

Town of Knox

This section presents the jurisdictional annex for the Town of Knox for the 2024 Albany County Hazard Mitigation Plan (HMP). It includes information and guidance intended to assist public and private entities in reducing losses from future natural hazard events. This jurisdictional annex focuses on actions that can be implemented prior to a natural hazard event to reduce adverse impacts to people and property; it is not intended to serve as guidance for what to do when a natural hazard event occurs or how to recover following a natural hazard event. This jurisdictional annex provides an overview of the community and its critical facilities, evaluates the community's vulnerability to various natural hazards, assesses the community's existing capability to mitigate natural hazards, and identifies actions that could be implemented to mitigate natural hazard risks and, ultimately, reduce damages to people and property resulting from natural hazard events.

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1 CONTACT INFORMATION

The primary contacts for Albany County regarding this Jurisdictional Annex are identified as follows:

- Primary: Russell Pokorny, Town Supervisor, supervisor@knoxny.org, (518) 872-2551 Ext. 8
- Alternate: Matthew Schanz, (518) 872-2551 Ext. 6

Town of Knox Website: Town of Knox, NY - Home (knoxny.org)

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2 COMMUNITY SNAPSHOT

2.1 Demographics

The 2020 Census estimated that 2,737 people live in the Town of Knox. The Town of Knox's population has increased by 1.7% since the 2010 Census (2,692). The median age in the Town of Knox is 46.6 years, and 15.7% of the population is over the age of 65. The median household income in the Town of Knox is \$105,188.

2.2 Location & Land Characteristics

The Town of Knox is located in the Helderberg Mountains in the northwestern part of Albany County. The western town line is the border of Schoharie County, and the northern town boundary is the border of Schenectady County. The Town of Knox covers approximately 41.94 square miles. The properties within the Town of Knox have a total assessed value of approximately \$137,058,565 which is distributed across a variety of property classes.

Major transportation corridors in the Town of Knox are New York State Route 156 (Berne-Altamont Road), which is a state highway in Albany County, and County Road 252 (Knox Cave Road). Key water features within the Town of Knox include Beaverdam Creek and Thompson Lake, in the southeastern part of the Town.

2.3 Governing Body

A town supervisor and four board members govern the Town of Knox.

2.4 Recent and Anticipated Future Development

According to a review of 239 Referrals since the last County HMP (2018), several new developments have been approved or proposed within the Town. The proposals that the Town received are summarized in Table 2-1 below. Some of the proposals for the Town may be located in the 0.1% or 0.2% annual chance flood event area, but this was not specified in the proposal. Additionally, building permits that have been issued for the Town between 2018 to 2022 are summarized in Table 2-2 below, based on data from the Capital District Regional Planning Commission (CDRPC). These developments may affect the Town's vulnerability to the hazards identified in this HMP.

Table 2-1. Developments from 2018 to 2023

| Project Name | Project Location | Consideration | Date |
|--|--|---|------------------------------------|
| Town of Knox Rezoning | 16 parcels located near the Rt. 156 and Rt. 157 intersection | Proposed rezoning of 16 lots totaling 190.59 acres to a business district that are currently zoned for agricultural and residential uses. | 4/19/2018 (Not enacted) |
| Re-Zone of 11 parcels to Multi-Use Recreational District | | To rezone 11 privately-owned tax parcels (approximately 80 acres) currently zoned as Residential (49 acres) and Agriculture (31 acres) parcels into a Multi-Use Recreational District (MRD) as detailed in the enclosed cover letter and attachments. | 2/25/2019 (Not enacted) |
| Hog Farming Law | N/A | Amendment to zoning law regarding the definition of "Hog Farming" | 1/16/2020 |
| Home Occupation Law | N/A | Amendment to zoning law regarding definition of "Home Occupation" | 1/16/2020 |
| Rezoning of 11 parcels to Multi-Use-Recreational | Intersection surrounding State Routes 156& 157 | An amendment to zoning code to rezone 11 parcels that are currently zoned Residential or Agriculture, to Multi-Use-Recreational. | 4/16/2020 |
| Construction of Large-Scale Solar Project | 1688 Thompson Lake Road, E.Berne (Route 157) | Site plan review for construction of a 4.4 megawatt ground mounted solar photovoltaic on 37.9 acres. | 1/21/2021 (Application terminated) |
| Construction of Large Scale Solar Project | 1688 Thompson Lake Road, E.Berne (Route 157) | Site plan review for construction of a 4.4 megawatt ground mounted solar photovoltaic on 37.9 acres. | 2/18/2021 (Application terminated) |
| Knox II Solar | 1953 Thompsons Lake Road, E. Berne | Site plan review for installation of 5000 KW (5 megawatt) AC ground-mounted solar photovoltaic farm. | 3/17/2022 |
| Knox Solar | 1688 Thompsons lake Road (Route 157) | Site plan review for the installation of 4.4 MW solar photovoltaic (PV) facility in a ground-mounted single axis tracking system that will consist of approximately 8,008 solar PV modules and 20 Sungrow SG250HX inverters. A new access road to the facility will be provided from Thompson Lake Road along with landscape screening around the perimeter of the project. | 6/15/2023 (Application denied) |
| Lot Line Adjustment - Carrie Kryzak-Johnson | 26 Lovejoy Road | Lot line adjustment of three lots into 4.5 acres and 7.5 acres after the dividing the middle parcel between the outer lots. | 10/19/2023 |

| Project Name | Project Location | Consideration | Date |
|---|-------------------|--|------------|
| Lot Line Adjustment - Matthew Monroe | 949 Township Road | Lot line adjustment to add an additional acre from the adjacent parcel increasing the total acreage to 1.58 acres. | 10/19/2023 |
| One Year Solar Moratorium on Solar Projects | Town of Knox | Adoption of local law to implement one year moratorium on solar projects in the Town of Knox. The moratorium was approved during the Town Board meeting in April 2023. | 10/19/2023 |

Table 2-2. Building Permit Issuance (2018 to 2022)

| Year | Building Type | Units |
|---------------|---------------|-----------|
| 2018 | 1 | 6 |
| 2019 | 1 | 5 |
| 2020 | 1 | 2 |
| 2021 | 1 | 1 |
| 2022 | 1 | 3 |
| Total: | | 17 |

Data Source: Capital District Regional Planning Commission (<https://cdrpc.org/data/housing>)

3 CAPABILITIES ASSESSMENT

3.1 Planning Mechanisms and Capabilities

The Town of Knox identified the following planning mechanisms and capabilities that can support the Town in hazard mitigation efforts. These capabilities can be used to support the mitigation strategy in several ways. For example, administrative capabilities can assist in implementing the mitigation actions as identified in the mitigation strategy. Existing building codes and land use regulations provide a foundation for mitigation planning and provide guidelines for infrastructure repair, new developments, and other actions. Educational programs may be developed further in order to more fully incorporate hazard mitigation. Table 3-1 elaborates on existing building codes, land use and development ordinances/regulations, and many other capabilities which can support hazard mitigation.

