Town of Ira Vermont
Local Hazard Mitigation Plan

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With Technical Assistance Provided by the Rutland Regional Planning Commission

RUTLAND REGIONAL PLANNING COMMISSION

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1 Introduction

The impact of expected, but unpredictable natural and human-caused events can be reduced through community planning. The goal of this plan is to provide an all-hazards local mitigation strategy that makes the Town of Ira more disaster resistant.

Hazard Mitigation is any sustained action that reduces or eliminates long-term risk to people and property from natural and human-caused hazards and their effects. FEMA and state agencies have come to recognize that it is less expensive to prevent disasters than to repeatedly repair damage after a disaster has struck. This plan recognizes that communities have opportunities to identify mitigation strategies and measures during all of the other phases of Emergency Management – Preparedness, Response and Recovery. Hazards cannot be eliminated, but it is possible to determine what the hazards are, where the hazards are most severe and identify local actions that can be taken to reduce the severity of the hazard.

2 Purpose

The purpose of this Hazard Mitigation Plan is to assist the Town of Ira, VT in identifying all hazards facing the community and identify strategies to begin reducing risks from identified hazards. Once adopted, the local mitigation plan is not legally binding; instead, it outlines goals and actions to prevent future loss of life and property.

Adopting and maintaining this Local Hazard Mitigation Plan will provide the following benefits:

- Make certain funding sources available to complete the identified mitigation initiatives that would not otherwise be available if the plan was not in place.
- Ease the receipt of post-disaster state and federal funding because the list of mitigation initiatives is already identified.
- Support effective pre- and post-disaster decision making efforts.
- Lessen the Town's vulnerability to disasters by focusing limited financial resources to specifically identified initiatives whose importance has been ranked.
- Connect hazard mitigation planning to community planning where possible.

The community vulnerabilities emphasized and addressed in this plan are:

- Flooding of roads
- Power outages due to thunderstorms, flooding, and snow and ice storms

Ira has one critical facility - the fire station - in the SFHA

3 Community Background

Land Use and Development Patterns

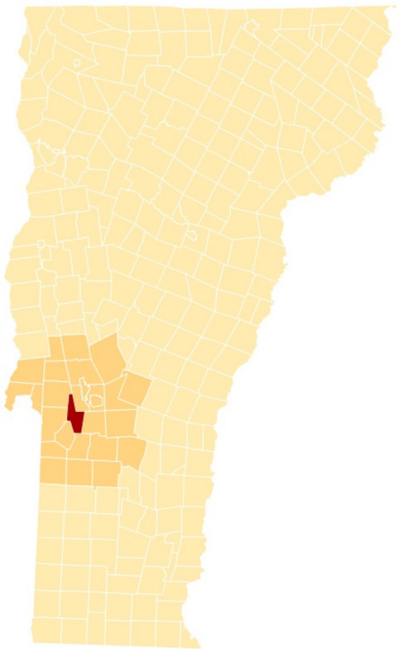
In Ira, the patterns of land use and development seen today closely reflect those which existed two hundred years ago. The town's development reflects an economy which was based, since the town's founding, on agriculture—principally farming, and to a lesser extent, logging.

Early development took place not only in the valleys flanking Ira Brook and the Ira River, but at higher elevations as well. Much of Ira's early development was represented in the establishment of hill farms, and today five of the six remaining operating farms are hill farms.

Historically, development patterns in Ira reflect a healthy respect for significant physical limitations. Much of the town is ringed with high mountain peaks and ridges, which have never been settled.

Historically, there have been two settled areas of town. One is in North Ira, in the Ira River valley, and the other is near the Town Hall, in the Ira Brook valley. Travel from one settled area to the other within town is practically impossible, and can only be accomplished by traveling through abutting towns. The approximately 37 residences in North Ira are serviced by emergency personnel in West Rutland. Emergency personnel from West Rutland also are the first to respond to vehicle accidents on Route 4 and Route 4A and rail incidents in north Ira. The residents of North Ira use the West Rutland shelters in the event of an emergency evacuation of the area.

While there is not a distinct village center in Ira, the town's meeting hall, the town clerk's office, and the Baptist church are centrally located in the Ira Brook valley. This area continues to provide the town's only civic focal point.



Much of the rest of Ira is in its rural state, with farming and logging occurring in accessible areas. Throughout the town's history, less accessible or developable lands have lent themselves to other activities including maple sugaring, hunting, fishing, and recreation.

While throughout the 1800's Ira's economy was supported through sawmills, blacksmith shops, a tannery, a wool-carding mill, a shingle mill, a cheese factory and other industries, today most residents work outside the town. Within town, farms, a used car dealership, and a radio/communications shop now comprise Ira's economic base.

Demographics and Growth Potential

According to current census data (2010) Ira's total population is 432 equaling only 0.7 percent of the region's overall population and making it the 3rd smallest town in the region. While Ira's population is small, growth rates have steadily exceeded historical growth rates of the region. Significant growth is not anticipated within the foreseeable future due to development constraints. Most new development comes in the form of single-family residential construction. The town of Ira sees very few new single family homes constructed in any given year, and has no other types of new construction currently..

Land Features

Ira is located at the northern edge of the Taconic Mountain Range, which greatly influences its landscape. Much of the town consists of steep, rugged terrain that ranges in approximate elevation from 3,000 feet to less than 500 feet.

Ira's two major waterbodies—the Ira Brook and the Ira River, occupy the lower elevation valleys that also contain much of Ira's development and roadways.

Precipitation and Water Features

Precipitation in Ira is typical of the rest of the region. The mountains feed a number of creeks and springs in the valley. The spine of mountains bisecting the town directs precipitation into town separate watershed drainage areas. The Ira Brook and the Ira River have designated floodplains by FEMA.

Water and Sewer Supply

There is no municipal water supply in Ira. Due to the scattered nature of development in Ira, private wells and springs provide the necessary water for residences and town buildings. Ira has limited water resources. Ira residents have had trouble finding reliable groundwater wells, and

during drought many have had to drill new wells.

The topography of Ira is such that the mountainous and mostly wooded areas of town serve to channel precipitation, in the form of runoff, to the lower lying and settled regions in town which are dependent upon such water for residential uses.

Ira does not have a municipal sewage system; so all sewage must be treated through the installation of a state approved private septic system. These systems are also regulated by a town adopted on-site sewage ordinance that was substantially revised in June of 1990. Ira incorporates state standards for acceptable on-site septic disposal.

Transportation
Primary access to the town of Ira is via Route 4A and Route 133, an arterial stretching from West Rutland to Pawlet. There are 7.25 miles of state highways, and 7.44 miles of town highways in Ira.

