

Jurisdictional Annex

Town of DeRuyter

1. Contacts

The contact for the Town of DeRuyter regarding this plan are identified as follows:

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- Walter Cook— Highway Superintendent
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Town Website: <https://www.deruyternygov.us/>

2. Municipal Profile

2.1 Population

The 2020 Census estimated that 1,276 people live in the Town of DeRuyter. The Town's population has decreased by 19.70% since the 2010 Census (1,589) (U.S. Census Bureau, 2020). The median age in the Town is 46.8 years and 22.8% of the population is over the age of 65. The Town covers approximately 31.1 square miles. The Town has an equalized assessed value of approximately 94 million dollars spread across a variety of property classes.

2.2 Location

The Town of DeRuyter is located in the southwestern corner of Madison County and is bordered by the Town of Cazenovia to the north, the Towns of Nelson and DeRuyter to the east, the Town of Lincklaen (Chenango County) to the south, and the Towns of Cuyler (Cortland County) and Fabius (Onondaga County) to the west. Population centers in the Town include the Village of DeRuyter. There are also numerous developed properties (primarily seasonal residences) surrounding

the DeRuyter Reservoir. The Town of DeRuyter is shown in Figure 1 (Attachment A).

2.3 Governing Body

The Town of DeRuyter is governed by a five-member Town Board, which includes the Supervisor and four councilors.

2.4 Recent and Anticipated Future Development

Since the last County HMP (2017), houses were constructed on South Hill, and multiple properties surrounding the DeRuyter Reservoir were converted from seasonal to year-round residences. No new development has occurred in the Special Flood Hazard Area, and the reported developments have not changed the Town's vulnerability to natural hazards.

3. Capability Assessment

3.1 Planning and Regulatory Capability

The Town has considered the 2017 HMP when implementing their existing plans and regulations and progressing projects. 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 1, below.

Table 1. Planning Mechanisms and Capabilities		
Planning Mechanism	Town of DeRuyter	Notes
Administration		
Maintenance Programs	Yes	
Mitigation Planning Committee	Yes	
Mutual Aid or Shared Services Agreements	Yes	
Planning Board	Yes	
Zoning Board	No	
Development Approvals		
Building Code	Yes	
Building Code Effectiveness Grading Schedule (BCEGS) Evaluation	No	
Fire Department ISO Rating		
Site Plan Review Requirements	Yes	
Special Use Permits	Yes	
Funding Resources		
Authority to Levy Taxes	Yes	
Capital Improvement Project Funds	Yes	
Federal Funding Programs (i.e., USDA,	Yes	

Table 1. Planning Mechanisms and Capabilities		
Planning Mechanism	Town of DeRuyter	Notes
FEMA, others)		
General Obligation Bonds and/or Special Tax Bonds	Yes	
Impact Fees for New Development	Yes	Road use law
State Funding Programs (i.e., NYSEFC, NYSOCR, NYSDEC, others)	Yes	
Utility Fees (i.e., water, sewer, stormwater, gas, electric)	No	
Land Use Regulations		
Density Controls	No	
Flood Insurance Rate Maps	Yes	
Floodplain Ordinance	Yes	
Hillside Development Regulations	No	
Open Space Preservation	Yes	10% open space required for new subdivisions
Stormwater Management Regulations	Yes	State regulations apply
Streambank Setback Regulations	No	
Subdivision Regulations	Yes	
Transfer of Development Rights	Yes	State and Federal Programs Available for Agriculture
Zoning Ordinance	Yes	
Natural Resources		
Forest/Vegetation Management	Yes	Section 319 Program of Forest Tax Law available through DEC
Stream Corridor Management	Yes	Lake Watershed Regulations
Stream Dumping Regulations	Yes	State regulations apply
Urban Forestry and Landscape Management	No	
Watershed Management	Yes	Oneida Lake Program
Wetland Regulations	Yes	State and Federal regulations apply
Plans		
Capital Improvement Plan	Yes	
Comprehensive Emergency Management Plan	No	County has this plan in place
Comprehensive Plan	No	
Continuity of Operations Plan	No	County has this plan in place
Economic Development Plan	No	
Other Plans (specify)	Yes	Adopted Public Health Plan in response to COVID-19 pandemic (required by NYS)
Programs/Organizations		
Climate Smart Community	No	
Local Emergency Preparedness/Disaster Response Organizations	Yes	Fire Department
Local Environmental Protection Organizations	Yes	Tioughnioga Lake Preservation
National Weather Service StormReady Certification	No	County is certified
Outreach Programs	Yes	Education of Elected to NIMS Standards
Partnerships with private entities	No	