Table 3-1. Planning Mechanisms & Capabilities

| Planning Mechanism | In Place? (Yes/No) | Notes (Does the plan address hazards? Can the capability be used to implement mitigation actions? When was it last updated?) |
|--|-----------------------|---|
| Administration | | |
| Maintenance Programs | Yes | DPW preventative measures |
| Mitigation Planning Committee | No | |
| Mutual Aid or Shared Services Agreements | Yes | With Town of Guilderland, Town of New Scotland, Village of Voorheesville and Town of Berne |
| Planning Board | Yes | |
| Zoning Board | Yes | |
| Other | Yes | Agricultural Advisory Committee, Conservation Advisory Council |
| Development Approvals | | |
| Building Code | Yes | For new buildings |
| Building Code Effectiveness Grading Schedule (BCEGS) Evaluation | No | |

| Planning Mechanism | In Place? (Yes/No) | Notes (Does the plan address hazards? Can the capability be used to implement mitigation actions? When was it last updated?) |
|--|-----------------------|---|
| Fire Department ISO Rating | Yes | 9 |
| Site Plan Review Requirements | Yes | |
| Other | | |
| Funding Resources | | |
| Authority to Levy Taxes | Yes | As part of the general budget |
| Capital Improvement Project Funds | Yes | Used for the expansion of the Town Hall to add warming shelter |
| Federal Funding Programs (i.e., USDA, FEMA, others) | Yes | FEMA funds have been used to repair infrastructure |
| General Obligation Bonds and/or Special Tax Bonds | Yes | |
| Impact Fees for New Development | Yes | Site Plan review can require fees during permitting process |
| State Funding Programs (i.e., NYSEFC, NYSOCR, NYSDEC, others) | Yes | NYSERDA funding application is in progress (Clean Energy Communities program) |
| Utility Fees (i.e., water, sewer, stormwater, gas, electric) | Yes | No storm water, sewer or utility fees except for streetlights in Lighting District |
| Other | | Community Development Block Grant |
| Land Use Regulations | | |
| Density Controls | Yes | Zoning Ordinance, Subdivision Regulations |
| Flood Insurance Rate Maps | Yes | |
| NFIP Participant / Floodplain Ordinance | Yes | Knox has very little floodplain area. See also "Floodplain Administrator" row below (under "Staff Positions") |
| Hillside Development Regulations | No | Slope is considered in site plan review |
| Open Space Preservation | Yes | |
| Stormwater Management Regulations | Yes | |

| Planning Mechanism | In Place? (Yes/No) | Notes (Does the plan address hazards? Can the capability be used to implement mitigation actions? When was it last updated?) |
|---|-----------------------|---|
| Streambank Setback Regulations | No | |
| Subdivision Regulations | Yes | Subdivision ordinance |
| Zoning Ordinance | Yes | |
| Other | Yes | Transportation Plan, Flood Damage Prevention Law |
| Natural Resources | | |
| Forest/Vegetation Management | No | |
| Stream Corridor Management | No | |
| Stream Dumping Regulations | No | Local law (1967) prohibits discharges |
| Urban Forestry and Landscape Management | No | |
| Watershed Management | No | |
| Wetland Regulations | No | |
| Other | | |
| Plans | | |
| Capital Improvement Plan | No | |
| Comprehensive Emergency Management Plan | Yes | 2016 |
| Comprehensive Plan | Yes | 1994 |
| Continuity of Operations Plan | Yes | Ongoing |
| Economic Development Plan | No | |
| Other | | |
| Programs/Organizations | | |
| Climate Smart Community | Yes | Registered |
| Local Emergency Preparedness/Disaster Response Organizations | Yes | |

| Planning Mechanism | In Place? (Yes/No) | Notes (Does the plan address hazards? Can the capability be used to implement mitigation actions? When was it last updated?) |
|--|---------------------------|--|
| Local Environmental Protection Organizations | Yes | Mohawk Hudson Land Conservancy protects some sensitive areas |
| National Weather Service StormReady Certification | No | |
| Outreach Programs | | |
| Partnerships with private entities addressing mitigation or disaster response | Yes | Red Cross and Rock Road Chapel partner with Town of Knox to provide emergency shelter facilities |
| School Programs or Adult Educational Programs | No | Albany Co. Sheriff's Dept. preparedness brochure for "go kits", fire safety and recruitment programs, Altamont Library annual informational mailing, Town of Knox semi-annual Newsletter |
| Other | | |
| Staff Positions | | |
| Civil Engineer | No | |
| Code Enforcement Officer | Yes | Dan Sherman and Assistant Richard Loucks |
| Emergency Manager | Yes | Designated Town Board Member (Ken Saddlemire) |
| Floodplain Administrator | Yes | Chief Building Official (Dan Sherman, also president of the fire company) coordinates with fire company |
| Planner/GIS Coordinator | Yes | Community Planner (Planning Board and contractual professional services) and GIS Coordinator (designated Planning Board Member) |
| Other | | Chief Building Official |
| Technical Abilities | | |
| Grant Writing | No | Amateur volunteer sometimes available |
| Hazard Information Centers | Yes | Knox VFD receives Rip & Run fax information from Sheriff's Department |
| Hazard Warning Systems | Yes | Albany County is developing reverse 911 emergency system |
| Other | No | (Hazus Analysis is needed) |

The Town's HMP update will be incorporated into and referenced by future updates of the plans, policies, ordinances, programs, studies, and reports listed in Table 3-1. In particular, the Town should review Table 3-1 when completing updates to the Comprehensive Plan and amendments to the Zoning Code. As part of this review, the Town may strategize opportunities for building the hazard mitigation mechanisms and capabilities currently marked "No" in the table (where feasible) by designating lead agencies in charge of closing such gaps, connecting with partners and technical support resources, establishing a timeline and next steps, estimating costs, and applying for grant funding when necessary. In an update to the Comprehensive Plan, this process may result in the development and inclusion of detailed proposed action items and implementation frameworks that address gaps in hazard mitigation mechanisms and capabilities. In an amendment to the Zoning Code, this process may result in the modification of existing laws or the drafting and adoption of new laws to address gaps in hazard mitigation mechanisms and capabilities.

Furthermore, the Town would like to expand and improve the capabilities listed in Table 3-1 in the following ways:

- Town of Knox newsletter could include hazard mitigation/emergency preparedness information in semi-annual publications.
- Hold periodic meetings with emergency service providers and volunteers to update contact information, share ideas to reduce risk, and review assets and procedures.
- Need resources to contract with professional experts to assist with studies, evaluations, recommendations, planning efforts.
- Need to identify funding to contract with professional experts to review and update the Comprehensive Plan.
- Conservation Advisory Council efforts to identify ecologically sensitive/important areas to protect.
- Advertise for a grants manager who would research funding opportunities, prepare grant applications and manage requirements.
- Applications are in progress for Albany County Parks & Recreation funding and federal grants to control erosion and to improve drainage infrastructure for town buildings
- Committee to develop Farmland Protection Plan will address economic development opportunities and issues and make recommendations.
- Contract with professional experts for planning services.
- Consider contracting with a civil engineer for demolition projects, other challenges that arise.
- Expertise and funding are needed to prepare an Open Space Inventory, to compile a map library of natural resources and environmentally sensitive areas, and to develop a cross index by tax map section-block-lot identifier of records to improve access to information about properties for informed planning and permitting decision making.
- Albany County is our biggest resource for assistance. We have county Department of Public Works, mutual aid agreements for EMS, fire and hazmat. A

CAD dispatch through the county lets us identify special needs or hazards so the information is available to responding agencies.