The condition of highways in Ira is generally adequate for existing demands. Gravel roads are prone to degenerate during the spring "mud season", but with the addition of crushed stone, the occasional impassibility of such roads by passenger vehicles has been minimized. The bridges and culvert within the town are generally good, and on average, 2 or 3 culverts are replaced every year, as needed.

Ira has a total of 11 bridges in its highway network, as well as many large culverts. 3 have a span of 20 feet or more; 8 are less than 20 feet. Of this total, 5 are on the state system. Under new Federal regulations, any bridge 20 feet or over is eligible for Federal funding assistance.

Emergency Management Fire protection is provided by the Ira Volunteer Fire Department, a force of 12 residents. The Ira Fire Department in conjunction with the Vermont Dry Hydrant Program has worked on a water source inventory for the Town. As a result of the survey, two new hydrants have been installed. One hydrant at Martin's, services the upper section of the Cross Road and northern section of the West Rd. A dry hydrant was installed in the Hewett's Pond at the base of White's Hill on Rout 133 years ago and has been supplemented with a new hydrant at Lloyd's Pond closer to the church and town offices. The three hydrants provide well over a million gallons of water which can be accessed year round. The water pulls from Otter Creek Brook and Ira River. The Department purchased a 1984 Pierce pumper in 2004 which has reduced their response time. The department also purchased a 2004 American LaFrance in 2011. Grants have enabled the Department from an ISO rating of 10 to 9.

The Ira Volunteer Fire Department is a member of the Rutland County Fire Mutual Aid System and works most frequently with Ira, West Rutland, Middletown Springs, Tinmouth and Clarendon. The fire trucks are outfitted with mobile radios and the department owns numerous portable radios so communications between members as well as fire mutual aid, State Police, Sheriff's Patrol, Regional Ambulance and State Hazard Communication is possible. The Ira Fire Department often calls for backup to ensure that the resources needed to safely and efficiently respond to an emergency incident are present.

Ira recently received a grant for hydraulic extrication tools (jaws and spreader) which have been put into service. However, Ira may call in Rutland City, West Rutland or Middletown for extrication assistance, as required.

Public safety services are provided by the Vermont State Police, the local constable, and the Rutland County Sheriff's Department. Generally, these services are on an "on call" basis, although the town is covered by regular area patrols.

Ira is a member of the Regional Ambulance Service, Inc., which has six ambulances with trained personnel capable of responding round-the-clock. If all regional ambulances are in use, Poultney and/or Middletown Springs will respond to an emergency in Ira as part of the Mutual Aid agreement held with both towns. In the event of a disaster, Vermont E.M.S. district #10 has a disaster management plan with would involve State Police and as many as 10 ambulances.

The Rutland Regional Medical Center is within 15 miles of Ira, and provides in-patient and out-patient services.

Emergency Management Planning
Ira updates its Local Emergency Operations Plan (LEOP) each year and works proactively to address any identified issues.

4 Planning Process

The Rutland Regional Planning Commission (RRPC) and the Town of Ira coordinated the Local Hazard Mitigation Plan update process. Hazard Mitigation Grant Program (HMGP) funds from FEMA supported this process.

Updating the Plan

RRPC staff discussed updating the plan with town officials in Ira in October 2015, at which time the Select Board appointed the LHMP committee.

A thorough update of data was conducted by RRPC staff. Data sources on past hazard events were incorporated into the Community Hazard Inventory and Risk Assessment section, and local and regional policies/ plans were incorporated into the Hazard Mitigation Strategy section. As discussed in the following section, the plan was also restructured to a single jurisdictional format. RRPC staff revised the plan throughout the planning process, circulating multiple draft plans to committee members and posting drafts on the town and RRPC website.

Local and Public Participation

The hazard mitigation committee meetings were publicly warned in the following locations: Front Porch Forum, RRPC and Town of Ira office bulletin boards, and the RRPC and Town of Ira websites. Each meeting provided an opportunity for public discussion, questions, and comments on the plan.

The first committee meeting was held on November 6, 2015 in Ira at the Ira Town Offices. Participants discussed the purpose and timeline for updating the plan, other groups/individuals that should be aware of the plan preparation, and damages that occurred in town from Tropical Storm Irene. Town maps were reviewed and the town's hazards were ranked according to their probability, impact, and risk level. The committee discussed high risk hazards in further detail. After this meeting a draft plan was developed by RRPC staff and circulated to committee members.

The second ad third committee meetings were held on November 20, 2015 and December 18, 2015, respectively, at the Ira Town Offices. The committee reviewed the updated draft plan and made changes as necessary. The committee discussed and agreed upon the town's mitigation goals. Then committee members discussed the status of each mitigation action from the town's last plan, and identified new mitigation actions for the town. After this second committee meeting, RRPC staff communicated with committee members at two subsequent committee meetings to gather final pieces of information, and the draft plan was finalized. The final draft plan was distributed to the entire committee for their review. The Select Board reviewed and held a hearing on the plan on December 7, 2015.

A public comment period for the draft plan was held from December 14, 2015 to January 5, 2016. The comment period was warned by posting at the town office, website, and other designated spaces in town; the RRPC office and website; and in the Rutland Herald (see Appendix C for notice). The following neighboring towns planning commissions and emergency management directors were invited by email to review and comment on the plan: Middletown, Tinmouth, Clarendon, Ira, Rutland Town, and West Rutland. These organizations were also emailed regarding the public comment period: Rutland Natural Resources Conservation District.

All entities (surrounding towns, town residents, and local organizations) were told to mail, phone in, or email comments to Elysa Smigielski, RRPC, and/or town of Ira. No comments were received.

The draft plan was then submitted to DEMHS hazard mitigation planning staff for review. Required and recommended revisions received from DEMHS were addressed by working with the town's hazard mitigation committee members on an individual basis.

The plan was then submitted to FEMA Region I for review. Upon receiving FEMA's Approval-Pending Adoption (APA) status, the final plan was reviewed by the Selectboard and adopted after the hearing on the same date. The final plan with the local adoption certificate was forwarded to FEMA Region I and the State Hazard Mitigation Officer, and on date final FEMA approval of the plan was granted.

Plan Evolution

A local hazard mitigation plan was originally adopted by the town as an Annex to the Rutland Region All Hazards Mitigation Plan in 2004, which received FEMA final approval in 2004. This plan is a single jurisdictional local hazard mitigation plan.

There has not been a change in the town's mitigation action priorities between this plan update and the 2004 plan. All plans, including this one, have placed flooding mitigation as the highest town priority, as flooding is the highest and most prevalent risk hazard in the town.

The town will incorporate the hazard mitigation concepts and actions from this plan in to their next town plan update, slated for 2017. The Hazard Mitigation Committee is unsure of incorporaton of mitigation actions and concepts from the 2004 plan, since all members of the committee obtained their town positions after 2011 and therefore were not involved in the previous mitigation action plan development.