Table 1. Planning Mechanisms and Capabilities		
Planning Mechanism	Town of DeRuyter	Notes
addressing mitigation or disaster response		
School Programs or Adult Educational Programs	Yes	Fire Safety Education, Headstart
Staff Positions		
Civil Engineer	No	
Code Enforcement Officer	Yes	
Emergency Manager	Yes	Town Supervisor
Floodplain Administrator	Yes	Code Enforcement Officer
Planner/GIS Coordinator	No	County assists
Technical Abilities		
Grant Writing	No	County assists
Hazard Information Centers	No	
Hazard Warning Systems	Yes	

3.2 Emergency Communications, Routes, and Shelters

The Town of DeRuyter utilizes the Town website and Town Facebook page for emergency communications. The Town is also covered by Madison County's emergency notification system. Major transportation routes within the Town include State Route 13. The Town's emergency shelter locations are summarized in Table 2, below.

Table 2. Emergency Shelters						
Facility	Address	Owner/ Occupant	Support medical needs?	ADA Compliant?	Pets accepted?	Notes
DeRuyter Central School	711 Railroad St, DeRuyter, NY 13052	DeRuyter Central School District	Yes	Yes	No	Backup power available
DeRuyter Town Hall	735 Utica Street, DeRuyter, NY 13052	Town of DeRuyter	Yes	Yes	No	Backup power available

3.3 Temporary and Permanent Housing Locations

The potential temporary and permanent housing locations listed below were identified for displaced residents in the Town of DeRuyter based on the 2017 NYS Hazard Mitigation Planning Standards. It is noted that formal agreements would need to be established in order to use privately owned properties.

- **Potential Temporary Housing Locations**
 - DeRuyter Fairgrounds (located in and owned by Village of DeRuyter) - Mechanic Street
- **Potential Permanent Housing Locations**
 - Privately owned vacant land throughout Town (coordination required with landowners for potential property purchase or subdivisions)

4. Hazard Vulnerabilities and Ranking

4.1 Risk Assessment

The Town reviewed multiple natural hazards to include in the HMP update. The hazard analysis criteria is summarized in Table 3. The Town's natural hazard analysis results are provided in Table 4.

Table 3. Hazard Analysis Criteria						
Score	Extent	Onset	Impact	Frequency	Total Score	Overall Vulnerability
1	One location	Days of warning	Minor damages/injuries	Rare	4 to 5	Low
2	Several locations	Hours of warning	Moderate damages/injuries	Infrequent	6 to 8	Moderate
3	Large area	No warning	Severe damages/injuries	Regular	9 to 12	High

Table 4. Natural Hazard Vulnerability and Risk Assessment						
Hazard Event	Extent	Onset	Impact (Damages and Injury)	Frequency	Total Score and Overall Vulnerability	Jurisdiction Rank
Flood	2	3	2	3	10 - High	1
Ice Storm	3	1	3	2	9 - High	2
Severe Thunderstorm/Wind/Hail	2	2	2	2	8 - Moderate	3
Severe Winter Storm	3	1	1	3	8 - Moderate	4
Tornado	1	3	2	1	7 - Moderate	5
Extreme Temperatures	3	1	1	2	7 - Moderate	6
Earthquake	2	3	1	1	7 - Moderate	7
Landslide	1	3	1	1	6 - Moderate	8

Table 4. Natural Hazard Vulnerability and Risk Assessment						
Hazard Event	Extent	Onset	Impact (Damages and Injury)	Frequency	Total Score and Overall Vulnerability	Jurisdiction Rank
Drought	3	1	1	1	6 - Moderate	9
Wildfire	1	3	1	1	6 - Moderate	10
Ice Jam	1	2	1	1	5 - Low	11

4.2 Critical Facilities

Critical facilities include any facility that is critical for emergency response or that requires special emergency response in the event of hazardous incidents as identified by the Town of DeRuyter. Table 5, below, denotes the types and locations of critical facilities owned by the Town. Additional critical facilities are located in the Village of DeRuyter, and are described in the Village's annex. Critical facilities within the Town are shown on Figure 1 (Attachment A).