- FEMA and SEMA are available for any incident or event with revenue recovery.
- Berne Knox Westerlo school is a potential resource that could be explored.
- Building and Zoning Administrator/Code Enforcement Officer needs more support:
 - Increases in neighbor disputes have increased compliance enforcement demands. Increased staffing is needed.
 - Building Inspector/Building and Zoning Administrator/Code Enforcement Officer needs more responsive, hands-on legal assistance.
 - Hold monthly Zoom meetings with attorney(s) and representatives from Planning Board, Zoning Board of Appeals, Town Board, other involved parties to review issues that arise.
 - Definition/communication of and support for court procedures is needed.
 - Educate the public about the value and importance of code enforcement.

Additional strategies to expand and improve hazard mitigation capabilities are detailed in Section 10 of the main body of the HMP.

3.2 Integration of Planning Efforts

The Town of Knox understands the importance of considering an integrated approach when developing municipal plans, policies, programs, and regulations. The Town intends to reference the 2024 Albany County HMP as part of the process for future updates to the plans, policies, programs, and regulations listed in Table 3-1, above, and for creating new regulations as applicable. This may include adding hazard mitigation as an agenda item at Town Board meetings where local laws are being developed or updated, including hazard mitigation considerations in any templates used to make new laws, adopting an ordinance that all new local laws need to consider hazard mitigation if applicable, or simply making local officials aware of the need to consider hazard mitigation in any plan updates. Additionally, the Town of Knox may use the local laws assessment (included in Section 4 of the main body of the HMP) to reference hazard mitigation related regulations that other jurisdictions in the County have adopted and consider implementing similar regulations if desired.

All of these actions will help expand and improve upon these existing capabilities so that they reduce risk and better support hazard mitigation.

4 HAZARD IDENTIFICATION AND RISK ASSESSMENT

4.1 Profiled Hazards

In this HMP Update, the County reviewed multiple natural hazards, and determined to profile five natural hazards: flooding, severe storm, drought, extreme temperatures, and landslide. Descriptions of each of these hazards are included in Section 6 of the main body of the HMP.

The Town of Knox also opted to add the following hazard to their annex. Town representatives gave the following reasons for this inclusion:

- Wildfire – Added due to an increase in stands of trees dying in rural areas, which in turn increases the fuel load for wildfires. While the Town has not experienced serious fires yet, wildfire may become a hazard as drought and extreme temperatures increase in frequency with climate change and fuel loads build up in the rural areas.

The Town also included “brushfire” under “drought” to emphasize their interrelatedness and the importance to the Town of mitigating brushfires.

Aside from the exceptions listed above, the Town of Knox profiled the same hazards as Albany County. The hazard analysis criteria used to evaluate the Town’s vulnerability to each natural hazard are summarized in Table 4-1, and the results are presented in

Table 4-2. All rankings were completed subjectively, with the guidelines detailed in Table 4-1.

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Table 4-1. Hazard Analysis Criteria

| Score | Impact (Damage to property, crops, people) | Frequency* | Extent | Level of Preparedness | Total Score | Overall Vulnerability |
|-------|--|------------|--|-----------------------|-------------|-----------------------|
| 1 | Minor | Rare | One or two problem areas within the jurisdiction | Well Prepared | 4 to 5 | Low |
| 2 | Moderate | Infrequent | A significant portion of the jurisdiction | Moderately Prepared | 6 to 8 | Moderate |
| 3 | Major | Regular | The entire jurisdiction | Not Prepared | 9 to 12 | High |

*Frequency is defined roughly as follows:

- Rare – Every 15 years or less
- Infrequent: Less than once a year but greater than once every 15 years
- Regular: Approximately yearly or multiple times a year

Table 4-2. Hazard Vulnerability by Event

| Hazard Event | Impact (Damage to property, crops, people, etc.) | Frequency of Occurrence | Extent of Impacts | Level of Preparedness | Overall Vulnerability | Jurisdiction Rank | Notes (Anticipated Future Changes) |
|---|---|----------------------------|----------------------|--------------------------|--------------------------|----------------------|--|
| Flooding (Coastal Flooding, Riverine Flooding, Ice Jam) | 2 | 3 | 3 | 2 | 8 – moderate | 1 | The Town's biggest issue is being islanded during a flood |
| Drought & Brushfires | 2 | 2 | 3 | 3 | 9 – high | 2 | Private wells dry out, ag impacts, brush fires are difficult to manage, extinguish |
| Severe Storm (Hail, Ice Storm, Lightning, Strong Wind, Winter Weather) | 2 | 3 | 3 | 2 | 10 – high | 4 | Heavy ice & snow loads collapse roofs |
| Extreme Temperatures (Cold Wave, Heat Wave) | 2 | 2 | 3 | 2 | 9 – high | 3 | Agricultural impacts |
| Landslide | 1 | 1 | 1 | 1 | 4 – low | 5 | Experience some landslides along Town roads |
| Wildfire | 1 | 1 | 1 | 1 | 4 - low | 6 | Expect hazard to increase with increasing fuel loads and frequency of drought |

4.2 Hazard Event History

A complete history of natural hazard events within the County – based on NOAA’s Severe Storm Database – is included in Section 6 of the main body of the HMP. The following is a subset of events that occurred specifically within the Town. These records informed the development of mitigation actions by demonstrating which hazards have historically had the greatest impact on the Town.

Table 4-3. Hazard Event Records, 2018-2023 (Confirmation not available from Town records)

| Event Type | Date | Magnitude | Estimated Property Damage | Estimated Crop Damage |
|-------------------|-----------|-----------|---------------------------|-----------------------|
| Thunderstorm/Wind | 8/8/2019 | 50 | 0 | 0 |
| Thunderstorm/Wind | 8/17/2019 | 50 | 0 | 0 |
| Thunderstorm/Wind | 7/2/2020 | 50 | 0 | 0 |
| Thunderstorm/Wind | 7/24/2022 | 50 | 0 | 0 |
| Thunderstorm/Wind | 9/13/2022 | 45 | 0 | \$1,000 |
| Total | | | 0 | \$1,000 |

Note: The table above lists only the hazard events that were recorded as occurring specifically within the Town. For records of County-wide hazard events, see the Albany County Annex. Units for magnitude are expressed as the following: Thunderstorm Wind: knots.

4.3 Floodplain Statistics

Key water features in the Town are described in Section 2.2 of this annex. FEMA provides flood insurance rate maps for the municipality and GIS data on the spatial location of floodplains. The 1% annual chance (100-year) flood event area generally corresponds with areas that are at high risk of flooding, and the 0.2% annual chance (500-year) flood event area generally corresponds with areas that are at moderate risk of flooding. Out of the 42 square miles in the Town, approximately 1.67% are located within the 1% annual chance flood event area and approximately 1.67% are located within 0.2% annual chance flood event area (inclusive of the 1% flood event area). The estimated number and structure value of parcels in the municipality that intersect mapped floodplains are summarized in Table 4-5. There are 159 parcels in the Town located within the 1% annual chance flood event area, with an estimated total structure value of \$8,886,569. Inclusive of these parcels in the 1% annual chance flood event area, there are 159 parcels in the Town located within the 0.2% annual chance flood event area, with an estimated total structure value of \$8,886,569.