Recent development in town over the past decade has included the construction of single family homes at a rate of approximately 1-2 homes per year. There has not been any commerical, industrial development. This development has not made the town more vulnerable, since development has not occurred in flood zones or other hazardous areas.

The hazard mitigation actions from 2004 are located in Appendix D.

Additional Resources

In addition to the local knowledge of committee members and other relevant parties, the following documents and resources were utilized in the preparation of this plan:

National Oceanic and Atmospheric (NOAA) National Climatic Data Center's Storm Events Database

National Weather Service (Burlington, VT) Recent Weather Event Summaries

Vermont Department of Environmental Conservation Waste Management Interactive Database

FEMA Disaster Declarations for Vermont

OpenFEMA Dataset: Public Assistance Funded Project Summaries for Vermont

U.S. Geological Survey National Water Information System- Stream Gage Data

"Climate Variability and Socioeconomic Consequences of Vermont's Natural Hazards: A Historical Perspective" by Lesley-Ann Dupigny-Giroux, 2002, Vermont History 70: 19-39.

United States 2000 and 2010 Census

Rutland Herald Archives

Rutland Region All Hazards Mitigation Plan (2012)

State of Vermont Hazard Mitigation Plan (2013)

FEMA Flood Insurance Rate Maps

Relevant Stream Geomorphic Assessments and/or River Corridor Plans

Town plan (2012) & land use bylaws (2010)

5 Community Hazard Inventory and Risk Assessment

What follows is an analysis of local natural hazards and human-caused hazards based upon review of the Hazard Analysis Map produced for the town (see Appendix C), review of existing data, and information provided by local officials and stakeholders. Whenever possible, the issues identified below are represented on the Areas of Local Concern Map (see Appendix D).

Local Vulnerabilities

The vulnerabilities identified in Section 2 of this plan drive this hazard mitigation plan and the town's mitigation strategies, in order to reduce potential losses in the community.

Risk Assessment

The Risk Assessment table below lays out all the hazards identified for the town and
covered in this plan. Each hazard was discussed by committee members and ranked in terms of its Probability and Impact, and then given an overall Risk Level (see table endnotes). This assessment resulted in the categorization of High and Low Risk Level hazards for the town. Following the Risk Assessment table is a detailed discussion of High Risk hazards including tables on Hazard History and Hazard Summary. Note that the Low Risk hazards that are considered to have low incidence and low probability (i.e. Drought, Extreme Temperatures, Earthquakes, Hurricanes and Tropical Storms, Ice Jams, Landslides and Rockslides, Tornadoes, and Wildfires and Forest Fires) in the community are not profiled in detail in this plan. For more detailed information on these hazards, please consult the State Hazard Mitigation Plan. Despite the overwhelming impact that Tropical Storm Irene had on the Town in 2011, tropical storms are not profiled in this plan due to the low incidence and low probability of the high winds that are usually associated with Tropical Storms. If and when Ira is affected by a tropical storm, the effect on the town is flooding, and therefore flooding caused by Tropical Storms is covered in the flooding profile.

Hazard	Probability[1]	Impact[2]	Risk Level[3]
Climate Change	*	*	*
Drought	Low	Low	Low
Earthquakes	Low	Low	Low
Extreme Temperatures	Low	Low	Low
Floods and Fluvial Erosion	High	High	**High**
Hurricanes and Tropical Storms	Low	Moderate	Low
Ice Jams	Low	Low	Low
Landslides and Rockslides	Low	Low	Low
Thunder and Wind Storms/Hail	High	High	**High**
Snow and Ice Storms	High	High	**High**
Tornadoes	Low	Low	Low
Wildfires and Forest Fires	Low	Medium	Low

1 High likelihood of happening: Near 100% probability in any given year.
Medium likelihood of happening: 10% to 100% probability in any given year (at least once in the next 10 years).
Low likelihood of happening: 1% to 10% probability in any given year (at least once in the next 100 years).

2 Minor impact: Isolated occurrences of minor property damage, minor disruption of critical facilities and infrastructure, and potential for minor injuries.
Moderate impact: Occurrences of moderate to severe property damage, temporary shutdown of critical facilities, and/or injuries or fatalities.
Major impact: Severe property damage on a town-wide scale, shutdown of critical facilities, and/or multiple injuries or fatalities.

3 Based on Probability and Impact, is the risk level: High or Low? Risk is defined as the potential for damage, loss, or other impacts created by the interaction of hazards with community assets

High Risk Hazard Inventory*

Climate Change

Climate change is defined by the Intergovernmental Panel on Climate Change as "… a change in the state of the climate that can be identified by changes in the mean and/or variability of its properties, and that persists for an extended period, typically decades or longer. It refers to any change in climate over time, whether due to natural variability or as a result of human activity." The 2014 Vermont Climate Assessment (based on the National Climate Assessment) shows that the average annual temperature in Vermont has increased by 1.3 degrees Fahrenheit since 1960, and 45% of that temperature change took place since 1990. The growing season in the state has lengthened due to warming, along with a shorter freezing period in the winter. Average annual precipitation has also increased 5.9 inches, and again much of that change (48%) has occurred only since 1990.

Looking ahead, it is projected that temperatures in Vermont will rise by another 2 to 3.6 degrees Fahrenheit by the year 2050. Precipitation will continue to increase, particularly during wintertime and in mountainous areas. More weather extremes will occur in Vermont, such as record-breaking high temperatures and high-energy lightning storms. The impacts of these projected trends in Vermont will be more severe natural disasters, increased energy demands, power outages, high stream flows and flooding, stress on trees, changes to agriculture, and changes to recreation and tourism seasons. It is clear that the already felt and future effects of climate change will intensify a variety of other hazards, such as flooding/fluvial erosion, severe thunderstorms, and winter storms.

The town will not be profiling climate change as a high risk hazard due to the present day difficulty of analyzing storm history for climate change trends and for identifying specific examples of climate change. However, the Town understands and appreciates the importance of cataloging weather events in an effort to understand how certain natural hazards may change in their intensity and/or frequency as a result of climate change. The Town acknowledges that by continuing the efforts of compiling a complete storm record for the high risk hazards – flooding, thunderstorms, and snow and ice storms – the Town may, in the future, analyze the presence and effects of climate change within the Town.

Floods and Fluvial Erosion

Flooding is the overflowing of rivers, streams, drains and lakes due to excessive rain, rapid snow melt or ice as well as overflow of banks caused by sudden high water flow due to breaching of dams (both human-made and natural dams caused by beavers or debris build-up). Flooding of land adjoining the normal course of a stream or river has been a natural occurrence since the beginning of time. If these floodplain areas were left in their natural state, floods would not cause significant damage.