Table 5. Critical Infrastructure in the Town of DeRuyter		
Facility Name	Address	Located in Floodplain
Air Tower (VORTAC Site)	Carey Rd	No
Cell Tower	Dugway Rd	No
Natural Gas Substation	Crumb Hill Rd	No
Radio Tower	1550 Carey Rd	No
Water Storage Tank	S Hill Rd	No

5. Priority Hazard Events

The following sections detail the priority hazard events identified by the jurisdiction. Additional information about each hazard including frequency, history, and severity within Madison County is included within Section 5.0 of the main body of the Hazard Mitigation Plan. Historical tornado and earthquake records are reported for the last ten years (2012-2022). All other hazard profiles report events that have occurred in the last five years (2017-2022).

The probability of climate-related hazard events is expected to increase in the future within the Town of DeRuyter. Climate change is expected to cause an increase in weather volatility, rising sea level, and greater temperature extremes.

Past occurrences of hazard events are indicated in their respective profiles below. Some hazards do not have historical records, but they were profiled for future mitigation planning consideration.

5.1 Flood

5.1.1 *Description*

For a description of this hazard, please see Section 5.2 of the main body of the plan.

5.1.2 *Hazard Vulnerability*

The Town's overall vulnerability for a flood is high, as documented in their hazard analysis in Section 4.1. The Town is drained by Tioughnioga Creek and its tributaries. The DeRuyter Reservoir is located in the northwestern corner of the Town. FEMA provides flood insurance rate maps for the Town of DeRuyter. The 100-year floodplain corresponds with areas that are at high risk for flooding (1% likely to flood any given year), and areas within a 500-year floodplain are at moderate flood risk (0.2% likely to flood in any given year). Figure 1 (Attachment A) shows FEMA mapped 100-year floodplains within the Town. Table 6 summarizes the amount of land within the Town of DeRuyter that is located within 100-year floodplain, as mapped by FEMA.

Table 6. Summary of Areas in Floodplains (Source: FEMA Q3 Digital Floodplain Data, 1996)		
Town of DeRuyter Total Area	Percent of Total Area	
	100-Year Floodplain	500-Year Floodplain
19,678 acres	4.6%	0%

None of the Town's critical facilities are located in a mapped floodplain.

5.1.3 Historical Hazard Occurrences and Damage Estimates

According to the NCDC, in the past five years, no flood records were noted to specifically impact the Town of DeRuyter. The Town reports local records of flooding issues caused by beaver dams. No damage estimates were reported for the Town. As described in Section 6.0 of this annex, NFIP loss claims data were requested from FEMA and a response is pending. According to the County's 2017 HMP, there are no repetitive loss properties in the Town, all single-family homes.

5.1.4 Future Potential Impacts

The Town's overall vulnerability for a flood remains high. Properties along the DeRuyter Reservoir and Tioughnioga Creek and its tributaries will remain vulnerable to flooding in the future. The Town proposed two flood-related mitigation actions involving culvert upgrades on Williams Road and Dublin Road. Once implemented, these projects will reduce the risk of future flood damages along these roadways. The frequency and magnitude of flood events may increase due to climate change.

5.2 Ice Storm

5.2.1 Description

For a description of this hazard, please see Section 5.7 of the main body of the plan.

5.2.2 Hazard Vulnerability

The Town's overall vulnerability for an ice storm is high, as documented in their hazard analysis in Section 4.1. An ice storm typically affects most or all of the County. The entire Town of DeRuyter is susceptible to damages from an ice storm event. The Town Highway Department. completes tree maintenance within Town road right of ways to minimize potential damages to overhead utility lines, which is common during ice storms. Private utility right of ways are generally maintained by the individual utility companies.

5.2.3 Historical Hazard Occurrences and Damage Estimates

The NCDC reports one ice storm in Madison County within the past five years (this hazard is reported for the entire County). This event occurred on February 10, 2021 and is described in Section 5.7 of the main body of the plan. No damage estimates related to ice storms are reported specific to the Town of DeRuyter. Damages to the Town's critical infrastructure or primary transportation route (State Route 13) would be most impactful to Town residents. Storm damages would primarily impact the more populated portions of the Town, including the Village of DeRuyter and development around the DeRuyter Reservoir.

