TOWN AND VILLAGE OF HYDE PARK, VERMONT

LOCAL HAZARD MITIGATION PLAN

2015 – 2020

FEMA Approval Pending Adoption: September 23, 2015
FEMA Formal Approval: November 19, 2015
Hyde Park Selectboard Adopted: October 8, 2015
Hyde Park Trustees Adopted: October 14, 2015
Plan expires: November 19, 2020

This Plan was developed by the Town and Village of Hyde Park, with assistance from the Lamoille County Planning Commission. The Plan covers the municipalities of the Town of Hyde Park (Town) and the Village of Hyde Park (Village).
1.0 Introduction

The impact of expected, but unpredictable, natural and human-caused events can be reduced through community planning. The goal of this multi-jurisdictional Local Hazard Mitigation Plan for the Town and Village of Hyde Park, Vermont (Plan, or LHMP) is to provide an all-hazards local mitigation strategy that makes the community of Hyde Park 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. Based on the results of previous recovery efforts nationwide, 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.

Hazard Mitigation Strategies and Measures alter the hazard by eliminating or reducing the frequency of occurrence, avert the hazard by redirecting the impact by means of a structure or land treatment, adapt to the hazard by modifying structures or standards, or avoid the hazard by stopping or limiting development and could include projects such as:

- Flood-proofing structures
- Tying down propane/fuel tanks in flood-prone areas
- Elevating furnaces and water heaters
- Identifying and modifying high traffic locations and routes
- Ensuring adequate and safe water supply
- Elevating structures or utilities above flood levels
- Identifying and upgrading undersized culverts
- Proactive land use planning for floodplains and other flood-prone areas
- Road maintenance and construction to current best practices and standards
- Ensuring critical facilities are safely located
- Buyout and relocation of structures in harm’s way
- Establish and enforce appropriate building codes
- Inform and educate the public

1.1 Purpose

The purpose of this Local Hazard Mitigation Plan is to assist the Town and Village of Hyde Park (Hyde Park) in recognizing hazards facing their community and identifying strategies to begin reducing risks from acknowledged hazards.

Hyde Park strives to be in accordance the strategies, goals, and objectives of the Vermont State Hazard Mitigation Plan, including an emphasis on proactive pre-disaster flood mitigation for public infrastructure, good floodplain and river management practices, and fluvial erosion risk assessment.
initiatives.

Previous Hyde Park Hazard Mitigation Plans were developed as an annex to the Lamoille County Multi-Jurisdictional All-Hazards Mitigation Plan. This plan is intended to be a “unified” multi-jurisdictional plan for the Town and Village of Hyde Park. While the Village is a political entity with a legislative body located within the Town of Hyde Park, due to shared resources, responsibilities, and geographic boundaries, there is a clear advantage for the Village and the Town of Hyde Park to share a multi-jurisdictional Hazard Mitigation Plan.

1.2 Community Profile

Located in east-central Lamoille County, Hyde Park is the Shire Town of the county, covering approximately 39 square miles. Hyde Park is predominantly a rural community, with a large area of town zoned for 10 and 27 acre lots, designed to preserve open space. The town has two villages: the incorporated Village of Hyde Park and the village of North Hyde Park (not incorporated). The Village of Hyde Park is recognized as an autonomous municipality under Vermont statute, governed by a Board of Trustees. However, like many other incorporated Villages in the state, it shares most public services and administrative functions with the town. Hyde Park abuts Eden to the north, Johnson to the west, Morristown to the south and Wolcott to the east. By car, it is located approximately an hour from the City of Burlington and forty-five minutes from the state capital, Montpelier.

There are more than 70 miles of roadway in town: 9.5 are state highway, 13.6 are Class 2, 47.6 are Class 3 and there are 8.8 miles of Class 4 (not maintained for year-round travel). The town highway maintenance garage is located within the Village of Hyde Park on Vermont Route 15. It occupies the lot adjacent to the Municipal Offices. The two state highways in town – Route 100 and Route 15 – are maintained by the Vermont Agency of Transportation, District 8 (headquartered in St. Albans). Route 100 is Vermont’s primary central north-south arterial; Route 15 is the primary northern tier east-west arterial. Hyde Park relies on the State of Vermont to maintain these highways. Town owned roads are funded, managed, and maintained by the Selectboard.

According to the 2010 Census, Hyde Park had a population of 2,954 residents, which is approximately 12-percent of the County total. Of this population, the Census estimates that 462 residents (15.6-percent) lived within the incorporated Village of Hyde Park. Although Hyde Park experienced rapid growth between 1970 and 2000, growth slowed to 3.8% between 2000 and 2010. Census data indicates there are 1,372 housing units in Hyde Park, more than 83-percent of which are owner-occupied. During the update process for this plan, it was noted that no substantial changes in development patterns have occurred in Hyde Park that would affect vulnerability or mitigation measures. Hyde Park has regulations in place to prohibit development in the flood-prone areas; infill development and new housing is encouraged along the VT 15 and VT 100 corridors and in both village areas, away from the floodplains. Accordingly, the mitigation strategy is focused on the issues of greatest concern to both the Town and Village.

The joint Hyde Park Municipal Offices are located just west of the intersection of VT 15 and VT 100 in the Village of Hyde Park. The Town is governed by a five-member Selectboard, elected to staggered terms at the annual Town Meeting in March. The Village is governed by a 5-member Board of Trustees. Both the Town and Village of Hyde Park share a jointly-appointed, five-member Planning Commission. Other town business is coordinated by an appointed Town Administrator. The Village maintains a Village General Manager.
There are five utilities which provide electric service in Hyde Park. The Village owns and runs the Hyde Park Village Water and Light Department, which serves the central and eastern portions of Hyde Park. Also providing electric service in Hyde Park are: the Morrisville Water and Light Department (serving the eastern portion), Vermont Electric Cooperative (serving the north central portion), Green Mountain Power (serving a very small area on the extreme north western border), and Hardwick Electric Department (serving a small area in the eastern corner). There are two hydro-power producing installations in the town: the Sanders Plant, owned by the Morrisville Water and Light Department on the Green River Reservoir, and the Woodside Plant on the Gihon River.

The Village of Hyde Park developed a public water system following a devastating fire in 1910. Both the Village of Hyde Park and North Hyde Park are serviced by public water systems. The Village of Hyde Park is serviced by the Hyde Park Water System, with 230 connections and a 205,326 gallon storage capacity. This supply supports a network of 24 pressurized hydrants for fire response within the Village limits. North Hyde Park is serviced by a separate public water system (Hyde Park Fire District #1), with 95 service connections and a storage capacity of 60,000 gallons. Eight pressurized hydrants are connected to this system. Outlying areas of town without access to pressurized hydrants may be serviced by one of twenty dry hydrants. A sewage disposal leach field system was put into operation in 1979. The septic system has two leach field areas. Leach field #1 is located south of Morey Road above Centerville Brook. Leach field #2 is located outside the Village boundary southwest of Depot Street.

There are three levels of law enforcement in Hyde Park: the town’s elected Constables, the Lamoille County Sheriff’s Department (LCSD) and the Vermont State Police. The town relies on the LCSD as its primary police protection, which is augmented by the services of the State Police. The LCSD dispatch office is located on Main Street in the Village. LCSD employs 24 full time and 14 part time staff. LCSD operates 21 vehicles, 12 of which are four-wheel drive; of these 12 four-wheel drive vehicles, two are “Humvee” (HMMWV) and one is an incident command truck which is shared with Washington and Franklin Counties.