Floods can damage or destroy public and private property, disable utilities, make roads and bridges impassable, destroy crops and agricultural lands, cause disruption to emergency services, and result in fatalities. People may be stranded in their homes for a time without power or heat or they may be unable to reach their homes. Long-term collateral dangers include the outbreak of disease, loss of livestock, broken sewer lines or wash out of septic systems causing water supply pollution, downed power lines, loss of fuel storage tanks, fires and release of hazardous materials.

While inundation-related flood loss is a significant component of flood disasters, the more common mode of damage in Vermont is associated with fluvial erosion, streambed and streambank erosion, often associated with physical adjustment of stream channel dimensions and location during flood events. These dynamic and oftentimes catastrophic adjustments are due to bed and bank erosion, debris and ice jams, or structural failure of or flow diversion by human-made structures. An ice jam occurs when the ice layer on top of a river breaks into large chunks which float downstream and cause obstructions (State HMP 2013). The town does not have a high incidence or high probability of ice jams.

As noted in the State Hazard Mitigation Plan, "Flooding is the most common recurring hazard event in the State of Vermont" (2013: 4-7). Several major flooding events have affected the state in recent years, resulting in multiple Presidential Disaster Declarations. From 2003 to 2010, Rutland County as a whole experienced roughly $1.4 million in property damages due to flood events (State HMP 2013). The worst flooding event in recent years came in August of 2011 from Tropical

*Since detailed local information is not available for some historical hazard events, those events are summarized in the Hazard History tables regarding state or countywide impacts.

Storm Irene, which dropped up to 10-11 inches of rain in some areas of Rutland County (State HMP 2013: 4-61). Although the storm was technically a tropical storm, the effects of the storms are profiled in this flooding section, due to the fact that the storm brought only large rainfall and flooding to the town, not the high winds typically associated with tropical storms. This caused most streams and rivers to flood in addition to severe fluvial erosion.

Flooding and fluvial erosion are the greatest risks to the Town of Ira. Because of the steep terrains, the water flows quickly through the numerous rivers and streams. Therefore, there are small floodplain areas and there is high potential for flash flooding – which has caused extensive road washouts in the past.

Fluvial Erosion refers to streambed and streambank erosion, often associated with physical adjustment of stream channel dimensions and location during flood events. The mountainous areas of town are especially vulnerable to this phenomenon.

Floods in Ira encompass seasonal flooding of town roads and front yards. Toppin Rd and VT RT 133 routinely flood in the spring, with water pooling an inch or two. The bridge on VT RT 133 near Goodrick Rd is vulnerable to flooding – due to the sediment buildup beneath the bridge, the water routinely rises to the base of the bridge, and often threatens to flood the bridge.

There are only two structures in town that are within FEMA's mapped special flood hazard area. One is a single family dwelling, and the other is a critical facility – the fire station. Twenty structures lie within the river corridor: 17 are single family homes, and the rest are camps.

Other flooding events in the town typically lead to clogged culverts and to the need for clearing woody debris.

Severe Thunderstorms

Severe thunderstorms can produce high winds, lightning, flooding, rains, large hail, and even tornadoes. Thunderstorm winds are generally short in duration, involving straight-line winds and/or gusts in excess of 50 mph. Thunderstorm winds tend to affect areas of Vermont with significant tree stands as well as areas with exposed property and infrastructure and aboveground utilities. Thunderstorm winds can cause power outages, transportation and economic disruptions, and significant property damage, and pose a high risk of injuries and loss of life. From 2004 to 2010, for thunderstorms that caused more than $200,000 in damage, Rutland County experienced nearly $2 million in property damage. (State HMP 2013: 4-38 to 4-42) Rutland County experienced severe thunderstorms on May 18, 2004 which included large hail (near one-inch diameter) and damaging winds up to ninety miles per hour (National Weather Service).

Hail is a form of precipitation composed of spherical lumps of ice. Known as hailstones, these ice balls typically range from 5–50 mm in diameter on average, with much larger hailstones forming in severe thunderstorms. The size of hailstones is a direct function of the severity and size of the thunderstorm that produces it. (State HMP 2013: 4-68) Much of the hail activity in Rutland County is scattered and varies in intensity. Most areas of the region have been affected by a hail event at some point. Property damage reported from the hail incidents have typically been associated with uprooted trees, downed power lines, and crop damage.

The town is not as vulnerable to thunderstorms/ windstorms as it is to flooding. Typically towns' vulnerability to thunder and windstorms are power outages. The town could be vulnerable to a power outage caused by a thunder/wind storm, however, should a wind event knock down a tree and disrupt power service to the Town Office. Violent windstorms are possible here; Ira is susceptible to high directional winds. Most windstorms result in downed trees, damaged phone and power lines, and crop losses. The town is geared to handle these situations, including back-up power generation capabilities.

Winter Storms

In the Rutland Region, most winter weather events occur between the months of December and March. Throughout the season, winter weather events can include snowstorms, mixed precipitation events of sleet and freezing rain, blizzards, glaze, extreme cold, the occasional ice storm,or a combination of any of the above. Events can also be associated with high winds or flooding, increasing the potential hazard.

Total regional damages due to winter weather events peak at over $1,000,000 per month in January, February, and March. The costs of these storms come in the form of power outages due to heavy snow or ice accumulations, damaged trees, school closings and traffic accidents. From 2002 to 2010, Rutland County experienced $1.1 million in property and crop damages from winter storms (State HMP 2013). There have only been two winter storm related federally declared Disasters in the county (the ice storm of January 1998 – DR 1201, and the severe winter storm of December 2000 – DR 1358). Historically, the winter storm of December 1969 brought record snowfall amounts and snowdrifts to Vermont, and later freezing rain caused prolonged power outages (Dipugny-Giroux 2002: 26).

The town is not as vulnerable to snow and ice storms as it is to flooding. Typically towns' vulnerability to snow and ice storms are power outages and loss of road accessibility. However, the town could be vulnerable to a power outage caused by ice/wet snow accumulation on power lines or trees falling on powerlines due to weight of ice accumulation in a storm, especially if the outage disrupts power service to the Town Office. Also, snow accumulation has not made the town vulnerable to loss of road accessibility. The town's fleet of snow plows has ensured that roads – especially Route 133 – are accessible, even in major snow accumulation events.

Hazard History

Extent Impact

Floods

8.28.2011: Tropical Storm Irene
1.18.2006: Rainfall of 1.5 to 2.5"
10.7.2005: 3- 4 inches of rain.
4.13.2002: 1-3 inches of rain.
12.17.2000: 2.5- 4" of rain.
9.17.1999: 44 mph wind and 5-6" of flooding.
1.19.1996: Flooding due to snow melt and rainfall. $3,641 in damages.
6.28-30.1973: 6 inches of rain and flooding.
3.21.1936: First flood due to rain and snowmelt, plus second flood due to intense rainfall. Statewide damages ~$1 million.
11.3.1927: Statewide flooding. 5-10 inches of heavy rainfall on frozen ground. Statewide damages: $35 million including 1,000+ bridges, hundreds of miles of roads and railroad, and 84 deaths.