5.2.4 Future Potential Impacts

The Town's overall vulnerability for an ice storm remains high. Debris clearing along roadways will continue to be addressed by the Town Highway Department and private utility companies to mitigate storm damages to the extent possible.

5.3 Severe Thunderstorm, Windstorm, or Hail

5.3.1 Description

For a description of these hazards, please see Section 5.1 of the main body of the plan.

5.3.2 Hazard Vulnerability

The Town's overall vulnerability for a severe thunderstorm, windstorm, or hail event is moderate, as documented in their hazard analysis in Section 4.1. The entire Town is susceptible to damages from a severe thunderstorm, windstorm, or hail event. Fallen trees from severe winds can damage overhead utility lines, resulting in power outages. In addition, these events are likely to result in damages to private and public infrastructure and property. Damages to the Town's critical infrastructure or primary transportation routes (State Route 13) would be most impactful to Town residents. Storm damages would primarily impact the more populated portions of the Town, including the Village of DeRuyter and development around the DeRuyter Reservoir.

5.3.3 Historical Hazard Occurrences and Damage Estimates

The NCDC reports three specific severe storm events that occurred in the Town of DeRuyter within the past five years. One of these records was a hail event, and two were thunderstorm winds. Estimated damages for the Town of DeRuyter ranged from \$0 to \$7,000 per event (Table 7). Actual damages were likely greater than those estimated by the NCDC.

Table 7. Severe Storm Event Records for the Town of DeRuyter				
Event Type	Date	Magnitude	Estimated Property Damage	Estimated Crop Damage
Thunderstorm Wind	5/18/2017	55 knots	\$7,000.00	-
Hail	6/21/2021	1 in	\$0.00	-
Thunderstorm Wind	7/13/2021	50 knots	\$1,000.00	-
Total			\$8,000.00	None reported

5.3.4 Future Potential Impacts

The Town's overall vulnerability for a severe thunderstorm, windstorm, or hail event remains moderate. The frequency and magnitude of severe storm events may increase due to climate change.

5.4 Severe Winter Storm

5.4.1 *Description*

For a description of this hazard, please see Section 5.3 of the main body of the plan.

5.4.2 *Hazard Vulnerability*

The Town's overall vulnerability for a severe winter storm is moderate, as documented in their hazard analysis in Section 4.1. These storms typically affect more than one area within the County. The entire Town of DeRuyter is susceptible to damages from a severe winter storm event. The Town Highway Department clears Town roads during heavy snow events, and the Town works with the Madison County Highway Department and NYS Department of Transportation for clearing of other roadways. Roadway safety is a major concern during severe winter storm events. Damages to the Town's critical infrastructure or primary evacuation routes (State Route 13) would be most impactful to Town residents. Storm damages would primarily impact the more populated portions of the Town, including the Village of DeRuyter and development around the DeRuyter Reservoir.

5.4.3 *Historical Hazard Occurrences and Damage Estimates*

The Town of DeRuyter has been affected by a number of severe winter storm events reported for Madison County, which are described in Section 5.3 of the main body of the plan. These storms typically affect more than one area within the County. The NCDC does not report any winter storm damage estimates specific to the Town of DeRuyter.

5.4.4 *Future Potential Impacts*

The Town's overall vulnerability for a severe winter storm remains moderate. The severity and frequency of severe winter storms may increase due to climate change.

5.5 Tornado

5.5.1 *Description*

For a description of this hazard, please see Section 5.8 of the main body of the plan.

5.5.2 *Hazard Vulnerability*

The Town's overall vulnerability for a tornado is moderate, as documented in their hazard analysis in Section 4.1. The entire Town of DeRuyter is susceptible to damages from a tornado. The Town of DeRuyter is located in the southern portion of Madison County, which is very hilly. Tornadoes often touch down along topographic high points in this region and affect more localized areas at one time, rather than longer swaths of damage experienced in areas with flatter topography. Even if only a small area is affected, a tornado could result in severe damage to homes, over-turned automobiles and leveling of utility lines.