Hyde Park is served by two fire departments: Hyde Park Fire Department (HPFD) and North Hyde Park/Eden Fire Department (NHP/EFD). Hyde Park is served by 20-member personnel who rotate on-call status, and are paid by the hour for emergency calls. They have two pumper engines (1500 GPM and 1250 GPM), one 2000 gallon tanker, and one 4-wheel drive brush fire truck. Equipment includes breathing apparatus, portable tanks and pumps, Jaws of Life, air bags, gas meter, and other standard equipment.

Hyde Park is served by the Northern Emergency Medical Service, which is also the primary ambulance service provider for other nearby towns (Eden, Belvidere, Waterville, and Johnson). They have 11 full time and 10 per diem emergency responders. Unusual in Vermont, they have near full time paramedic coverage in addition to serving as the regional critical care non-emergency transport provider. They currently have 3 ambulances, one of which is 4-wheel drive capable.

Primary medical care is provided by Copley Hospital in Morrisville— a 25-bed treatment center servicing the community for acute, outpatient and long-term care. More specialized services are available in Burlington and Berlin, Vermont, and Hanover, New Hampshire. Other outpatient care is available at community clinics available in neighboring towns.

In the event of an emergency, Hyde Park has emergency shelters located at the Hyde Park Elementary
School, North Hyde Park/Hyde Park Fire Station and Lamoille Union Middle/High School.

Hyde Park has an appointed Local Emergency Management Director (EMD) and Local Emergency Management Coordinator (EMC) who work closely with the Fire Department, Rescue Squad, Selectboard, and local Road Foreman. The EMD is the first point of contact identified in the Local Emergency Operations Plan, a document that is updated annually and includes information such as: Points of Contact; Shelter Info; Hazardous Sites; Vulnerable Populations; mutual aid resources; NIMS information; and important forms to be used during an emergency. Hyde Park’s LEOP was most recently adopted in April 2014.

Hyde Park has zoning, subdivision, and flood hazard regulations administered by the appointed Zoning Administrator. As of this writing, the Village and Town regulations are currently being incorporated into Unified Zoning Bylaws with emphasis on new development patterns, strengthened flood hazard regulations, and fluvial erosion protections that mirror efforts happening at the State level. The unified Hyde Park Comprehensive Development Plan 2012 – 2017 was most recently amended and adopted December 13, 2012. The plan is valid for five years. The Plan addresses flood resiliency and emergency preparedness in many places, including a description and proposed implementation strategies in regards to riverbank management, land use, energy, transportation network upgrades, hazard mitigation grant opportunities, and changes to flood hazard regulations to decrease risk of flooding.

2.0 Planning Process Overview

The previous Hyde Park Hazard Mitigation Plan was adopted by the Town of Hyde Park on December 13, 2012, as an “annex” to the multi-jurisdictional All-Hazards Pre-Disaster Mitigation Plan adopted by the Lamoille County Planning Commission in 2012.

Since the last plan was adopted and approved by the Federal Emergency Management Agency (FEMA), much of Vermont was hit hard by Tropical Storm Irene in August 2011, resulting in the largest, most damaging and costly flood to Vermont since 1927.

The August 2011 event is considered to be a “130 year” flood event. Although the Town and Village of Hyde Park were mostly spared from the damages of Tropical Storm Irene, there was another severe rain and flood event in April 2011, which resulted in severe damages locally. The back to back storms of 2011 changed the way our communities and the State of Vermont view natural disasters, handle the recovery aftermath, and plan for future disasters.

FEMA in 2013, under a new “National Mitigation Framework”, has also issued updated guidance for local hazard mitigation planning. Vermont’s ongoing recovery efforts and FEMA’s new mitigation framework both focus on strengthening community “resilience” – to not only understand and reduce risks of future events, but to also empower communities to recover more quickly and effectively when disasters occur.

The State of Vermont recently enacted new Emergency Relief and Assistance Fund (ERAF) rules, effective October 2014, that provide additional matching funds for federal disaster relief under FEMA’s Public Assistance Program. To qualify, municipalities must adopt updated bridge and culvert standards, participate in the National Flood Insurance Program, adopt a local emergency operation plan, and adopt a local hazard mitigation plan approved by FEMA.
Under changes to state planning law (24 V.S.A. Chapter 117), as of July 2014 all municipal plans must include a “flood resilience” element, addressing both flooding and fluvial erosion hazards. This element may reference and incorporate a locally adopted and FEMA approved hazard mitigation plan.

Vermont’s Department of Emergency Management and Homeland Security (DEMHS) released the State’s Hazard Mitigation Plan in November 2013. The State’s HMP Plan serves as a source of information and guidance for local jurisdictions in completing their own Hazard Mitigation Plans, identifying all hazards facing their community, and establishing strategies to begin reducing risk from identified hazards. The State plan and available guidance from FEMA provide the framework for this update. This plan represents an update of the previous Hyde Park Annex, as a standalone, multi-jurisdiction hazard mitigation plan that builds upon previous mitigation plans and augments the Hyde Park Town Plan adopted December 13, 2012.

This plan reflects local priorities for hazard mitigation, as determined from the community planning process, and best available federal, state, and local information.

2.1 Planning Process and Public Participation

The planning process resulting in this update was part of a FEMA-funded Statewide Pre-Disaster Mitigation grant, provided in order to:

- Strengthen community involvement in hazard mitigation planning;
- Better incorporate social and economic considerations;
- Identify and address manmade as well as natural hazards; and
- Better integrate local comprehensive and hazard mitigation planning.

The process followed in developing the plan has been as important as the plan itself, by actively seeking public input to identify hazards and community vulnerabilities, and local actions to be taken to reduce and mitigate known hazards. The four parts of the planning process included:

- **Public Involvement** - to receive and consider community input from diverse stakeholders.
- **Risk Assessment** - to estimate the potential frequency and magnitude of hazards and their potential impacts on both the built environment and the local community.
- **Mitigation Strategies** - to develop goals, objectives and strategies aimed at mitigating future disaster losses that are cost-effective, technically feasible, and environmentally sound- and timed to allow for strategic investment of scarce resources.
- **Implementation and Monitoring** - to identify, assign and schedule priority implementation tasks, and to monitor their progress over time.

An initial Hazard Mitigation Plan kick-off meeting was held to gather public input into this update of the hazard mitigation plan. The Lamoille County Planning Commission (LCPC) coordinated the Hyde Park LHMP process. The initial kick-off meeting was held on December 10, 2013 at the Hyde Park Municipal Office to explain the planning process and collect stories on the history of hazards in the community. Meeting notices were mailed to Selectboard members, Village Trustee members, Planning Commission, Town Administrators, Road Foremen, School District officials, Emergency Management Directors, town clerks, DEMHS, and the Agency of Natural Resources. Email notice was also provided to the Local Emergency Planning Committee (LEPC) and other individuals who had expressed interest or have a
vested interest in the project. A broader effort to increase attendance and participating was also made through connections with various organizations serving the larger community. The Division of Emergency Management and Homeland Security discussed the role of a hazard mitigation plan and federal grant programs.