Thunderstorms and High Winds

5.29.2012: High winds, 3-5" of rain and 1" hail.
6.8.2011: Winds took down several trees and power lines
8.21.2009: One isolated severe thunderstorm that produced wind damage in the form of downed tree branches.
6.10.2008: High winds
5.10.2007: Thunderstorms and flash flooding
6.12.2007: Thunderstorms and flash flooding
7.6.2007: Thunderstorms and high winds. Damaged trees .
6.19.2006: High winds that blew down trees and power lines
6.6.2005: Thunderstorms. Trees and power lines were blown down
5.20.1998: Thunderstorms and dime size hail.

Winter Storms

12.9.2014: 10-20 inches of snow.
3.12-13.2014: Winds with gusts to 35-40 mph . 8-24 inches snow
12.26.2012: Snowfall rate of 1-2 inches per hour. Accumulations between 6-18 inches.
2.23.2010: 6 to 30" snow
1.2.2010: Snow
12.11.2008: Combined snow and sleet accumulation in central and northern Vermont ranged from 5 to 9

inches along with a glaze coating of ice.
4.15-16.2007: "Nor'icane"—A mixture of snow and rain . winds of 60 to 80 mph. Snowfall totals were generally 4 to 7 inches in the valleys with locally up to a foot along the east-facing slopes of the higher elevations of the Green Mountains. This was a heavy, wet snow that caused numerous power outages, hundreds of downed trees and power lines as well as extremely slick and treacherous roads that resulted in many vehicle accidents.
12.6.2003: 12 and 18 " of snow

Hazard Summary

Flooding
Location: town-wide

Vulnerable Assets: Houses, bridges, culverts,
Extent: Tropical Storm Flooding: Up to 10" of rain (TS Irene)
Riverine Flooding: up to one inch
Flash Flooding: Up to 6"
Fluvial Erosion: data currently unknown
Impact: Up to $3,641 in damages (1996 flooding)
Probability: High

Thunderstorms and High Winds
Location: town-wide
Vulnerable Assets: houses, trees, powerlines, roads
Extent: Golf ball sized hail (1"), high winds (mph unknnown)
Impact: data currently unknown
Probability: High

Winter Storms
Location: town-wide
Vulnerable Assets: houses, trees, powerlines, roads
Extent: Up to 20" of snow. Up to 0.5" ice
Impact: data currently unknown
Probability: High

6 Hazard Mitigation Strategy

The high risk hazards and vulnerabilities identified in the previous section of this plan directly inform the hazard mitigation strategy outlined below, which the community will strive to accomplish over the coming years. The mitigation strategy chosen by the town includes the most appropriate activities to lessen vulnerabilities from potential hazards.

Mitigation Goals

The hazard mitigation committee discussed mitigation goals, and recognized that due to the significant impacts of Tropical Storm Irene in 2011 the town now puts a higher priority on flood mitigation. The committee identified the following as the community's main mitigation goals to reduce or avoid long-term vulnerabilities to identified hazards

Reduce the loss of life and injury resulting from all hazards.

Mitigate financial losses incurred by municipal, residential, industrial, agricultural and commercial establishments due to disasters.

Reduce the damage to public infrastructure resulting from all hazards, especially flooding and fluvial erosion.

Encourage hazard mitigation planning as a part of the municipal planning process.

Encourage the adoption and implementation of existing mitigation resources, such as River Corridor Plans and Fluvial Erosion Hazard Maps, if available.

Recognize the connections between land use, storm-water road design and maintenance and the effects from disasters.

Ensure that mitigation measures are sympathetic to the natural features of community rivers, streams, and other surface waters; historic resources; character of neighborhoods; and the capacity of the community to implement them.

Existing Authorities, Policies, Programs and Resources

The hazard mitigation plan is one of several plans and policies that influence local land use decisions. The town's ongoing and recently completed hazard mitigation authorities, policies, programs, and resources are listed below. These programs illustrate the community's capabilities regarding hazard mitigation, and show the town's commitment to incorporating mitigation into other planning mechanisms. The mitigation planning process is continual, and as new issues arise the town will incorporate new information into local plans and other documents as appropriate.

Town Capabilities

The town of Ira has an annual budget of approximately $300,000. All town personnel is either elected or appointed, save for one paid person – the person who plows the roads. Because all personnel is elected, there is potential for turnover every 3 years. Also, given the fact that Ira is quite small and rural, the town has a difficult time filling all town positions, and has a hard time finding new people to run for positions. Given the size and the limited resources in the town, it is not feasible for the town to hire a town manager

Flooding: The town's Select Board, which acts the role of road crew, is able to handle the current type and level of spring road flooding. However, given the limited resources in the town, the Select Board will not likely be able to handle increased flooding – either increase in frequency or intensity. The town should seek the opportunity to collaborate with RRPC, DEC, ANR, and numerous private funders such as the High Meadows group to increase flood resiliency in the town and increase flood resiliency education to town residents.

Fire protection: The town has a volunteer fire department made up of 10 volunteers. There is high turnover in the department. Also, the fire house is in the Special Flood Hazard Area. The town currently does not have the capacity to address the high turnover in the department. This is compounded by the fact that Ira has a small population, and therefore less people eligible for recruitment to the department. Moving the firehouse to a new, less vulnerable location would take staffing and funding that the town currently does not have. HMGP or EMPG funding could assist the town with making the fire house less vulnerable to flooding.

Vulnerable populations: The town notes that their population is not as vulnerable as most due to the fact that most homes have a generator. Also, there are not any senior living facilities or day care providers in town, reducing the potential for vulnerable populations.

Power loss: Power loss is mitigated by the high rate of personal generator ownership.

Communications: The fire trucks are outfitted with mobile radios and the department owns numerous portable radios so communications between members as well as fire mutual aid, State Police, Sheriff's Patrol, Regional Ambulance and State Hazard Communication is possible. The town would benefit from additional communication facilities, such as increased cell coverage. Communication capabilities should be expanded upon, to alleviate the number of dead zones. This capability may be expanded upon, but is dependent upon future staff and funding resources. The town currently does not have the capacity to address this issue.

Town Policies and Programs that Mitigate Hazards

Municipal Plan: Adopted 2015

Opportunities for Improvemet: The Ira Planning Commission may require RRPC assistance with the Town Plan Update in 2020, and may require RRPC to ensure that the Town Plan is consistent with the LHMP.