5.5.3 *Historical Hazard Occurrences and Damage Estimates*

Three tornadoes have occurred in Madison County within the past ten years. The NCDC reports no specific tornado events that occurred in the Town of DeRuyter between 2012 and 2022.

5.5.4 *Future Potential Impacts*

The Town's overall vulnerability for a tornado remains moderate. Damages from a tornado event can be devastating, and the frequency and magnitude of tornado events may increase due to climate change.

5.6 Extreme Temperatures

5.6.1 *Description*

For a description of this hazard, please see Section 5.6 of the main body of the plan.

5.6.2 Hazard Vulnerability

The Town's overall vulnerability for an extreme temperature event is moderate, as documented in their hazard analysis in Section 4.1. Extreme temperatures typically affect most or all of the County, and the entire Town of DeRuyter is susceptible to this hazard. Extreme temperature events tend to have greater impacts on vulnerable populations, including older adults (over 65 years), young children (under 5 years), people with health problems, or people who cannot afford to sufficiently heat or cool their homes. Approximately 5.3% of the population in the Town is under 5 years old, and 22.8% of the population is over 65 years old. Approximately 6.5% of the Town's population is below the poverty level. These populations are at a higher risk of being impacted by extreme temperature events.

5.6.3 Historical Hazard Occurrences and Damage Estimates

The NCDC reports three extreme temperatures in Madison County within the past five years. Each of these events was an extreme cold/wind chill reported countywide. Details of these events are described in Section 5.5 of the main body of the plan. No damage estimates related to extreme temperatures are reported specific to the Town of DeRuyter.

5.6.4 Future Potential Impacts

The Town's overall vulnerability for an extreme temperature event remains moderate. Extreme temperatures are likely to increase in frequency and extremity in the future due to climate change.

5.7 Earthquake

5.7.1 Description

For a description of this hazard, please see Section 5.5 of the main body of the plan.

5.7.2 Hazard Vulnerability

The Town's overall vulnerability for an earthquake is moderate, as documented in their hazard analysis in Section 4.1. According to Figure 5.8 of the main body plan, Madison County has a peak ground acceleration (PGA) Hazard rating of 8-10%g. An earthquake could impact any location within the Town, though historically, the Town has not experienced significant earthquake damages. Earthquakes that damage the Town's critical infrastructure or emergency evacuation routes would result in the most significant impacts to the Town and its residents.

5.7.3 Historical Hazard Occurrences and Damage Estimates

According to the USGS Earthquake Catalog, there are no historical records of earthquakes occurring specifically in the Town of DeRuyter. An earthquake has the potential to cause hundreds of thousands of dollars in damages.

5.7.4 Future Potential Impacts

The Town's overall vulnerability for an earthquake remains moderate due to the lack of warning and moderate impact area associated with this hazard. However, the Town is within an area of light seismic activity. The Town is not likely to experience significant earthquake damages.

5.8 Landslide

5.8.1 Description

For a description of this hazard, please see Section 5.4 of the main body of the plan.

5.8.2 Hazard Vulnerability

The Town's overall vulnerability for landslide is moderate, as documented in their hazard analysis in Section 4.1. The Town of DeRuyter is mapped as an area of low incidence for landslides (Figure 5.6, Appendix A of the main body of the plan). Areas with steep slopes throughout the Town (based on mapped soil units with slopes over 30%) are shown in Figure 1 (Attachment A). Areas with steep slopes are most susceptible to landslides. Steep slopes are present

in many areas of the Town, including Carey Road, E Lake Road, Stanton Road, Fairbanks Road, McClellan Road, Dublin Road, Lincklaen Road, and State Route 13.

5.8.3 Historical Hazard Occurrences and Damage Estimates

The Town experienced a landslide on Carey Road, which caused significant damage to the road. The road was closed to traffic due to safety hazards and the Town is actively working to repair the damage. A landslide has the potential to cause hundreds of thousands of dollars in damages.

5.8.4 Future Potential Impacts

The Town's overall vulnerability for landslide remains moderate. Landslides typically occur on hilly or mountainous landscapes, and are also common in river valleys. They are most likely to occur in areas where they have occurred in the past. Areas with steep slopes such as Carey Road, E Lake Road, Stanton Road, Fairbanks Road, McClellan Road, Dublin Road, Lincklaen Road, and State Route 13 are most likely to be impacted by landslides in the future. One of the Town's mitigation actions was to stabilize the bank of Carey Road where a recent landslide occurred. Once implemented, this action will reduce the risk of future landslides in this location.