Following the initial kick-off meeting there were multiple meetings to provide more technical information on local hazards, and identify priority hazards and possible mitigation strategies. Hyde Park regularly participates in the LEPC 11 meetings, which may review and provide input to the LHMP update process. LCPC staff met with Town and Village staff on October 29, 2014, to identify and discuss possible mitigation strategies. Village Trustees and Town Selectboard meeting were held November 12, 2014, and November 13, 2014, respectively, to review the draft plan and provide another opportunity for public input. The draft plan was also made available for public review and comment through the Hyde Park Village and Town municipal offices, on the Hyde Park shared Village and Town website, at the LCPC offices, and on LCPC’s website. The overall process involved multiple planning meetings; reviewing past hazard mitigations plans; reviewing and updating selected hazards, including the update of hazard maps and figures; and determining the status of previous mitigation action items and creating new mitigation action items in accordance with new or developing threats.

This approach follows the Federal Emergency Management Agency (FEMA) Hazard Mitigation Protocol:

- Gather initial available data
- Gather additional relevant data
- Analyze information and all data according to FEMA Hazard Analysis Protocol
- Produce draft HMP with recommendations and supporting data
- Obtain feedback from the Committee members
- Prepare the final HMP
- Obtain public comments and suggestions
- Incorporate comments and recommendations
- Adopt the plan
- Obtain FEMA approval

During the development of this Plan, Hyde Park followed these six steps in the Risk and Vulnerability Analysis:

1. Determine past hazards.
2. Determine possible future hazards.
3. Determine likely hazards.
4. Determine community vulnerability (human and economic) for each hazard. Each identified hazard was analyzed with respect to the following criteria:
   a. Probability of occurrence
   b. Effect of the potential disaster on people and property
   c. Predictability of the hazard
   d. Frequency of occurrence
   e. Speed of onset of the potential disaster
   f. Duration of the disaster
   g. Scope and intensity of the potential disaster
   h. Controllability of the incident
i. Protective action options

5. Determine any in-place or planned hazard reduction or mitigation efforts.
6. Make recommendations.

The Hyde Park Hazard Mitigation Planning Committee was tasked with the development of the Hyde Park Hazard Mitigation Plan. The goal of the committee was to provide a comprehensive review of the previous Hazard Mitigation Plan and work together to update all pertinent information. Representatives from the Hyde Park Hazard Mitigation Committee are listed below (Figure 1) and represent a number of local town departments and agencies, and private sector partners. Each member of the committee was tasked to provide updated information for parts of the plan that pertained to their department or agency’s purpose.

Figure 1: Hyde Park Hazard Mitigation Committee Members

<table>
<thead>
<tr>
<th>Committee Member</th>
<th>Title/Agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ron Rodjenski</td>
<td>Town &amp; Zoning Administrator/Town of Hyde Park</td>
</tr>
<tr>
<td>Carol Robertson</td>
<td>General Manager/Village of Hyde Park</td>
</tr>
<tr>
<td>Ed Webster</td>
<td>EMC &amp; Chief/Hyde Park Town Fire Department</td>
</tr>
<tr>
<td>Brad Carriere</td>
<td>EMD/Village and Town of Hyde Park</td>
</tr>
<tr>
<td>Mike Dubie</td>
<td>Foreman/Hyde Park Highway Department</td>
</tr>
<tr>
<td>Robert Moore</td>
<td>Regional Transportation Planner/Lamoille County Planning Commission</td>
</tr>
</tbody>
</table>

Since the adoption of the previous plan in 2012, staff from LCPC and the town remained involved in the plan maintenance process through communication and support in the regular Local Emergency Planning Committee 11 (LEPC 11) meetings, participation in emergency response trainings and exercises, and actual hazard/disaster response and post event evaluation.

2.2 Planning Process and Neighboring Communities

Neighboring communities have been encouraged to provide input into the development of this plan and review of a draft plan. The hazard mitigation plan kick-off meeting in December 2013 included representatives from five communities, Cambridge, Hyde Park, Johnson, Stowe, and Wolcott. This meeting allowed each town’s representatives to view hazard and floodplain maps for each town as well as to hear from one another about hazards and mitigation actions.

At its November 11, 2014 meeting, the LEPC 11 discussed the five ongoing Lamoille County municipal hazard mitigation plan updates. Committee members, including EMDs, health officials, state agencies, and emergency responders from multiple municipalities were directed to LCPC’s website for plan review. Because this plan covers both Town and Village of Hyde Park, the “neighboring communities” discussion included both jurisdictions. By posting the draft plan on the LCPC and Hyde Park websites and Facebook pages, neighboring communities have had the opportunity to further review the plan and provide comment. As a regional organization, LCPC provides a perspective to the Hyde Park planning process that represents other communities throughout Lamoille County, particularly those upstream of Hyde Park. The plan development process has given all stakeholders an opportunity to participate in the planning process, including neighboring communities, various State agencies (Department of Emergency Management and Homeland Security, Agency of Transportation, Agency of Natural Resources), LCPC and LEPC 11, Hyde Park Development Review Board, and community residents.
In fall 2014, a revised draft of the Hyde Park LHMP was posted on the Town and Village shared website, as well as the LCPC website to invite public comment, as LCPC assisted the town update both its Town Plan and LHMP. LCPC also invited public comment with notices in local Town Clerk’s offices. Copies of the LHMP were made available to interested residents at LCPC’s offices in Morrisville and in the Hyde Park Town and Village shared offices.

2.3 Existing Plans, Studies, Reports, and Technical Information

To develop this plan and to provide Hyde Park with relevant information necessary to develop hazard mitigation strategies, the following resources were utilized and referenced throughout this plan:

i. Town and Village of Hyde Park Comprehensive Development Plan, 2012 - 2017
ii. Town and Village of Hyde Park Flood Regulations
iii. 2014 Town Road and Bridge Standards
iv. 2013 State Road and Bridge Standards
v. 2014 Hyde Park Local Emergency Operations Plan
vi. Hyde Park Flood Insurance Rate Maps
vii. 2013 State of Vermont Hazard Mitigation Plan
viii. 2011 Lamoille County Regional All-Hazards Mitigation Plan and Hyde Park Annex
ix. National Oceanic and Atmospheric Administration’s National Climatic Data Center
x. United States Geologic Survey website
xi. National Weather Service Advanced Hydrologic Prediction Service
xii. American Community Survey 2005-2010
xiii. 2013 Vermont Grand List
xiv. U.S. Census, 2010
xv. Emergency Response Guidebook
xvi. National Flood Insurance Program
xvii. Lamoille County Erosion Study Final Report, February 2014

2.4 Plan Maintenance Process

The Hyde Park LHMP will be reviewed, monitored, evaluated, and updated annually by the Hyde Park Planning Commission, along with the review of the Local Emergency Operations Plan; Village Trustees will also participate. Updates and evaluation by the EMD, Planning Commission Chair, and Selectboard and Trustees representatives will also occur within six months after every federal disaster declaration and as updates to Town regulations and plans come into effect. The Plan will be reviewed by the EMD, Selectboard, Village Trustees, Road Foreman, and Planning Commission. This review will determine the effectiveness of the regional and municipal programs and reflect changes in land development or programs that may affect mitigation priorities.