Land Use Bylaws: The town does not have zoning.

Opportunities for Improvemet: TThe town may require RRPC assistance for matters that would otherwise be covered by zoning

Local Emergency Operations Plan: Last adopted on April 20, 2016

Opportunities for Improvemet: Town should collaborate with Emergency Management Planners at Rutland RPC on the LEOP update.

Flood Hazard Area Regulations: Adopted June 23, 2008

Opportunities for Improvemet: The town has discussed with the RRPC options related to updating the flood hazard regulations, and should continue to work with RRPC to ensure that the regulations are up to date at all times.

River Corridor Regulations: Not yet adopted

Opportunities for Improvemet: The town should continue to work with the RRPC to discuss options related to this regulation

Road and Bridge Standards: Adopted on February 25, 2013

Opportunities for Improvemet: No improvement needed at this time.

National Flood Insurance Program Compliance

The National Flood Insurance Program (NFIP) is a voluntary program organized by FEMA that includes participation from roughly 20,000 communities nationwide and the majority of Vermont towns and cities. Through floodplain mapping and floodplain management at the municipal level, NFIP participation makes affordable flood insurance available to homeowners, renters, and businesses, regardless of whether they are located in a floodplain.

As a participant in the NFIP, a community must adopt regulations that:

1. Require any new residential construction within the 100 year floodplain to have the lowest floor, including the basement, elevated above the 100 year flood elevation. The community must maintain a record of all lowest floor elevations or the elevations to which buildings in flood hazard areas have been flood proofed;
2. Allow non-residential structures to be elevated or dry flood proofed; and
3. Require anchoring of manufactured homes in flood prone areas.

The town joined the NFIP in 1988. Currently there are 2 structures in town located in the Special Flood Hazard Area, and both of those structures are covered by flood insurance. One of those structures is the fire station, a critical facility. There are no structures in town deemed by FEMA to be repetitive loss properties. The town's EMD Bob Toppin enforces NFIP compliance.

The town has discussed the following actions as possible actions the Town could take to continue NFIP compliance:

1. Distribute literature to residents on flood insurance
2. Adopt river corridor protection language in to the flood hazard regulations bylaw.
3. Ensure that flood plain and river corridor maps are kept up to date, by requesting mapping assistance from the RRPC.

Other Incentives for Flood Mitigation

Vermont's Emergency Relief Assistance Funding (ERAF) provides state funding to match federal Public Assistance after federally-declared disasters. Eligible public costs are generally reimbursed by federal taxpayers at 75%, and the State of Vermont will contribute an additional 7.5% toward the costs. For communities that take specific steps to reduce flood risk the State will increase its contribution to 12.5% or 17.5% of the total cost:

12.5% funding for eligible communities that have adopted four mitigation measures:

1. National Flood Insurance Program participation;
2. Town Road and Bridge Standards;
3. Local Emergency Operations Plan; AND
4. Local Hazard Mitigation Plan

17.5% funding for eligible communities that also have:

1. FEMA's Community Rating System (CRS) participation; OR
2. Fluvial Erosion Hazard (FEH) or other river corridor/floodplain protection bylaw that meets or exceeds the Vermont Agency of Natural Resources FEH model regulations and scoping guidelines.

The town currently qualifies for 7.5% ERAF funding since it has completed these actions: Adopted the 2013 road and bridge standards, adopted the town's local emergency operations plan, and joined the National Flood Insurance Program.

Mitigation Actions and Projects

The town's hazard mitigation committee discussed the mitigation strategy, reviewing projects from the last plan and considering new actions for the town to pursue from the following categories:

1. Prevention: Land use bylaws, open space preservation, building codes, etc.
2. Property Protection: Acquisition, relocation, elevation, flood-proofing, etc.
3. Public Education & Awareness: Website with maps, public outreach programs, real estate disclosures, etc.
4. Natural Resource Protection: Green storm water infrastructure, low impact development bylaws, protection of steep slopes, etc.
5. Emergency Services Protection: Protect critical facilities, warning capabilities, and infrastructure; generators for critical facilities; etc.
6. Structural Projects: Culvert upsizing, bridge upsizing, floodplain restoration, and stream embankment armoring.

The following mitigation actions and projects are future mitigation strategies identified for the community. Note that the municipality will make every effort to maximize use of future Public Assistance Section 406 Mitigation opportunities when available during federally declared disasters.

Mitigation Action Priority Scoring

Each potential project was considered regarding the benefits it would provide to the town, and the costs required for implementation– resulting in an overall Benefit-Cost Score which is included in the mitigation actions and projects table, with the highest scores indicating the most benefit and least cost. Mitigation actions and projects proposed in this plan should undergo more rigorous benefit-cost analysis by the town before action is taken.

Also, the priority levels indicated in the Mitigation Actions and Projects table take in to account the scores in the Benefit Cost Analysis table, as well as the determination by the hazard mitigation committee of the need for the project. The Benefit Cost analysis table was therefore used as a tool to analyze, discuss, and determine the need and suitability of each project. Therefore, a project may have received a low scoring number in the table, but the committee may have deemed the project important and granted it a high priority.

A project deemed to have a high priority is a project that the hazard mitigation committee identified as: physically possible in the timeframe noted, financially possible with the funding mechanisms noted, and of high importance with regard to hazard mitigation. Projects scored with a medium priority typically were missing one of the attributes identified above, and projects scored as low priority were missing enough attributes to be deemed either low possibility or of low importance.

Worksheet for Calculating Each Mitigation Action's Benefit to Cost Ratio

Benefits

Benefits include protection of life and property; increase in public safety; and damage reduction / prevention.

3 = fulfills all benefits listed above
2 = mostly fulfills benefits listed above
1 = fulfills only 1 or 2 benefits listed above

Cost

3 = less than $75,000
2 = $75,000- $500,000
1 = Over $500,000

Implementation

Consider the technical feasibility as well as the social/political acceptance of the project.

3 = 6 months or less
2 = 6 months to a year
1 = over a year

Mitigation Actions and Projects

Vulnerability: Flooding of Bridges and Low Lying Areas

Culvert replacement on West, Cross, and Birdseye Road Roads. One culvert per road will be replaced in the 2017 field season. The culverts will be upsized, so as to allow for greater water passage capacity, and to reduce the occurrence of water flooding the roads

Who: Select Board. When: May 2017-September 2018 How: VTrans Structures Grant, HMGP
Priority: High

Ensure New Development will not be Vulnerable to Flooding or Erosion.
This includes adopting State River Corridor Protection Language

Who: Planning Commission. Select Board When: 2018-2019 How: HMGP Priority: High

Table of the Benefit Cost

Project	Benefits *Benefits include protection of life and property; increase in public safety; and damage reduction / prevention.* 3 = fulfills all benefits listed above 2 = mostly fulfills benefits listed above 1 = fulfills only 1 or 2 benefits listed above
Culverts	3
River Corridor Protection	3
EOC Generator	2
Kitchen Exhaust in EOC	2
EOC Repairs	2

Vulnerability: Power Outages to Homes and Critical Facilities

Generator for Town Hall. The town hall is Ira's emergency shelter. A generator will keep the facility heated and operable in times of power outages.