Table 4-4. Summary of Areas in Floodplains*

| Total Area (square miles) | Percent of Total Area in 1% Annual Chance Floodplain | Percent of Total Area in 0.2% Annual Chance Floodplain |
|---------------------------|--|--|
| 42 | 1.67% | 1.67% |

* Calculated areas and percentages are informational estimates only and are not to be used for official purposes. The 0.2% annual chance floodplain in this table includes the area in the 1% annual chance floodplain.

Table 4-5. Estimated Number and Structure Value of Parcels within Mapped Floodplains

| Property Class | Number of Parcels in 1% Annual Chance Floodplain | Approx. Structure Value* in 1% Annual Chance Floodplain | Number of Parcels in 0.2% Annual Chance Floodplain** | Approx. Structure Value* in 0.2% Annual Chance Floodplain** |
|-------------------------------------|--|---|--|---|
| Unclassified | 0 | \$ - | 0 | \$ - |
| Agricultural | 12 | \$ 492,290 | 12 | \$ 492,290 |
| Residential | 92 | \$ 7,007,522 | 92 | \$ 7,007,522 |
| Vacant | 47 | \$ 147,172 | 47 | \$ 147,172 |
| Commercial | 4 | \$ 776,500 | 4 | \$ 776,500 |
| Recreation and Entertainment | 1 | \$ 83,800 | 1 | \$ 83,800 |
| Community Services | 0 | \$ - | 0 | \$ - |
| Industrial | 0 | \$ - | 0 | \$ - |
| Public Services | 1 | \$ 379,285 | 1 | \$ 379,285 |
| Parks and Open Space | 2 | \$ - | 2 | \$ - |
| Total | 159 | \$ 8,886,569 | 159 | \$ 8,886,569 |

*Structure Value for each parcel was estimated by subtracting Land Assessed Value from Total Assessed Value. If the entire parcel or a subset of the parcel was contained within the floodplain, the structure on that parcel was included regardless of the structure's location on the parcel.

** The 0.2% Annual Chance Floodplain in this table includes the area in the 1% Annual Chance Floodplain.

4.4 National Flood Insurance Program

Long-term mitigation of potential flood impacts can be best achieved through comprehensive floodplain management regulations and enforcement at a local level. The National Flood Insurance Program (NFIP), regulated by FEMA, aims to reduce the impact of flooding on private and public structures by providing affordable insurance for property owners. The program encourages local jurisdictions to adopt and enforce floodplain management regulations in order to mitigate the potential effects of flooding on new and existing infrastructure (<https://www.fema.gov/flood-insurance>).

Communities that participate in the NFIP adopt floodplain ordinances. If an insured structure incurs damage costs that are over 50% of its market value, the owner must comply with the local floodplain regulations when repairing or rebuilding the structure. A structure could be rebuilt at a higher elevation, or it could be acquired and demolished by the municipality or relocated outside of the floodplain. Insured structures that are located within floodplains identified on FEMA's Flood Insurance Rate Maps (FIRMs) may receive payments for structure and content losses if impacted by a flood event.

The NFIP and other flood mitigation actions are important for the protection of public and private property and public safety. Flood mitigation is valuable to communities because it:

1. Creates safer environments by reducing loss of life and decreasing property damage.
2. Allows individuals to minimize post-flood disaster disruptions and to recover quicker (homes built to NFIP standards generally experience less damage from flood events, and when damage does occur, the flood insurance program protects the homeowner's investment); and
3. Lessens the financial impacts on individuals, communities, and other involved parties (<https://www.fema.gov/flood-insurance>).

The Town of Knox currently participates in the NFIP (community ID 360011A), and its current FIRM(s) became effective on 03/16/15. FIRMs are available via FEMA's Flood Map Service Center (<https://msc.fema.gov/portal/home>). Digital FIRM data is also available for Albany County via FEMA's National Flood Hazard Layer Viewer, which was referenced during the development of this annex. Information from this digital FIRM data was incorporated into this Hazard Mitigation Plan where appropriate (for example, when identifying which critical facilities are located in the floodplain).

The Town's local law governing floodplain development and NFIP compliance is located in Local Law 2015-1: Flood Damage Prevention Law. The Town will continue to comply with the NFIP by enforcing floodplain management requirements and regulating new development in special flood hazard areas, among other required duties. Staff capabilities to implement the NFIP and local floodplain regulations are listed in Table 3-1 of this annex.

According to NFIP claims data provided by FEMA, there are 0 repetitive loss properties in the Town of Knox. Repetitive loss properties are properties that have had at least two paid flood losses of more than \$1,000 each in any 10-year period since 1978.

4.5 Considerations for Future Hazards

The Town of Knox also considered future changes in hazards due to climate change, population changes, land use, and other factors. They identified the following concerns:

- Stalled weather patterns with sustained rainfall – How to mitigate?
 - Compromised private septic systems, especially in hamlet and in areas with older developments of dense housing.
 - Karst geology carries unfiltered water with contaminants underground.
 - Farm fields need improved drainage systems.
- Increased housing development pressure with relatively inexpensive land, relatively plentiful water, relatively moderate climate conditions:
 - Thirty-year-old Comprehensive Plan needs to be reviewed and updated.
 - Eliminate or revise One Cut Rule or impose site plan review.
 - Zoning Ordinance needs to be reviewed and updated.
 - Develop and adopt a Farmland Protection Plan.
 - Map all natural and cultural resources that need to be protected.
- Increasing threat of drought and development pressure increases burdens on private water wells.
- Increasing number of extreme heat days: some homes do not have air conditioning.
- Increasing threats of tick and mosquito borne diseases
- Damage to structures from heavy ice and snowstorms.

These concerns were taken into consideration when developing the mitigation strategy. The effects of climate change and other factors on future hazard events in Albany County are covered in more detail in Section 6 of the main body of the HMP.

5 ASSETS AND VULNERABILITIES

5.1 Critical Facilities

FEMA defines a critical facility as one that provides services and functions essential to a community, especially during and after a disaster. Critical facilities should remain accessible and functional before, during and after disasters. Additionally, critical facilities include those that requires a special emergency response in the event of hazardous incidents, such as buildings that store hazardous materials. Examples of critical facilities include community lifelines, such as fire departments, EMS services, police stations, water and wastewater services, medical facilities, highway garages, and hazardous materials. They also include facilities such as Town halls, schools, and senior centers. In the hazard mitigation planning process, each jurisdiction ultimately decided which facilities they consider to be critical facilities for their community.

Table 5-1 denotes the name, type, and location of the critical facilities within the Town of Knox, and any particular vulnerabilities of note. More information about hazard vulnerability, including the vulnerability of community assets to natural hazard events, is included in Section 8 of the main body of the HMP. Additional vulnerabilities by location are assessed in the HAZUS analysis, included in the appendices of the HMP.