The process of evaluating and updating the plan will include continued public participation through public notices posted on the municipal website, notice in the municipal building, Front Porch Forum, LCPC newsletter and website, and other forms of media inviting the public to the scheduled Selectboard meeting. Additional stakeholders invited to the meeting will be the Planning Commission, School Board, Fire Chief, Rescue Chief, and representatives from local health care providers and Copley Hospital. Also invited in the future will be the VT Agency of Natural Resources (VT ANR), as they are able to provide...
assistance with NFIP outreach activities, models for stricter floodplain zoning regulations, delineation of fluvial erosion hazard areas, and other applicable initiatives.

Monitoring of plan progress, implementation, and the five year update process will be undertaken by the EMD, in consultation with LCPC. Monitoring updates may include changes in community mitigation strategies; new town bylaws and planning strategies; progress of implementation of initiatives and projects; effectiveness of implemented projects or initiatives; and evaluation of challenges and opportunities. The plan is to be a “living document” to allow for new actions to be identified in the five year interim period and amended without formal re-adoption during regularly scheduled Selectboard meetings. Prior to the end of the five year period, the plan will undergo a formal update and submission to FEMA for re-adoption.

Hyde Park shall also continue incorporating mitigation planning into their long term land use and development planning documents. It is recommended Hyde Park review and incorporate elements of the Local Hazard Mitigation Plan when updating the municipal plan, regulations, and flood hazard bylaws. The incorporation of the Local Hazard Mitigation Plan into the municipal plan and flood hazard bylaws will also be considered after declared or local disasters. The Town will collaborate with the Village on ideas for future mitigation projects and hazard areas.

2.5 Updates to this 2015 LHMP

The Hyde Park LHMP was originally adopted as an Annex to the Lamoille County Multi-Jurisdictional All-Hazards Mitigation Plan in December 2012 and received FEMA final approval in March 2013. The 2015 update is intended to be submitted as a multi-jurisdiction local mitigation plan for both the Village and Town of Hyde Park. For this plan update, the plan has been reorganized and new sections have been added. The plan has been updated to reflect changes in population, development, and recent flood events.

Updates to the 2015 plan include:
- Updated information to reflect changes in development
- Hazard identification and analysis
- Mitigation actions, programs, strategies, and priorities
- Mitigation goals and objectives
- Revised maps to illustrate an expanded array of hazards and threats to critical infrastructure

3.0 Hazard Identification and Risk Assessment (HI/RA):

A risk assessment measures the potential loss of life, personal injury, economic injury, and property damage resulting from natural hazards by assessing the vulnerability of people, buildings, and infrastructure to natural and technological disasters. The following assessment is based on discussions with Hyde Park representatives during the update of this Plan.

The vulnerability assessment predicts the extent of damage that may result from a hazard event of a given intensity in a given area on the existing and future built environment. Determining the community’s vulnerability involved identifying the threats posed to people, property, and the environment. The following natural disasters (Figure 2) were discussed and the most significant threat hazards were identified based upon the likelihood of the event and the community’s vulnerability to the
event. Vulnerability is rated as high, moderate, or low, based on the community’s susceptibility to the hazard and disruption of daily functions in the community. Probability of a hazard is rated in terms of the likelihood the hazard will occur in any given year: high (90-100%); medium (50-90%); unlikely (10-50%); rare (0-10%). Hazards not identified as a high probability may still occur. Greater explanations and mitigation strategies of moderate threat hazards can be found in later in this Plan and the State of Vermont’s Hazard Mitigation Plan.

Figure 2: Hyde Park Town and Village Hazard Identification and Risk Assessment

<table>
<thead>
<tr>
<th>Hazard</th>
<th>Vulnerability</th>
<th>Probability</th>
<th>At risk from hazard*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flooding</td>
<td>High</td>
<td>High</td>
<td>Utility Infrastructure, Transportation Infrastructure, Structures/Property, Water Quality</td>
</tr>
<tr>
<td>Winter storms</td>
<td>High</td>
<td>High</td>
<td>Utility Infrastructure, Transportation Infrastructure, Structures/Property</td>
</tr>
<tr>
<td>Wind storms</td>
<td>High</td>
<td>High</td>
<td>Utility Infrastructure, Transportation Infrastructure, Structures/Property, Water Quality</td>
</tr>
<tr>
<td>Major highway crash</td>
<td>Moderate</td>
<td>Medium</td>
<td>Transportation Infrastructure, Structures/Property, Public Health, Economy, Water Quality</td>
</tr>
<tr>
<td>Structure fire</td>
<td>Moderate</td>
<td>Medium</td>
<td>Structures/Property, Utility Infrastructure, Public Health, Economy</td>
</tr>
<tr>
<td>Wild/forest fire</td>
<td>Moderate</td>
<td>Unlikely</td>
<td>Silviculture, Structures/Property, Utility Infrastructure, Public Health, Economy, Water Quality</td>
</tr>
<tr>
<td>Dam failure</td>
<td>Moderate</td>
<td>Rare</td>
<td>Utility Infrastructure, Transportation Infrastructure, Structures/Property, Public Health, Agriculture, Water Quality</td>
</tr>
<tr>
<td>Tornado</td>
<td>Moderate</td>
<td>Rare</td>
<td>Utility Infrastructure, Transportation Infrastructure, Structures/Property, Public Health, Economy, Agriculture, Water Quality</td>
</tr>
<tr>
<td>Major hailstorm</td>
<td>Moderate</td>
<td>Rare</td>
<td>Utility Infrastructure, Structures/Property, Economy, Agriculture</td>
</tr>
<tr>
<td>Hazardous materials spill</td>
<td>Low</td>
<td>Medium</td>
<td>Transportation Infrastructure, Structures/Property, Public Health, Economy, Water Quality</td>
</tr>
<tr>
<td>Lightning and electrical hazards</td>
<td>Low</td>
<td>Medium</td>
<td>Utility Infrastructure, Structures/Property, Public Health, Economy</td>
</tr>
<tr>
<td>Drought</td>
<td>Low</td>
<td>Rare</td>
<td>Agriculture, Public Health, Economy, Water Quality</td>
</tr>
<tr>
<td>Earthquake</td>
<td>Low</td>
<td>Rare</td>
<td>Utility Infrastructure, Transportation Infrastructure, Structures/Property, Public Health, Economy</td>
</tr>
</tbody>
</table>
Landslide and erosion  | Low | Rare | Utility Infrastructure, Transportation Infrastructure, Structures/Property, Public Health, Economy, Water Quality

*Additional risk locations are identified in sections 3.1 – 3.4.11. This column is generalized areas and structures at risk; more information in the below sections provide clarity for parts of the Town and Village.

The following hazards were found to be most significant in the town, based on the probability and vulnerability:

- Flooding
- Winter Storms
- Wind Storms

Moderate threat hazards include:

- Major Highway Crash
- Structure Fire

Moderate and low threats with low impacts or rare/unlikely hazards include:

- Wild/forest fire
- Dam Failure
- Tornado
- Major Hailstorm
- Hazardous Materials spills
- Lightning and Electrical Hazards
- Drought
- Earthquake
- Landslide and Erosion

### 3.1 Significant Hazard: Flooding

Based on the results of utilizing GIS to overlay a digitized FEMA Flood Insurance Rate Map (FIRM) with the location of structures in Hyde Park (total of 1359) – which were GPS located for the development of the Enhanced 911 Emergency services dispatch system—eleven vulnerable structures (1% of total) were identified to have flood inundation potential, based on the 100-year floodplain. A median value of $163,600 for all structures in Hyde Park was determined from the 2013 Vermont Grand List. Based on this median value, the estimated potential loss for all structures within the floodplain is $1,799,600.