Who: Select Board, Planning Commission When: 2018 -2019 How: HMGP
Priority: High

Exhaust system for EOC kitchen. Currently the town cannot use the kitchen facilities in the Town Hall, which serves as the town EOC, because the kitchen does not have an exhaust system.

Who: Select Board, Planning Commission When: 2021 -2023 How: EMPG
Priority: Medium-High

Repairs to EOC building. The Town Hall, or EOC, needs the following repairs in order to function at its utmost capacity: handicap access, heat, second egress from the upstairs, electric, and sprinklers.

Who: Select Board, Planning Commission When: 2018-2021 How: EMPG
Priority: Medium-High

Analysis for the Mitigation Actions

Cost 3 = less than $75,000 2 = $75,000- $500,000 1 = Over $500,000	**Implementation** *Consider the technical feasibility as well as the social/political acceptance of the project.* 3 = 6 months or less 2 = 6 months to a year 1 = over a year	**Score**
3	3	9
3	3	9
3	3	8
3	3	8
1	1	4

7 Plan Maintenance Process

This hazard mitigation plan is dynamic. To ensure that the plan remains current and relevant, it is important that it be monitored, evaluated, and updated periodically.

Monitoring and Evaluation

The plan will be evaluated and monitored annually at an April Selectboard meeting along with the evaluation of the town's Local Emergency Operations Plan (LEOP). The town Emergency Management Director (EMD) will lead this effort. This meeting will allow the Selectboard and EMD, along with the public, to monitor the town's progress in implementing mitigation actions, identify future activities, and update the plan as needed; as well as evaluate the plan by discussing its effectiveness at accomplishing the mitigation goals identified in it. A large component of this meeting involves having the Selectboard and EMD check in with the lead agencies on each of the identified mitigation actions in this plan to fill out the Mitigation Action Tracker Table below in an effort to monitor the progress made on each project.

Updating

The State Hazard Mitigation Officer is available to work with the town on updating its plan. Town officials will work to incorporate elements of this hazard mitigation plan into other local planning mechanisms, such as the municipal plan, zoning regulations, flood hazard bylaws, etc. The mitigation actions will be mentioned in these aforementioned plans, and the Planning Commission and Selectboard will ensure that the Town Plan and Zoning bylaws do not negate the mitigation actions of this plan. This plan will be thoroughly updated at a minimum every five years in accordance with the following procedure, which will include revision of all aspects of the plan:

The Selectboard will appoint the EMD to convene a meeting of the hazard mitigation committee. The EMD will chair the committee, and other members should include local officials such as Selectboard members, fire chief, zoning administrator, constable/police chief, road commissioner, Planning Commission members, health officer, as well as representatives of other organizations such as businesses, historical society, etc.

Data needs will be reviewed by the committee, data sources identified, and responsibility for collecting information will be assigned to members.

RRPC planners will coordinate with the planning commission and select board when the town rewrites its town plan. RRPC planners will ensure that the mitigation actions from this plan are referenced in the town plan.

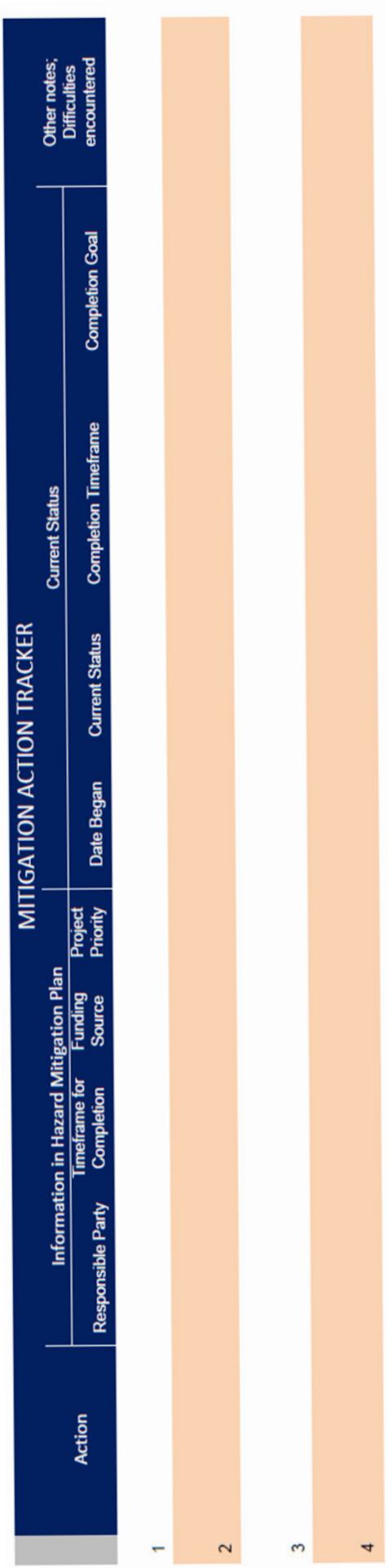
Continued Public Participation

Maintenance of this plan and implementation of the mitigation strategy will require the continued participation of local citizens, agencies, neighboring communities, and other organizations. To ensure that all relevant parties have the opportunity and means to participate in the planning process, the town will take the below measures to increase citizen participation in hazard mitigation.

The plan will be posted on the town and RRPC websites, with directions to reach out to the town Select Board, town EMD, or RRPC planners with comments or questions.

The Mitigation Actions will be reviewed at Town Meeting, as a way to educate the residents on the hazard mitigation plan and to garner support for the budget for mitiation actions.

Mitigation Action Tracker Table



MITIGATION ACTION TRACKER									
	Action	Information in Hazard Mitigation Plan				Current Status			Other notes; Difficulties encountered
		Responsible Party	Timeframe for Completion	Funding Source	Project Priority	Date Began	Current Status	Completion Timeframe	Completion Goal	
1										
2										
3										
4										

APPENDIX A- Certificate of Adoption

CERTIFICATE OF ADOPTION
Town of Ira, Vermont
Selectboard

A Resolution Adopting the Town of Ira, Vermont Local Hazard Mitigation Plan

WHEREAS, the Town of Ira has worked with the Rutland Regional Planning Commission to identify natural and human-caused hazards, analyze past and potential future damages due to disasters, and identify strategies for mitigation of future damages; and

WHEREAS, the Town of Ira, Vermont Local Hazard Mitigation Plan analyzes hazards and assesses risks and vulnerabilities within the community; and

WHEREAS, the Town of Ira, Vermont Local Hazard Mitigation Plan recommends the implementation of actions specific to the community to mitigate against damage from hazard events; and

WHEREAS, the Public Safety Director will be responsible for annually monitoring and evaluating the Plan, and updating this Plan at least every five years; and

NOW, THEREFORE BE IT RESOLVED that the Town of Ira adopts the Town of Ira, Vermont Local Hazard Mitigation Plan.