Table 5-1. Critical Facilities*

[Table redacted due to sensitive content]

Per 2022 NYS Hazard Mitigation Planning Standards, jurisdictions must identify all of their critical facilities, determine the facilities' exposure to a 1% and 0.2% annual chance flood event, and document if the facilities are protected to a 0.2% annual chance flood event or previous worst case flood event (whichever is greater). For facilities that do not meet this level of protection, the jurisdiction must either include an action to meet or exceed this criterion or explain why it is not feasible to do so.

As indicated in Table 5-1, it is unknown whether several of the Town's critical facilities are protected to a 0.2% annual chance (500-year) flood event or previous worst case flood event (whichever is greater). The Town has included an action in Section 7.2:

New Mitigation Actions related to these critical facilities. Section 9 of the main body of the HMP provides additional detail on how the County and local municipalities may assess critical facilities' level of protection to the 1% and 0.2% annual chance flood event.

5.2 High Hazard Potential Dams

According to the NYSDEC Division of Water Bureau and Flood Protection and Dam Safety, there are four hazard classifications of dams in New York State. A High Hazard Potential Dam is a dam located in an area where dam failure may cause loss of human life; serious damage to homes, industrial, or commercial buildings; essential public utilities; main highways or railroads; and will cause extensive economic loss.

The Town of Knox has 1 high hazard potential dam located in the municipality: Altamont Main Reservoir Dam. Information on this dam is included in Table 5-2. High Hazard Potential Dams can be an asset as well as pose risks to the jurisdiction and neighboring jurisdictions. Additional information about high hazard potential dams and their impacts is included in Sections 6 and 7 of the main body of the HMP.

Table 5-2. High Hazard Potential Dams in the Town of Knox

| Dam Name | Federal ID | Owner | Year Completed | Construction Type | Primary Purpose | Date of Last EAP Revision |
|-----------------------------|------------|---------------------|----------------|-------------------|---|---------------------------|
| Altamont Main Reservoir Dam | NY00126 | VILLAGE OF ALTAMONT | 1898 | Earth | Water Supply is decommissioned but it still holds some water. | 8/28/2020 |

Source: National Inventory of Dams (U.S. Army Corps of Engineers, 2023), NYSDEC Foil Request (NYS Department of Environmental Conservation, 2024), Town of Knox input

5.3 Additional Jurisdiction/Public Identified Vulnerabilities

In addition to critical facilities, it is important to take a holistic approach to identifying assets in the jurisdiction and how they may be vulnerable to the hazards identified in the HMP. Examples of other assets considered include:

- People (residents, workers, visiting populations, and socially vulnerable populations like seniors, individuals with disabilities, lower-income individuals, etc.)
- Other structures (community centers, historic places, planned capital improvement)
- Economic assets (major employers, primary economic sectors, key infrastructure like telecommunications networks)
- Natural, historic and cultural resources (areas of conservation, beaches, parks, critical habitats)
- Critical facilities and infrastructure (hospitals, law enforcement, water, power)
- Community activities (major local events such as festivals or economic events like farming or fishing)

Aside from critical facilities listed in Table 5-1, the Town of Knox has identified the following additional assets for consideration in hazard mitigation planning and included the following notes:

Table 5-3. Additional Assets

[Table redacted due to sensitive content]

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6 SUMMARY OF HAZARD IMPACTS AND VULNERABILITIES

6.1 Flood

The Town of Knox has ranked their overall vulnerability to flood events as moderate, as indicated in Table 4-2. According to Town representatives, flood events occur regularly in the jurisdiction and affect one or two problem areas in the Town, causing moderate damage. The Town feels they are moderately prepared for flood events.

Information on flood event records (Section 4.2 of this annex), high hazard potential dams (Section 5.2), floodplain statistics (Section 4.3), and participation in the NFIP (Section 4.4) are described above, illustrating the impact of flooding on critical facilities and other structures. The Town is particularly concerned about the impacts of flooding on:

- Hilltown Senior Center, 1656 Helderberg Trail in Berne
- Day care center at the Knox Reformed Church

Future vulnerability to flood events is determined by many factors, such as climate change, land use, and population changes, as well as the implementation of mitigation and adaptation strategies. Climate change is expected to increase the Town's future vulnerability to flood events. These trends are further described in Section 4.1 of this annex and in Section 6 of the main body of the HMP.

6.2 Severe Storm

The Town of Knox has ranked their overall vulnerability to severe storm events as high, as indicated in Table 4-2. According to Town representatives, severe storms occur regularly in the jurisdiction and affect the entire jurisdiction, causing moderate damage. The Town feels they are moderately prepared for severe storm events.

Records of severe storm events are described in Section 4.2 of this annex. Impacts to the Town from severe storm events include fallen trees from severe winds, which can damage overhead utility lines, resulting in power outages. These events are likely to result in damages to private and public infrastructure and property. In addition, during severe winter storm events, roadway safety is a primary concern and impacts the safety of residents and operation of critical facilities. Damages to the Town's critical infrastructure or primary transportation routes would be particularly impactful to residents.

Future vulnerability to severe storm events is determined by many factors, such as climate change, land use, and population changes, as well as the implementation of mitigation and adaptation strategies. Climate change is expected to change the types of severe storm events that the Town is vulnerable to, likely making the Town more vulnerable to severe thunderstorm, windstorm, and hail events and less vulnerable to heavy snow, ice storms, winter storms and winter weather. These trends are further described in Section 4.1 of this annex and in Section 6 of the main body of the HMP.

6.3 Drought

The Town of Knox has ranked their overall vulnerability to drought events as high, as indicated in Table 4-2. According to Town representatives, drought events now occur more frequently in the jurisdiction and affect a significant portion of the jurisdiction, causing major damage. The Town feels they are moderately prepared for drought events.

All residents of the Town of Knox rely upon private wells for their water supplies. Residents may be especially susceptible to low water yields during a drought, as well as water quality issues. Additionally, agricultural operators experience significant impacts from drought, especially if they rely on natural rain events, rainwater collection, and healthy soils for crop maintenance and livestock care. Certain critical facilities (e.g. fire houses) could be susceptible to impacts during a drought due to low water yields, particularly if a back-up water supply has not been formally established.

Future vulnerability to drought events is determined by many factors, such as climate change, land use, and population changes, as well as the implementation of mitigation and adaptation strategies. Climate change is expected to increase the Town's future vulnerability to drought events. These trends are further described in Section 4.1 of this annex and in Section 6 of the main body of the HMP.

6.4 Extreme Temperatures

The Town of Knox has ranked their overall vulnerability to extreme temperature events as high, as indicated in Table 4-2. According to Town representatives, extreme temperature events now occur more frequently in the jurisdiction and affect the entire jurisdiction, causing major damage. The Town feels they are moderately prepared for extreme temperature events.

Extreme temperature events tend to have greater impacts on vulnerable populations, including older adults (over 65 years), young children (under 5 years), individuals with health complications, and individuals who cannot afford to sufficiently heat or cool their homes. Approximately 4.3% of the population in the Town is under 5 years old, and 15.6% of the population is over 65 years old. Approximately 9.6% of the residents of the Town have a disability (excluding any institutionalized residents and active-duty military members) some of whom have health problems that make them more vulnerable to extreme heat or cold. Approximately 5.2% of the Town's population is below the poverty level. Many residents within these populations are at a higher risk of being impacted by extreme temperature events.