The Floodplain map (Map 1) identifies the areas of town that are within the 100-year floodplain. The Transportation Concerns map (Map 2) identifies other areas of potential loss to highway infrastructure due to erosion and road flooding. Culverts were also identified on the map with information provided by the Hyde Park culvert inventory conducted in 2011. Annually, the town maintains and/or replaces culverts that have significant: concrete spalls, scaling, cracks, holes, damage to wing walls, scour and/or erosion, distortion and/or corrosion.
Floods are the most probable natural cause of emergencies or disaster in Hyde Park. Annual flood events are common in some form, with the majority of damage concentrated around the Lamoille River (south of the Village) and Centerville Brook (Centerville Road). The 1927 flood caused extensive damage in the community: structural damage, destruction of roads, bridges railroad bed/bridges and loss of crops and supply-chain interruptions. Water contamination of private wells and springs is a problem during flood events. Several recorded significant historical events are shown in Figure 3, Lamoille River Gauge at Johnson (the Lamoille River USGS gauge in Johnson is the closest data point for Hyde Park in terms of both location and elevation).

**Figure 3: Historical Levels for Lamoille River**

![Historical Levels for Lamoille River](image)

The Village of Hyde Park is fortunately situated upland from the Lamoille River and accordingly, during historically severe flooding events in Lamoille County, Hyde Park has fared better than neighboring communities. Nonetheless, the community has been impacted on numerous occasions as noted in Figure 4 below. Please note, that due to town’s small staff and turnover among volunteer local officials, it is impossible to numerically quantify the extent of some historical events, as the impacts were often less severe in Hyde Park than neighboring communities, and records were not consistently kept.

**Figure 4: Hyde Park Flooding Hazard History**

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
<th>Location</th>
<th>Extent</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>April 2014</td>
<td>Flash flood</td>
<td>Hyde Park; Lamoille County</td>
<td>Data unavailable</td>
<td>Only minor damage to unpaved roads; minor damage to residential property</td>
</tr>
<tr>
<td>Date</td>
<td>Event</td>
<td>Location</td>
<td>Johnson flood stage</td>
<td>Description</td>
</tr>
<tr>
<td>--------------</td>
<td>-------------</td>
<td>-----------------------------------</td>
<td>---------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Aug-Sep 2011</td>
<td>Flash flood</td>
<td>Statewide (no Hyde Park Impact)</td>
<td>Johnson flood gauge crested at 16.34 ft (flood stage is 13 ft)</td>
<td>Only minor damage to unpaved roads; very minor flooding for residential property</td>
</tr>
<tr>
<td>Apr-May 2011</td>
<td>Flash flood</td>
<td>Hyde Park; Northern Vermont</td>
<td>Johnson flood gauge crested at 16.97 ft</td>
<td>Heavy rains cause widespread road and culvert washouts, and limited structure damage</td>
</tr>
<tr>
<td>July 2008</td>
<td>Flash flood</td>
<td>Hyde Park/Johnson</td>
<td>Data unavailable</td>
<td>Multiple consecutive days with multiple inches of rain cause localized road washouts</td>
</tr>
<tr>
<td>August 2004</td>
<td>Flash flood</td>
<td>Hyde Park; Lamoille &amp; Franklin Counties</td>
<td>Data unavailable</td>
<td>Heavy rains cause localized road washouts</td>
</tr>
<tr>
<td>September 1999</td>
<td>Flash flood</td>
<td>Statewide</td>
<td>Data unavailable</td>
<td>Heavy rains cause widespread road and culvert washouts, limited structure damage</td>
</tr>
<tr>
<td>July 1998</td>
<td>Flash flood</td>
<td>Hyde Park; statewide</td>
<td>Data unavailable</td>
<td>Heavy rains cause widespread road and culvert washouts, and limited structure damage</td>
</tr>
<tr>
<td>July 1997</td>
<td>Flash flood</td>
<td>Hyde Park; Northern Vermont</td>
<td>Data unavailable</td>
<td>Heavy rains cause widespread road and culvert washouts, and limited structure damage</td>
</tr>
<tr>
<td>August 1995</td>
<td>Flash flood</td>
<td>Hyde Park; Northern Vermont</td>
<td>Johnson flood gauge crested at 19.88 ft (highest ever)</td>
<td>Heavy rains cause widespread road, culvert and structure damage across Lamoille County</td>
</tr>
<tr>
<td>June 1984</td>
<td>Flash flood</td>
<td>Hyde Park; Lamoille County</td>
<td>Johnson flood gauge crested at 16.5 ft</td>
<td>Severe flooding; details unknown</td>
</tr>
<tr>
<td>July 1973</td>
<td>Flash flood</td>
<td>Hyde Park; Lamoille County</td>
<td>Johnson flood gauge crested at 17.33 ft</td>
<td>Severe flooding; details unknown</td>
</tr>
<tr>
<td>Sep 1938</td>
<td>Flash flood (Hurricane)</td>
<td>Statewide</td>
<td>Data unavailable</td>
<td>Major hurricane strikes New England; details unknown</td>
</tr>
<tr>
<td>Mar 1936</td>
<td>Flash flood</td>
<td>Statewide</td>
<td>Johnson flood gauge crested at 16.48 ft</td>
<td>Severe flooding; details unknown</td>
</tr>
<tr>
<td>Nov 1927</td>
<td>Flash flood</td>
<td>Statewide</td>
<td>Data unavailable</td>
<td>Heavy rains, reportedly between 4-9 inches across the state caused then-record floods</td>
</tr>
</tbody>
</table>
3.1.1 National Flood Insurance Program participation

Hyde Park Town and Village participate in the NFIP and currently have 8 policies in force, with an estimated $796,800 of coverage. As of 2014, no claims have been filed since 1978. There are no repetitive loss properties located in the Town or Village. Hyde Park will continue to regulate and enforce NFIP requirements through its floodplain management ordinance, including new and substantially improved construction in Special Flood Hazard Areas and providing floodplain identification and mapping determinations. As previously noted, Hyde Park is also adopting a fluvial erosion hazard corridor to direct investments away from erosion prone areas.

Extent: The worst flooding that can be anticipated is reflected by the 2011 events during Tropical Storm Irene in southern Vermont, where most areas received between 5 and 7 inches of rain, with the highest recorded amount in the Town of Mendon (11 inches). Had the northern part of the state- including Hyde Park – received a comparable amount of rain during Irene, the results would have been equally catastrophic.