5.9 Drought

5.9.1 Description

For a description of this hazard, please see Section 5.9 of the main body of the plan.

5.9.2 Hazard Vulnerability

The Town's overall vulnerability for drought is moderate, as documented in their hazard analysis in Section 4.1. Agricultural areas and properties served by private wells would experience the most significant impacts. The Town does not have a municipal water system. Residents rely on private wells, and may be susceptible to low water yields during a drought. Additionally, a significant portion of the Town consists of agricultural properties, which are

vulnerable to a drought. Agricultural areas are generally located in the valleys along Tioughnioga Creek.

5.9.3 Historical Hazard Occurrences and Damage Estimates

The NCDC reports no specific drought events for the Town of DeRuyter. The Town also did not note any local records of drought events. There are no drought-related damage estimates available for the Town.

5.9.4 Future Potential Impacts

The Town's overall vulnerability for drought remains moderate. Properties that rely on private wells that are vulnerable to supply issues and agricultural areas (located throughout much of the Town generally along Tioughnioga Creek) are most likely to be impacted in the future. Drought events are likely to increase in frequency and magnitude in the future due to climate change.

5.10 Wildfire

5.10.1 Description

For a description of this hazard, please see Section 5.10 of the main body of the plan.

5.10.2 Hazard Vulnerability

The Town's overall vulnerability for a wildfire is moderate, as documented in their hazard analysis in Section 4.1. Undeveloped lands such as forest and open fields and brush lands within the Town are susceptible to wildfires. The Town of DeRuyter contains 2,831 acres of state forest land. The DeRuyter, Mariposa, and Three Springs State Forests are partially located in the Town. State forest lands are shown in Figure 1 (Attachment A). The Town is located in a NYS Forest Fire District designated under 6 NYCRR Part 191.1. Within the Fire District, the NYSDEC may maintain an approved fire protection system, including fire observation stations and other equipment necessary to prevent and extinguish forest fires.

5.10.3 Historical Hazard Occurrences and Damage Estimates

According to Figure 5.14 (Appendix A of the main body of the plan), the Town of DeRuyter experienced 0.4-0.8 wildfires per square mile from 2003 to 2017 according to reports from the NYSDEC. The Town indicated that wildfires were more common in the 1950s, but they have become less frequent. A wildfire has the potential to cause hundreds of thousands of dollars in damages.

5.10.4 Future Potential Impacts

The Town's overall vulnerability for a wildfire remains moderate. Forested and other undeveloped portions of the Town are most likely to be impacted in the future. Wildfires are likely to increase in frequency and magnitude in the future due to climate change.

5.11 Ice Jam

5.11.1 Description

For a description of this hazard, please see Section 5.11 of the main body of the plan.

5.11.2 Hazard Vulnerability

The Town's overall vulnerability for an ice jam is low, as documented in their hazard analysis in Section 4.1. Properties along Tioughnioga Creek and its tributaries are most vulnerable to ice jams.

5.11.3 Historical Hazard Occurrences and Damage Estimates

The U.S. Army Corps of Engineers (USACE) Cold Regions Research and Engineering Laboratory (CRREL) reports no specific ice jam events for the Town of DeRuyter. The Town reports no significant issues with ice jams to date.

5.11.4 Future Potential Impacts

The Town's overall vulnerability for an ice jam remains low. Properties along streams throughout the Town, primarily along Tioughnioga Creek and its

tributaries remain vulnerable to ice jams. The frequency and magnitude of ice jam events may increase due to climate change, however, the Town is unlikely to experience significant damages associated with ice jams given their history with this hazard.

6. 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 (FEMA, 2015).

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:

- Creates safer environments by reducing loss of life and decreasing property damage;
- 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
- Lessens the financial impacts on individuals, communities, and other involved parties (FEMA, 2015).

The Town of DeRuyter currently participates in the NFIP (community ID 361291), and its FIRM(s) became effective on 6/8/1984. The Town joined the NFIP on this same date. NFIP loss claims data were requested from FEMA and a response is pending. According to the County's 2017 HMP, there are no repetitive loss properties in the Town. More current repetitive loss data from FEMA is pending. 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.