Future vulnerability to extreme temperature events is determined by many factors, such as climate change, land use, and population changes, as well as the implementation of mitigation and adaptation strategies. Climate change is expected to increase the Town's future vulnerability to extreme heat events and decrease its vulnerability to extreme cold events. These trends are further described in Section 4.1 of this annex and in Section 6 of the main body of the HMP.

6.5 Landslide

The Town of Knox has ranked their overall vulnerability to landslide events as low, as indicated in Table 4-2. According to Town representatives, landslide events occur rarely in the jurisdiction and affect one or two problem areas within the jurisdiction, causing minor damage. The Town feels they are well prepared for landslide events.

Landslides can impact the structural integrity of buildings, roads, and other infrastructure in the Town. They can also impact transportation flow and the provision of supplies, can degrade the natural environment, and have the potential to cause injury and death.

Future vulnerability to landslide events is determined by many factors, such as climate change, land use, and population changes, as well as the implementation of mitigation and adaptation strategies. For example, underlying conditions that impact landslides, such as bedrock stability and heavy rain events, are influenced by climate-related trends, such as temperature increases and extreme precipitation events. These trends are further described in Section 4.1 of this annex and in Section 6 of the main body of the HMP.

6.6 Wildfire

The Town of Knox has ranked their overall vulnerability to wildfire events as low, as indicated in

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Table 4-2. According to Town representatives, wildfire events occur rarely in the jurisdiction, often in the form of brushfires, and affect one or two problem areas within the jurisdiction, causing minor damage. The Town feels they are currently well prepared for wildfire events.

Wildfires are especially dangerous when they occur in the wildland-urban interface. They can burn anything from vegetation and crops to buildings and structures. Wildfires can also decrease the structural integrity of infrastructure, such as roads and bridges, due to the heat. Smoke from wildfires can have serious health consequences, especially for people with preexisting health conditions and other vulnerable populations as described in Section 6.4.¹ Officials from the Town of Knox noted an increase in the death of large stands of trees (e.g., spruce, hemlock, white pines), which is increasing fuel loads in rural areas. While wildfire has not significantly impacted the Town to date, wildfires may become a greater threat as fuel loads continue to increase and drought and extreme temperature events increase in frequency with climate change. The Town would like to mitigate future brushfires and wildfires.

Future vulnerability to wildfire events is determined by many factors, such as climate change, land use, and population changes, as well as the implementation of mitigation and adaptation strategies. Climate change is not likely to greatly increase the risk of wildfires in New York State, according to the New York State Climate Impacts Assessment, and the probability of wildfires is expected to remain very low even under high-emissions scenarios.² However, climate change is projected to increase the risk of wildfires and the duration of the wildfire season elsewhere in North America, leading to increased risks of smoke and air pollution in New York State. Future land management decisions, such as regulations regarding when and where burning is allowed, may have a greater impact on the probability of future wildfire events.

6.7 Jurisdictional Priorities

Taking into account the identified natural hazards, potential impacts, assets, and vulnerabilities identified above, key vulnerabilities and priorities to be addressed in this HMP were identified for the Town.

Top concerns about hazard mitigation in the Town included:

- **Flooding:**
 - Flood-related impacts to agricultural fields are increasingly significant, both with storms and with extended stretches of rainy days without sun to dry fields. Heavy, wet clay soils make fields too muddy in the spring and fall for agricultural equipment to operate safely. Crops can't be planted

¹ Source: New York State Hazard Mitigation Plan (2023): <https://mitigateny.org>

² <https://nysclimateimpacts.org/wp-content/uploads/2024/01/Assessment-ch2-NYS-changing-climate-01-09-24.pdf>

early enough in the spring and hay fields and other crops have not always been accessible to be harvested in the past several years.

- During Hurricanes Irene and Lee, approximately 50 basements were flooded, and roads flooded. Knox is on top of a hill, however, so flooding impacts to homes and other structures aren't typically too severe.
- Flooding can island the Town of Knox and the Fire Department. However, Rock Road Chapel (religiously affiliated) is a Red Cross certified shelter in Knox, which is a great resource. Rock Road Chapel also has a food bank, and they offer free breakfast on Wednesdays.

- **Severe Storms**

- Knox had quite a few intense storms last summer (2023) but was able to manage impacts to highway infrastructure pretty well (three 4" rainfalls within 6 weeks).
- Quay Road, Street Road, and West Wind Road are the Town-maintained roads most impacted by washouts during intense rain events.
- Erosion from stormwater runoff is also a concern on other roads (State Routes 146, 156, which are main access roads) where slopes are steep. Traffic safety during storms is a concern on roadways with steep slopes.
- Ice storms and heavy, wet snowfalls cause damage by collapsing roofs, breaking trees and downing power lines, causing power outages.
- Karst geology carries unfiltered storm water and pollutants underground, potentially compromising private wells and septic systems.

- **Water Infrastructure:**

- Everyone is on private well water and private septic systems. Sulfur water and high mineral content are common in wells. Many households have water treatment systems.
- Karst geology carries unfiltered contaminants. Areas with dense, small-lot housing clusters built before 1974 and aging septic systems are a concern.
- Drought and drinking water quality is a concern when wells run low or dry.
- Minimum lot size is 3 acres since zoning ordinance was enacted in 1974, but average lot size is larger.

The following populations were identified as being particularly vulnerable to hazards:

- Elderly residents who frequent the Hilltown Senior Center in the Town of Berne where flooding is a concern.
- Children who spend time in the day care center at the Knox Reformed Church where flooding is a concern.
- Albany County maintains a list of vulnerable residents. The Town of Knox relies on this County database.

The plan was revised to reflect the following changes in community priorities since the 2018 HMP Update:

- Extended periods of rainfall other than storms are more frequent now. Impacts to agricultural operations are more significant and debilitating when fields don't dry out and can't be accessed by farm equipment. Significant losses of hay and row crops have resulted in the past few years. Fields were inaccessible around planting time and harvest time due to muddy conditions.
- Heavy, wet snowfalls and ice storms are more frequent and damaging.

Additional concerns that the Town would like addressed in the plan include:

- **Communications:**
 - The two cell towers in town have limited emergency backup power (500-gallon propane tanks) to keep them operational during extended power outages.
 - The Town has 80% access to broadband internet and their goal is to increase access to 100%.

6.8 Additional Impacts

Additional impacts of the hazards are summarized in the problem descriptions in the Town's past and new mitigation actions, as described in the following sections.

7 MITIGATION STRATEGY AND IMPLEMENTATION

7.1 Past, Completed, and Ongoing Initiatives

The Town had proposed 16 mitigation actions in the 2018 Albany County HMP Update. The status of each action is summarized below, along with the Town’s decision about whether to include the action in the 2024 HMP Update. Any revisions to actions proposed in 2018 are indicated below.