As previously noted, Hyde Park is fortunate to be less prone to flooding than many neighboring communities. Ultimately, the Lamoille River represents the greatest flooding threat and area of vulnerability. The Lamoille forms Hyde Park’s southern political boundary and the Village of Hyde Park is situated uphill from its banks. While the center of the Village is located several hundred feet above the river, the western corner is within the Special Flood Hazard Area. While there is no established “flood stage” for the Lamoille in Hyde Park (defined as the point at which the surface of a body of water rises to an elevation that impacts man-made structures), 1995 is regarded as the worst historical flood event in the Lamoille Valley. During this event, the river peaked at 6.88 feet above flood stage in nearby Johnson; while hour-by-hour USGS data is not available for this storm, observations from the recent 2011 floods suggest the Lamoille (which moves floodwaters swiftly from east to west into Lake Champlain) would rise and then recede below flood stage in 12-24 hours. Thus, from this best available data, we can estimate that houses along the Lamoille in the areas of Black Farm, Ten Bends and River Run Drive could be subject to some level of inundation for 24 hours, with peak flood depths reaching nearly 7 feet.

3.2 Significant Hazard: Winter Storm/Ice Storm

Winter storms with snow, ice and freezing temperatures in various combinations are fairly commonplace in Hyde Park. Hyde Park is geared to handle most winter emergencies. A potential for emergency exists when such storms also result in the loss of electricity, leaving people without adequate heating capability. Heavy wet snows of early fall and late spring cause most power failures, however, ice storms can also cause power outages. Damage has resulted in structural damage to residences and businesses in the past. Normally damage is the result of heavy snow causing roof failures. Ice events and heavy wet snows have caused numerous power outages due to power line damage.

Due to the region’s mountainous terrain, it is not uncommon for precipitation to range from rain in the valley area, to ice in the middle elevations, with heavy snows in the higher terrain. This poses a major challenge to highway maintenance personnel. Hyde Park maintains snow removal equipment for all town highways, and Vermont Agency of Transportation maintains equipment for state highways. Snowfalls that are within normal snowfall limits are handled effectively; however, during heavy snowfall for extended periods of time, removal of snow becomes problematic. Historically, these events are not frequent and are short in duration. During such events, radio communications is maintained between
highway crews and town emergency responders. Local construction equipment in the community has been used during past emergencies to augment community resources. Most residents are accessible during severe weather conditions, although access may be delayed. In the event of a winter emergency, the Highway Department will assist fire and ambulance crews by making private roads passable.

**Extent**: The worst winter storm that can be anticipated in Hyde Park would be comparable to December 2008 ice storm where much of the region was impacted by 3-4” of ice accumulation, causing widespread, multi-day power outages and obstructing roads with downed trees and power lines. Alternatively, the worst snow storm that can be expected is snowfall of up to 30”, which has occurred multiple times (as shown in Figure 5). While large snowfalls often disrupt business for one or more days, Vermont communities are well prepared for snow and such storms are generally less of a hazard than the aforementioned ice storms.

![Figure 5: Hyde Park Severe Winter Storm Hazard History](image)

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
<th>Location</th>
<th>Extent</th>
</tr>
</thead>
<tbody>
<tr>
<td>March 6, 2011</td>
<td>Severe winter storm</td>
<td>Lamoille County</td>
<td>18-30” of snowfall</td>
</tr>
<tr>
<td>Feb. 23, 2010</td>
<td>Severe winter storm</td>
<td>Lamoille County</td>
<td>Up to 20” of snowfall</td>
</tr>
<tr>
<td>Dec. 12-13, 2008</td>
<td>Ice/freezing rain storm</td>
<td>Lamoille County</td>
<td>Ice accumulations of 3-4”</td>
</tr>
<tr>
<td>February 14, 2007</td>
<td>Severe winter storm</td>
<td>Lamoille County</td>
<td>Up to 48” of snowfall</td>
</tr>
<tr>
<td>Oct. 25, 2005</td>
<td>Severe winter storm</td>
<td>Lamoille County</td>
<td>Up to 14” of snowfall</td>
</tr>
<tr>
<td>Feb. 10, 2005</td>
<td>Severe winter storm</td>
<td>Lamoille County</td>
<td>10-20” of snowfall</td>
</tr>
<tr>
<td>Jan. 4, 2003</td>
<td>Severe winter storm</td>
<td>Lamoille County</td>
<td>Up to 20” of snowfall</td>
</tr>
<tr>
<td>April 9, 2000</td>
<td>Severe winter storm</td>
<td>Lamoille County</td>
<td>13-25” of snowfall</td>
</tr>
<tr>
<td>Jan 6, 1998</td>
<td>Ice/freezing rain storm</td>
<td>Lamoille County</td>
<td>Up to 0.5” of icing between 1500’-2500’ elevations</td>
</tr>
<tr>
<td>Dec. 29, 1997</td>
<td>Severe winter storm</td>
<td>Lamoille County</td>
<td>Up to 21” of snowfall</td>
</tr>
<tr>
<td>Jan. 15-16, 1983</td>
<td>Severe winter storm</td>
<td>Lamoille County</td>
<td>Up to 24” of snowfall</td>
</tr>
<tr>
<td>Feb 6-7, 1978</td>
<td>Severe winter storm</td>
<td>Lamoille County</td>
<td>Up to 30” of snowfall</td>
</tr>
</tbody>
</table>

### 3.3 Significant Hazard: Windstorms/High Wind Events

Powerful windstorms represent a four-season hazard in Vermont. Impacts may vary from highly localized events, to storms causing widespread damage. These storms frequently damage structures, trees, and power lines. In December 2010, a damaging windstorm in central and northwest Vermont led to a federal disaster declaration for Chittenden, Franklin, and Lamoille counties. Windstorms pose risk to the entire community.

Damaging winds and flooding may also be caused by hurricanes and tropical storms, which travel up the Atlantic coastline. While the risk to Vermont is not on par with the South Atlantic and Gulf Coast states, the associated rain and flooding caused by these storms has had devastating impacts locally. In 1938, a hurricane swept across New England, causing what was once cited as the worst flooding in the state’s history. In some regions, the 1938 hurricane was only recently eclipsed by the impact of Tropical Storm Irene, which devastated southern and central Vermont in August 2011 (Hyde Park was fortunate to have sustained minimal damage from Irene).

**Extent**: The worst windstorm that can be anticipated in Hyde Park would be comparable to that of the September 1938 hurricane, which caused widespread property damage throughout the state (reaching a force of 12 on the Beaufort Wind Scale, with estimated winds of 64+ knots).
However, there is no town specific data for this event available for Hyde Park. As with many small rural communities, it is very difficult to recover paper records over several generations of municipal officials. Therefore, there are often records gaps for incidents that pre-date digital files. A history of windstorms that have impacted Hyde Park is listed in Figure 6).