7. Mitigation Strategy and Prioritization

7.1 Past, Completed, and Ongoing Initiatives

The Town proposed three mitigation actions in the 2017 Madison County HMP, and the status of each action is summarized in Table 8, below. None of the Town's 2017 mitigation actions were re-included for the 2022 update.

Table 8. Status of 2017 Mitigation Actions Town of DeRuyter				
Project Name	Description	Hazard(s) Mitigated	Lead Agency	Status
Carey Road Culvert Repairs	Build increased drainage capacity of the under-road structure reducing flooding and road erosion during severe storm events.	Flood	Town of DeRuyter	Completed (funded by FEMA HMGP)
Carey Road Streambank Stabilization	Flooding of an unnamed tributary to the Middle Branch Tioughnioga Creek resulted in damages to Carey Road and adjacent homes in the Town of DeRuyter.	Flood, Landslide	Town of DeRuyter	Completed (funded by FEMA HMGP)
South Hill Road Stabilization and Restoration	Flooding eroded roadside ditches resulting in damages to South Hill Road. The project will include the installation of four catch basins with grates, replacement of 400 feet of culvert pipe and repaving of 0.15 miles along South Hill Road creating an underground closed drainage system.	Flood	Town of DeRuyter	Completed (funded by NYSDOT CHIPS and Town budget)

7.2 Proposed Mitigation Actions

The Town proposed three new mitigation actions to be included in the HMP update. These actions are described in Table 9, below and on worksheets included in Attachment A.

Table 9. Proposed Hazard Mitigation Actions Town of DeRuyter									
Action ID	Mitigation Action	Hazard(s) Mitigated	Implementing Agencies (Lead* & Support)	Planning Mechanism	Timeframe	New or Existing Development	Estimated Cost	Funding Source(s)	Priority
DeRuyter T1	Carey Road Bank Stabilization	Landslide	Town of DeRuyter Highway Department*, Madison County SWCD	None	1 year	Existing	\$81,500	NYSDOT - CHIPS, Town Budget	1
DeRuyter T2	Williams Road Culvert Upgrade	Flood	Town of DeRuyter Highway Department	None	5 years	Existing	\$900,000	NYSDOT - CHIPS or Bridge NY; Town Budget	2
DeRuyter T3	Dublin Road Culvert Upgrade	Flood	Town of DeRuyter Highway Department	None	5 years	Existing	\$175,000	NYSDOT - CHIPS; Town Budget	3

7.3 Cost-Benefit Analysis

Each of the Town's proposed mitigation actions were evaluated and prioritized using the STAPLEE cost-benefit analysis described in Section 7.2.3 of the main body of the plan. The Town's STAPLEE worksheet is provided in Attachment A. The STAPLEE analysis considers the following lenses of evaluation: social, technological, administrative, political, legal, economic, and environmental. It also considers the level of overall costs and benefits of the action.

Attachment A

**Figure 1, Mitigation Action Worksheets,
and STAPLEE Worksheet**

Madison County HMP Update Mitigation Action Worksheet

Jurisdiction: Town of DeRuyter

Mitigation Action	
Project ID:	DeRuyter T1
Project Name:	Carey Road Bank Stabilization
Risk/Vulnerability	
Hazard of Concern:	Landslide
Description of the Problem:	A landslide occurred along Carey Road in 2022. The landslide caused undermining of the road, which was closed due to safety hazards. If the bank is not stabilized, more landslides may occur here in the future.
Proposed Action	
Description of the Solution:	Stabilization of the bank will stop further landslides and road damage.

Is this project related to a Critical Facility? ☐ Yes ☒ No

(If yes, this project must intend to protect to the 500-year flood event or the actual worst damage scenario, whichever is greater)

Level of Protection:	High	Estimated Benefits (losses avoided):	Decreased risk of road damage; improved bank stability.
Useful Life:	50+ years		
Estimated Cost:	\$81,500		

Plan for Implementation			
Priority (High, Medium, Low):	High	Responsible Organization:	DeRuyter Town Highway Dept; Madison County SWCD
Desired Timeframe for Implementation:	1 year	Potential Funding Sources:	NYSDOT - CHIPS, Town Budget
Estimated Time Required to Implement:	2 months	Local Planning Mechanisms to be used in Implementation, if any:	None

Three Alternatives Considered (Including No Action)			
	Action	Estimated Cost	Evaluation
Alternatives:	No Action	\$0	No change from current conditions
	Complete engineering study	\$10,000	Starting point to identify bank stabilization options; does not fix critical safety issue. The SWCD is already progressing design.
	Install bank stabilization	\$81,500	Comprehensive solution for landslide issues.