Duly adopted this 27th day of March 2017.

Chair of Selectboard

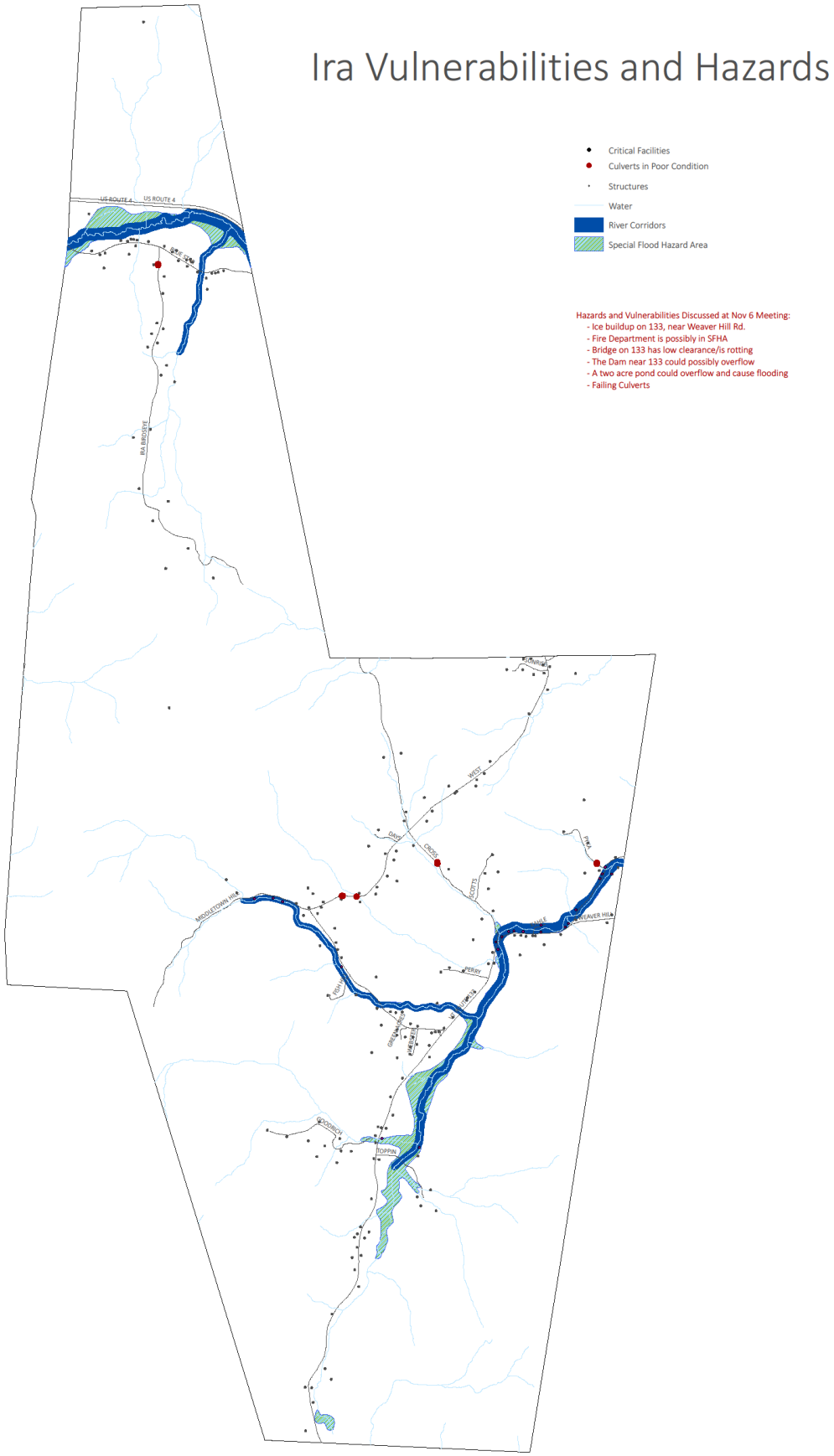
Member of Selectboard

Member of Selectboard

ATTEST:

Town Clerk

Appendix B: Local Hazards and Vulnerabilities Map



NOTICE OF PUBLIC COMMENT

The Town of Ira is in the process of drafting and updating its Local Haz ard Mitigation Plan, a plan which will make the Town eligible to apply for Hazard Mitigation planning and equipment grants from FEMA. A public comment period on the draft plan is being held from December 14th, 2015 thru January 5th, 2016.

The Committee has a draft plan ready for public comment, and it may be viewed in paper form at the Ira Town Offices and the Rutland Regional Planning Commission office. It may also be viewed online at:
The Town of Ira webpage: http://www.townofira.com/
The Rutland Regional Planning Commission webpage: www.rutlandrpc.org

Comments on the plan may be submitted to:

Elysa Smigielski, Rutland Regional Planning Commission
Email: elysa@rutlandrpc.org
Phone: 802 775 0871
Mail: PO Box 965, Rutland VT 05702

Karen Davis, Ira Town Clerk
Email: iraclerk@vermontel.com
Phone: 802 235 2745
Mail: 53 West Rd, Ira VT 05702

Appendix D: Mitigation Actions from the 2004 Plan

Incorporate proposed strategies into Annual Budget and Capital Improvement Plan

Status: In progress

Complete the upgrading of town culverts and expansion of drainage ditches

Status: Completed a culvert inventory in summer of 2015. Upgraded some culverts in 2014, upgraded 3 in 2015

Rebuild/resurface worst sections of Birdseye Road, Weaver Hill Road, Pyka Road, West Road, Goodrich Road, Toppin Road.

Status: In progress.

Examine current Town Plan and ensure that identified hazard areas and needed strategies are addressed

Status: Completed

Adopt a policy regarding standards for development roads before adopting them

Status: Completed

Adopt minimum sight distance and minimum separation requirements for driveways

Status: Completed

Follow recommendations in SGAs and Poultney River Corridor Plan to address fluvial erosion hazards. Create Fluvial Erosion Hazard Zones

Status: In progress.

**** Please note that the priority scores for these actions are not shown here, as the priority ranking system from the 2004 plan is not compatible with the ranking system used in this plan.***