**Figure 6: Hyde Park Wind Storm Hazard History**

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
<th>Location</th>
<th>Extent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aug. 28, 2011</td>
<td>Tropical Storm Irene</td>
<td>Statewide; minimal impact in</td>
<td>Sustained winds of 30-45 mph</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hyde Park</td>
<td></td>
</tr>
<tr>
<td>April 16, 2011</td>
<td>High wind event</td>
<td>Lamoille County; Northern</td>
<td>Wind gusts up to 60 mph; 10,000 residents in VT lost</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Vermont</td>
<td>electricity</td>
</tr>
<tr>
<td>Dec. 1, 2010</td>
<td>High wind event</td>
<td>Lamoille County; Northern</td>
<td>Wind gusts up to 90 mph; 25,000 residents in VT lost</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Vermont</td>
<td>electricity</td>
</tr>
<tr>
<td>Sept. 19, 2003</td>
<td>High wind event</td>
<td>Lamoille County</td>
<td>Wind gusts up to 55 mph observed</td>
</tr>
<tr>
<td>Sept. 16, 1999</td>
<td>Tropical Storm Floyd</td>
<td>Lamoille County; Statewide</td>
<td>Wind gusts up to 60 mph observed</td>
</tr>
<tr>
<td>Jan 27, 1996</td>
<td>High wind event</td>
<td>Lamoille County</td>
<td>Wind gusts of 30-50 mph observed</td>
</tr>
<tr>
<td>Sept. 1938</td>
<td>Hurricane</td>
<td>Statewide</td>
<td>Data unavailable</td>
</tr>
</tbody>
</table>

### 3.4 Moderate and Low Hazards

Additional, less common hazards are described in the following sections. Unless otherwise noted, hazard history and extent are based on records from the National Climatic Data Center (NCDC).

#### 3.4.1 Major Highway and Railroad Crashes

Hyde Park is crossed by two major State highways: VT Routes 15 and 100. Both serve as major inter-regional transportation corridors. Motorists travel at high speeds on the state highway network, creating potentially dangerous intersections with local roadways. The threat of a major highway crash is an ever-present possibility in communities across the United States. The threat of a major railroad crash is non-existent, as there are no active rail lines in Hyde Park.

Two major intersections in Hyde Park have been identified by the Vermont Agency of Transportation (VTrans) as having a history of accidents, as shown on the Transportation Concerns map (Map 2). One site is at the intersection of Vermont Routes 100 and 100C near the Johnson town line. The other located at the intersection of Vermont Routes 15 and 100 – which was re-engineered and converted to a roundabout in late 2011 following the death of a grandmother and her two grandchildren. Also in 2011, a culvert study identified town maintained culverts based on the Vermont Center for Geographic Information (VCGI) Bridge & Culvert Data Exchange Standards. None of the six bridges in Hyde Park have received a federal sufficiency rating of less than 50 out of 100 (failing), and therefore are not shown on the Transportation Concerns map.

**Extent:** There is no data or precedent to substantiate what is the worst anticipated major highway accident for Lamoille County. However, anecdotal observations from area first responders suggest a crash of a tractor-trailer carrying fuel or other hazardous chemicals could result in mass casualties, were it to collide with an occupied building.
3.4.2 Structure Fire

In April of 1910, a fire started at the county jailhouse which destroyed most of the Village, and led to the creation of the Hyde Park water district. According to data from the 2010 Census, there are 1,372 housing units within the town. Historically, structure fires have been isolated incidences, but they pose risk to the entire community. The most vulnerable areas of town include the Villages of Hyde Park and North Hyde Park, and other structures in remote parts of town that may be 10-15 minute drives along unimproved Class 4 roads. In 2013, there were 18 reported structure fires in Hyde Park.

**Extent:** The worst structure fire that can be anticipated in Hyde Park, according to the Hyde Park fire department would be a fire at the P.H. Edwards Furniture Building – the largest structure in Hyde Park Village. This historic, wood framed structure is located in the center of the Village and would pose a significant risk to surrounding historic buildings and public facilities.

3.4.3 Wild/Forest Fire

Across much of Vermont, small woodland and brush fires are common, but the probability of major forest fire is very low. Peak wild fire season is in spring, when weather conditions can result in a dry layer of forest duff after snow has melted away, but before new vegetation emerges. A second window of wildfire vulnerability typically occurs in fall, when dry leaves are abundant. Every town in Vermont has a designated Forest Fire Warden, who receives daily updates from the Division of Forestry during periods of elevated risk. The Division of Forestry also hosts annual Forest Fire Warden trainings at locations throughout the state. The risk of wildfires is most severe in outlying areas of development—away from the town’s major highways—where structures are surrounded by ignitable hardwood and softwood forests. In 2010-11, LCPC developed a Community Wildfire Protection Plan (CWPP) for the towns of Johnson and Hyde Park.

**Extent:** The worst wild/forest fire that can be anticipated in Hyde Park is an incident of less than 10 acres. According to the VT Department of Forests, Parks, and Recreation the average wildfire size across the state between 2001 and 2010 was 1.86 acres. Furthermore, within the last five years, the average wildfire size within Lamoille County was 0.7 acres. In the development of the 2010-11 CWPP, the Hyde Park Fire Department also reported that wildfire responses are historically for incidents less than one acre, which are quickly contained.

3.4.4 Dam Failure

There are two dams located in Hyde Park that have the potential for dam failure. The Woodside plant located on the Gihon River, near the Johnson town line, poses limited risk for property damage resulting from a dam failure. However, the Green River Dam—located approximately 4.3 miles above the confluence with the Lamoille River—poses a moderate risk. The Green River Dam is owned and operated by Morrisville Water and Light and has been utilized as a water storage project since its construction in 1947. Hydroelectric generating facilities have been installed at the site and are now in operation.

An Emergency Action Plan for the Green River Dam was developed (06/15/01; LCPC’s copy updated 02/22/06) and is housed at the Morrisville Water and Light Department and LCPC offices. The dam’s emergency plan is currently being updated again, and will be incorporated into this LHMP with future revisions. The plan was developed to minimize loss of life and property along the Green and Lamoille
Rivers in the downstream communities that would potentially be affected by a dam failure or flooding, including Garfield, Morrisville, Cady’s Falls, Hyde Park, Johnson and Ithiel Falls. The plan provides procedures to notify emergency response entities in the event of a dam failure. In collaboration with Morrisville Water and Light, LEPC 11 developed a discussion-based exercise designed to test emergency response and notification plans associated with a potential breach of the dam. Sensors and alarms are installed that would alert Morrisville Water and Light of possible emergency situations. Probable causes of dam failure emergencies may include earthquakes, extreme storms, equipment malfunctions, structural damage and/or deteriorations, and sabotage. A functional exercise is held every 3-years to test the plan.

Extent: The worst dam failure event that can be estimated would be a complete breach of the Green River Reservoir Dam, which would inundate properties in low-lying areas adjacent to the Green and Lamoille Rivers. However, the number of acres or homes impacted would vary greatly depending on the height of water behind the dam at the time of breach, as well as the height of rivers downstream. Further, the dam has never breached; there is no publicly available data to quantify extent for such an incident.

3.4.5 Tornado

Tornados, while uncommon in New England, can occur and endanger life and property virtually anywhere, at any time. According to NCDC, there have been only two tornado incidents in Lamoille County since 1960. The most recent touched down in Cambridge in 2008 and was measured between an EF0 and EF1 on the Enhanced Fujita Scale – which characterizes tornado wind speeds and degree of expected damage. Additional details on the Enhanced Fujita Scale are contained in Figure 7.

Figure 7: Enhanced Fujita Scale (Source: National Weather Service.)