Progress Report (for Plan Maintenance)	
Date of Status Report:	
Summary of Progress:	
Evaluation of the Problem and/or Solution:	

Madison County HMP Update Mitigation Action Worksheet

Jurisdiction: Town of DeRuyter

Mitigation Action	
Project ID:	DeRuyter T2
Project Name:	Williams Road Culvert Upgrade
Risk/Vulnerability	
Hazard of Concern:	Flood
Description of the Problem:	A culvert under Williams Road is undersized and does not adequately convey storm flows. This has resulted in washouts and flooding issues along the roadway.
Proposed Action	
Description of the Solution:	Replace culvert with a bridge crossing to improve hydraulic capacity and reduce flood damages.

Is this project related to a Critical Facility? ☐ Yes ☒ No
(If yes, this project must intend to protect to the 500-year flood event or the actual worst damage scenario, whichever is greater)

Level of Protection:	Medium	Estimated Benefits (losses avoided):	Reduced flood damages to roadways.
Useful Life:	50 years		
Estimated Cost:	\$900,000		

Plan for Implementation			
Priority (High, Medium, Low):	High	Responsible Organization:	Town of DeRuyter Highway Department
Desired Timeframe for Implementation:	5 years	Potential Funding Sources:	NYS DOT - CHIPS or Bridge NY; Town Budget
Estimated Time Required to Implement:	1 year	Local Planning Mechanisms to be used in Implementation, if any:	None

Three Alternatives Considered (Including No Action)			
	Action	Estimated Cost	Evaluation
Alternatives:	No Action	\$0	No change; roads remain susceptible to flood damages
	Replace culvert in-kind	\$100,000	Short-term maintenance action to improve structural resiliency, but does not increase flood flow capacity.
	Replace culvert with bridge	\$900,000	Long-term solution; reduces flood damages by increasing flood flow capacity for crossing.

Progress Report (for Plan Maintenance)	
Date of Status Report:	
Summary of Progress:	
Evaluation of the Problem and/or Solution:	

Madison County HMP Update Mitigation Action Worksheet

Jurisdiction: Town of DeRuyter

Mitigation Action	
Project ID:	DeRuyter T3
Project Name:	Dublin Road Culvert Upgrade
Risk/Vulnerability	
Hazard of Concern:	Flood
Description of the Problem:	An existing culvert under Dublin Road is undersized and does not adequately convey storm flows. This has resulted in washouts and flooding issues along the roadway.
Proposed Action	
Description of the Solution:	Replace culvert with new, larger pipe to better convey flows.

Is this project related to a Critical Facility? ☐ Yes ☒ No

(If yes, this project must intend to protect to the 500-year flood event or the actual worst damage scenario, whichever is greater)

Level of Protection:	Medium	Estimated Benefits (losses avoided):	Reduced flood damages to roadways.
Useful Life:	50 years		
Estimated Cost:	\$175,000		

Plan for Implementation			
Priority (High, Medium, Low):	Medium	Responsible Organization:	Town of DeRuyter Highway Department
Desired Timeframe for Implementation:	5 years	Potential Funding Sources:	NYS DOT - CHIPS; Town Budget
Estimated Time Required to Implement:	1 year	Local Planning Mechanisms to be used in Implementation, if any:	None

Three Alternatives Considered (Including No Action)			
	Action	Estimated Cost	Evaluation
Alternatives:	No Action	\$0	No change; roads remain susceptible to flood damages
	Replace culvert in-kind	\$100,000	Short-term maintenance action to improve structural resiliency, but does not increase flood flow capacity.
	Replace culvert with larger pipe	\$175,000	Long-term solution; reduces flood damages by increasing flood flow capacity for crossing.

Progress Report (for Plan Maintenance)	
Date of Status Report:	
Summary of Progress:	
Evaluation of the Problem and/or Solution:	