Table 7-1. Status of 2018 Mitigation Actions

| Name | Description | Hazard(s) | | Lead Agency | Status (Completed, In Progress, No Progress, Discontinued) | Carried into 2024 HMP Update? (Yes/No) |
|---|---|----------------------------|--|---|--|---|
| | | Mitigated | | | | |
| Install Concrete Box Culverts at Each End of Quay Road | Cost savings with less frequent repairs after flooding, reduce erosion and road damage, maintain access via thoroughfare. Estimate \$250,000 | Flooding; severe storms | | Town of Knox – Highway Dept. Superintendent | In progress: Have parts but estimate for completing work for the upper end of Quay Road is \$250,000. | Yes |
| Improve Drainage at State Route 146/Middle Road/Street Road Intersection | Cost savings with less frequent repairs after flooding, prevent flooding of residential properties, prevent road hazard on SR 146 from gravel washout deposits, maintain access on major thoroughfare. Reduce loss of gravel/costs of replacement in parking area at highway garage. Difficulty coordinating local, county, and state organizations. Estimate \$25,000. | Flooding; severe storms | | NYSDOT, Albany County DPW Supervisor | Completed; Drainage along roads is improved but Town Highway Garage building, and septic system still floods with runoff from slope behind facility. | Yes |

| Name | Description | Hazard(s) | | Status | |
|--|--|--|---------------|---|--|
| | | Mitigated | Lead Agency | (Completed, In Progress, No Progress, Discontinued) | Carried into 2024 HMP Update? (Yes/No) |
| Transfer station redesign/repair | Storm water drainage from slope behind building site continues to cause concern. | Not specified | Not specified | Ongoing; old building was demolished; new building to be constructed in 2024. | Yes |
| Upgrade or replace highway garage | Aging facility has inadequate insulation and other deficiencies | Not specified | Not specified | In progress | Yes |
| Relocate & replace old highway barn | The Highway Barn was repaired (~\$30,000) | Not specified | Not specified | Completed | No |
| Reconfigure Craven/CR252 intersection | Not specified | Not specified | Not specified | No progress, no specific plans | Yes |
| Emergency shelter area for pets | Town dog shelter has five cages. | Flooding; severe storms; extreme temperatures; landslide | Not specified | Complete, unless more capacity is needed. | Yes |
| Drainage at Whipple & Old Stage | Not specified - issues with beavers at this location | Flooding; severe storms; | Not specified | Complete, but continued activity is under observation | Yes |
| Drainage at SR 156 east of CR 255 | Not specified | Flooding; severe storms; | Not specified | Completed (installed a new culvert) | Yes, continue monitoring |

| Name | Description | Hazard(s) Mitigated | Lead Agency | Status | |
|---|---------------|---|---------------|---|---|
| | | | | (Completed, In Progress, No Progress, Discontinued) | Carried into 2024 HMP Update? (Yes/No) |
| Drainage at SR 146 east of Sturgess Rd. | Not specified | Flooding; severe storms; | Not specified | In progress, large pipe overflowed 3X last year | Yes |
| Drainage at CR253 Bozenkill/West Wind | Not specified | Flooding; severe storms; | Not specified | Completed (installed a new culvert) | No |
| Drainage & reinforce banks Seabury Rd. | Not specified | Flooding; severe storms; | Not specified | Completed | Yes |
| Mark evacuation routes & shelters | Not specified | Flooding; severe storms; extreme temperatures; landslide | Not specified | No progress | Yes |
| Register housebound for evacuation | Not specified | Not specified | Not specified | No progress; Nothing beyond what the County registry already includes | Yes, should update regularly |
| Promote citizen preparedness | Not specified | Not specified | Not specified | In progress; Town newsletter goes to all residents twice a year; training of fire fighters is one of the best ways the Town prepares citizens | Yes |

| Name | Description | Hazard(s) | | Status | |
|--|---------------|---------------|---------------|---|--|
| | | Mitigated | Lead Agency | (Completed, In Progress, No Progress, Discontinued) | Carried into 2024 HMP Update? (Yes/No) |
| Document future hazards & costs | Not specified | Not specified | Not specified | In progress; As needed | Yes |

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7.2 New Mitigation Actions

In addition to the actions carried over from the 2018 HMP, the Town of Knox identified new mitigation actions for inclusion in the 2024 HMP Update, in conjunction with the project team. First, a list of actions was brainstormed based on the capabilities, hazard identification, impacts, and vulnerabilities described above. This included consideration to the ways that the Town could expand and improve the identified capabilities to achieve mitigation, as described in Section 3 of this annex. Then, a more comprehensive range of actions were evaluated as described in Section 9 of the main body of the HMP. Finally, actions that tied in most closely with the vulnerabilities identified by the Town were selected for inclusion in the HMP. These actions are included in the table below. (Note that in the table, CF = Critical Facility, EHP = Environmental and Historic Preservation.) The actions also help address climate change in the Town, since many of the hazards profiled in this HMP may be worsened by climate change. The effects of climate change on these hazards are described in Section 4.1 and Section 6 of this annex, as well as in Section 6 of the main body of the HMP.

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Table 7-2. New Mitigation Actions

| Project # | Project Name | Goal/Objective being Met | Hazard to be Mitigated | Description of the Problem | Description of the Solution | Related to CF?* | EHP Issues* | Estimated Timeline | Lead Agency | Estimated Costs | Estimated Benefits | Potential Funding Sources | Priority |
|-----------|---|--------------------------|--------------------------------------|---|---|-----------------|-------------|--------------------|--|-----------------|---|---|----------|
| TKnoxMH1 | Drought and Wildfire Education Campaign | G3, G6 | Multiple Hazards (Drought, Wildfire) | Although rare, droughts do occur in the Town and can threaten livestock, cause crop damage, create water quality problems for residents who rely on private wells, and increase the likelihood of wildfire. | Implement a public education campaign that encourages residents to implement water conservation practices, raises awareness of when such water conservation measures should be taken, and provides strategies for mitigating wildfire risks during periods of drought (e.g., burn bans, creating defensible space around homes). The campaign would also encourage farm operations to adopt climate resilient practices, such as water storage, to prepare for future drought events. | No | No | 6 months-1 year | SWCD with assistance from the National Weather Service | Low | Residents and farmers will be equipped to implement behavioral and operational changes that conserve water, mitigate wildfires, and reduce the overall impact of drought. | US BRIC, EPA EJSG, SWCD, HMGP Post Fire | Medium |
| TKnoxF1 | Vulnerability Assessment and Flood Protection for Critical Facilities | G1, G2, G3, G6 | Flood | Some of the Town's critical facilities are not protected against the 0.2% chance flood event or previous worst case flood event, while others need assessment to determine their level of protection. This leaves these facilities vulnerable to becoming inoperable during flood events. | Conduct vulnerability assessments for the critical facilities identified in the Town's annex to this HMP update, to determine their level of protection against a 0.2% chance flood event (or previous worst-case flood, if greater than the 0.2% chance flood), where unknown. If/when funding is available, protect any unprotected facilities to an 0.2% chance flood event (or previous worst case flood event, if applicable), through engineering design, building retrofits, or other measures, as necessary and feasible. These facilities are identified in Table 5-1 of the jurisdictional annex. | Yes | Potentially | 3-5 years | Town of Knox Building Department with support from Albany County | High | This action would reduce the vulnerability of critical facilities to flood events. | US HMGP, US BRIC, US Flood Mitigation Assistance, US HUD CDBG-MIT, NYS HM RLF | High |
| TKnoxF2 | Agriculture Education Campaign to Address Flooding | G6 | Flood | Agricultural areas in the Town often experience flooding and persistent saturation. This impacts farmers' ability to grow and harvest crops, creating economic hardships. | Implement a public education campaign that provides information/education about best management practices for stormwater and flood management to improve drainage in agricultural areas. This educational campaign would target farmers and other landowners. | No | No | 6 months-1 year | SWCD and Cornell Cooperative Extension (CCE) | Low | This action would help improve drainage in agricultural fields, thus improving productivity and mitigating the negative consequences of floods on the Town's rural economy. | US BRIC,USDA WEP, SWCD | Medium |

