The Borough will work with the owners and managers of the dams to ensure inspections and safety procedures are up to date. EAPs will be collected by the Borough OEM and shared with the County OEM.	
Estimated Cost:	Low	
Potential Funding Sources:	Municipal Budget	
Implementation Timeline:	Within 5 Years	
Goals Met:	1,2,8,9	
Benefits:	This action will improve the safety and security of those who live within the dam inundation areas of the dams and increase the resilience of responding agencies.	
Impact on Socially Vulnerable Populations:	The action will result in better preparedness within the Special Flood Hazard Area and inundation areas where significant risk to socially vulnerable populations exists.	
Impact on Future Development:	N/A	
Impact on Critical Facilities/Lifelines:	Dams are considered a critical facility. This action will create an understanding of the safety procedures in place for each identified dam.	
Impact on Capabilities:	This action will improve planning and response capabilities through the understanding of responsibilities and procedures.	
Climate Change Considerations:	Climate change may result in an increase in the frequency and severity of weather-related disaster events, which may contribute to the likelihood of a dam failure event. This action will increase the capabilities to respond to these events.	
Mitigation Category	Local Plans and Regulations	
CRS Category	Preventative Measures	
Priority	High	
Alternatives:	Action	Evaluation
	No Action	-
	Utilize information from NJDEP	Owners may not be required to submit a safety plan to the State
	Utilize information from the National Inventory of Dams	Not all dams are listed on the inventory