| Project # | Project Name | Goal/Objective being Met | Hazard to be Mitigated | Description of the Problem | Description of the Solution | Related to CF?* | EHP Issues* | Estimated Timeline | Lead Agency | Estimated Costs | Estimated Benefits | Potential Funding Sources | Priority |
|-----------|---|--------------------------|---|--|--|-----------------|-------------|--------------------|----------------------------------|-----------------|--|---|----------|
| TKnoxMH2 | Upgrade Community Facilities to Serve as Cooling / Warming Stations | G1, G5, G6 | Multiple Hazards (Flood, Severe Storm, Extreme Temperature) | During extreme temperature events, floods, and severe storm events, there are several facilities that can serve as warming/cooling centers or emergency shelters. However, not all of these facilities have generated power, such the Knox Reformed Church and other faith/service groups. This limits the Town's ability to provide shelter and heat/cooling during these events, and creates use conflicts for existing facilities that serve as shelters. | Purchase/lease mobile generators so that they could be used at the most appropriate site (e.g. if one part of Town is not functional, having mobile generators would allow mobility). If infeasible at a particular site, purchase a standby generator for that site as needed. | Yes | Potentially | 1-3 years | Town of Knox Building Department | Medium | This action would increase the Town's ability to provide shelter and heat/cooling during extreme temperatures, severe storms, and floods. | US CDBG-MIT, US HMGP, NYS HM RLF | High |
| TKnoxL1 | Landslide Mitigation Assessment for Town Roads and Railroad Corridors | G2, G5, G6 | Landslide | While landslides are rare, the Town does experience some landslides along Town roads and rail corridors. | Conduct an investigation of the most suitable methods to protect roadways and rail lines that are in areas at risk for landslides. This may include measures like buttressing existing slopes, increasing vegetation to stabilize slopes, upgrading roadway/rail drainage systems, and/or other measures as identified by the investigation. | No | Potentially | 1-3 years | Town of Knox Highway Department | Medium | This action would identify feasible strategies for reducing the risk of landslides and related impacts on the Town's roads and along rail corridors. | US HMGP, US BRIC, NYS HM RLF, USGS Landslides Hazards Program | Medium |
| TKnoxMH3 | Increase Resilience at Municipal Facilities and Key Assets | G1, G2, G3, G5, G6 | Multiple Hazards (Flood, Severe Storm) | According to Albany County's Climate Resiliency Plan, several municipal facilities throughout the County are vulnerable to natural hazards such as flooding and severe storms, especially older buildings and buildings that serve vulnerable populations. Some Town of Knox facilities may fall into this category. | Partner with Albany County to assess additional opportunities to increase resilience at critical facilities and other key assets. This may include, but is not limited to, action items detailed in the Albany County Climate Resiliency Plan page 180-197, such as: 1) Assess municipal buildings for resilient retrofit opportunities, 2) Assess municipal properties for resilient site improvements, and 3) Assess climate risks and identify proactive solutions for climate resilience at a local level. Particular facilities of interest may include, but are not limited to, the ones listed in the Climate Resiliency Plan (Chapter 3 and pages 180-197), as well as the ones listed in the Critical Facilities section of the jurisdictional annex. | Yes | Potentially | 3-5 years | Town of Knox Building Department | High | This action would reduce the vulnerability of the community's critical facilities to natural hazards including floods and severe storms. | US HMGP, US BRIC, US HUD CDBG-MIT, NYS HM RLF | Medium |

*Note: CF = Critical Facility, EHP = Environmental and Historic Preservation.

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7.3 Mitigation Action Prioritization

Each of the Town’s proposed mitigation actions were evaluated and prioritized according to the criteria listed in Section 9 of the main body of the HMP. This includes a cost-benefit review of the proposed actions. The results are included in Table 7-3.

Table 7-3. New Mitigation Action Prioritization

| Mitigation Action ID | Mitigation Action Name | Ability to Increase Resilience | Economic Feasibility | Low Environmental Impact | Ability to Implement | Total Score | Priority |
|----------------------|---|--------------------------------|----------------------|--------------------------|----------------------|-------------|----------|
| TKnoxMH1 | Drought and Wildfire Education Campaign | 1 | 3 | 3 | 2 | 9 | Medium |
| TKnoxF1 | Vulnerability Assessment and Flood Protection for Critical Facilities | 1 | 3 | 3 | 3 | 10 | High |
| TKnoxF2 | Agriculture Education Campaign to Address Flooding | 1 | 3 | 3 | 2 | 9 | Medium |
| TKnoxMH2 | Upgrade Community Facilities to Serve as Cooling / Warming Stations | 3 | 2 | 2 | 3 | 10 | High |

| Mitigation Action ID | Mitigation Action Name | Ability to Increase Resilience | Economic Feasibility | Low Environmental Impact | Ability to Implement | Total Score | Priority |
|----------------------|---|--------------------------------|----------------------|--------------------------|----------------------|-------------|----------|
| TKnoxL1 | Landslide Mitigation Assessment for Town Roads and Railroad Corridors | 2 | 2 | 2 | 2 | 8 | Medium |
| TKnoxMH3 | Increase Resilience at Municipal Facilities and Key Assets | 3 | 2 | 2 | 2 | 9 | Medium |

Note: Feasibility/effectiveness is rated as follows: 1 = Poor, 2 = Moderate, 3 = Good. Priority is determined as follows based on total score: 4-6 = Low, 7-9 = Medium, 10-12 = High.

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7.4 Mitigation Action Implementation and Administration

The Town's new mitigation actions will be implemented and administered via the lead agencies listed in Table 7-2 of this annex, using the timeframes, prioritization, and funding sources in Sections 0 and 7.3 as a guide. Further details about implementation of mitigation actions for all jurisdictions in Albany County, as well as a description of funding sources, are described in Sections 9 and 10 of the main body of the HMP.

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8 ADDITIONAL PUBLIC INVOLVEMENT

Public input was solicited to guide the development of the HMP through two public information meetings and a community survey. A summary of the findings of these outreach activities can be found in Section 3 of the main body of the HMP. The Town of Knox may continue to seek public participation in hazard mitigation planning after HMP approval by including discussion of the HMP as an agenda item at public Town Board meetings and by offering opportunities for members of the public to participate in the implementation of relevant mitigation actions.

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