<table>
<thead>
<tr>
<th>Rating</th>
<th>Description</th>
<th>Wind Speed</th>
</tr>
</thead>
<tbody>
<tr>
<td>EF0</td>
<td>Gale Tornado</td>
<td>65-85 mph</td>
</tr>
<tr>
<td>EF1</td>
<td>Moderate Tornado</td>
<td>86-110 mph</td>
</tr>
<tr>
<td>EF2</td>
<td>Significant Tornado</td>
<td>111-135 mph</td>
</tr>
<tr>
<td>EF3</td>
<td>Severe Tornado</td>
<td>136-165 mph</td>
</tr>
<tr>
<td>EF4</td>
<td>Devastating Tornado</td>
<td>166-200 mph</td>
</tr>
<tr>
<td>EF5</td>
<td>Incredible Tornado</td>
<td>&gt; 200 mph</td>
</tr>
</tbody>
</table>

Extent: While it is theoretically possible for an EF5 tornado to occur at any time, according to data from NCDC, there have been no tornados reported in Vermont greater than the equivalent of EF2. There have accordingly been no deaths and a very limited number injuries caused by tornados in the state. Therefore, the worst tornado that can be anticipated would be similar to that which struck Chittenden County in August 1983 (estimated to be EF2), causing approximately $2.5 million in property damage, with no reported injuries. Were a similarly strong tornado to strike Hyde Park, there could be extensive damage to historic buildings and potential injuries to inhabitants.

3.4.6 Hail Storm

With Vermont’s variable weather patterns, hail is a four-season threat to both public and private property. While the likelihood of a severe hail storm is low, smaller storms may damage homes and
automobiles. Hailstorms pose risk to the entire community. Hail can be measured using the Hail/Torro Scale (Figure 8).

Figure 8: Hail/Torro Scale (Source: www.torro.org.uk)

<table>
<thead>
<tr>
<th>Intensity Category</th>
<th>Typical hail diameter (mm)</th>
<th>Typical Damage Impacts</th>
</tr>
</thead>
<tbody>
<tr>
<td>H0 Hard Hail</td>
<td>0-20</td>
<td>No damage</td>
</tr>
<tr>
<td>H1 Potentially Damaging</td>
<td>&gt;20</td>
<td>Slight general damage to plants, crops</td>
</tr>
<tr>
<td>H2 Severe</td>
<td>&gt;100</td>
<td>Significant damage to fruit, crops, vegetation</td>
</tr>
<tr>
<td>H3 Severe</td>
<td>&gt;300</td>
<td>Severe damage to fruit and crops, glass and plastic structures, and paint and wood scored</td>
</tr>
<tr>
<td>H4 Severe</td>
<td>&gt;500</td>
<td>Widespread glass damage, vehicle bodywork damage</td>
</tr>
<tr>
<td>H5 Destructive</td>
<td>&gt;800</td>
<td>Wholesale destruction of glass, damage to tiled roofs, significant risk of injuries</td>
</tr>
<tr>
<td>H6 Destructive</td>
<td></td>
<td>Bodywork of grounded aircraft dented, brick walls pitted</td>
</tr>
<tr>
<td>H7 Destructive</td>
<td></td>
<td>Severe roof damage, risk of serious injuries</td>
</tr>
<tr>
<td>H8 Destructive</td>
<td></td>
<td>Severe damage to aircraft bodywork</td>
</tr>
<tr>
<td>H9, H10 Super Hailstorms</td>
<td></td>
<td>Extensive structural damage. Risk of severe or even fatal injuries to people</td>
</tr>
</tbody>
</table>

While no major hail events have been recorded in Hyde Park, in 2009, nearby Westford recorded a 3.3 inch diameter hail stone, which was determined by the State Climate Extremes Committee to be the largest recorded hail stone in Vermont. In Waterville, hail reports estimated a 1 inch diameter (H1 on the Hail/Torro Scale).

Extent: The worst hailstorm that can be anticipated is golf-ball sized hail (1” diameter), which was observed in Lamoille County in July 2010, causing an estimated $25,000 in property damage across the state. Hailstorms of this magnitude are exceedingly rare.

3.4.7 Hazardous Materials (HAZMAT) Spill

In Vermont, businesses and facilities storing hazardous materials are required to file a Tier II report with DEMHS and their Local Emergency Planning Committee (LEPC), detailing the volume and type of substance. LEPCs receive funds from DEMHS to carry out planning and preparedness activities, such as commodity flow studies to track the transport of hazardous substances and outreach to non-reporting HAZMAT storage sites.

Four Tier II sites are identified in the Hyde Park. A Tier II site is defined by federal law under the Emergency Planning & Community Right to Know Act (EPCRA) and is generally any facility which uses or possesses reportable quantities of chemicals requiring material safety data sheets, known human carcinogens, extremely hazardous substances, explosives which require licensing, and/or certain threshold quantities of petroleum products.
Hazardous waste sites have the potential to contaminate and pollute water systems and other ecosystems, as well as threaten human health. The Vermont Agency of Natural Resources maintains a web-based atlas, which includes data about hazardous materials. There are nine active underground hazardous material storage tanks located in town and sixteen other sites listed as hazardous waste sites, no hazardous waste generators are currently shown. According to the State Waste Management Interactive database, between 2009 and 2014 twelve incidents were reported involving hazardous materials spills in Hyde Park, as shown in Figure 9. These spills mostly involved very limited quantities of oil or other petroleum products.

Figure 9: Hyde Park Hazardous Waste Spill Sites, 2009 – 2014

<table>
<thead>
<tr>
<th>Report #</th>
<th>Year</th>
<th>Facility Name</th>
<th>Address</th>
<th>Date Reported</th>
<th>Date Closed</th>
</tr>
</thead>
<tbody>
<tr>
<td>WMD244</td>
<td>2012</td>
<td>Casella garage</td>
<td>Rte 100</td>
<td>5/14/2012</td>
<td>5/14/2012</td>
</tr>
<tr>
<td>WMD502</td>
<td>2010</td>
<td>Diane Gergely Property</td>
<td>Centerville Road</td>
<td>10/12/2010</td>
<td></td>
</tr>
<tr>
<td>WMD502</td>
<td>2014</td>
<td>Jones Property</td>
<td>1030 Jones Rd</td>
<td>10/9/2014</td>
<td></td>
</tr>
<tr>
<td>WMD586</td>
<td>2012</td>
<td>Philip Ward Res</td>
<td>5731 VT Rte 100</td>
<td>11/30/2012</td>
<td>12/24/2013</td>
</tr>
<tr>
<td>WMD280</td>
<td>2011</td>
<td>Piper Property</td>
<td>Garfield Road</td>
<td>5/24/2011</td>
<td>7/14/2011</td>
</tr>
<tr>
<td>WMD052</td>
<td>2013</td>
<td>Robert Wads Residence</td>
<td>5373 Rte 100</td>
<td>2/4/2013</td>
<td>2/5/2013</td>
</tr>
<tr>
<td>WMD243</td>
<td>2012</td>
<td>Trash &amp; recycling center</td>
<td>Rte 100</td>
<td>5/12/2012</td>
<td>5/12/2012</td>
</tr>
</tbody>
</table>

The Areas of Local Concern map (Map 3) outlines the potential impact of a HAZMAT incident in terms of structures affected within a community from a fixed site and in terms of structures affected along a HAZMAT transportation corridor or route where an accident might occur.

When assessing community vulnerability, the impact of both fixed site and HAZMAT transportation were considered. Using the U.S. Department of Transportation Emergency Response Guidebook, a 1,000 foot buffer was selected. For fixed site facilities, a 1000 foot radius circle was drawn around that site to determine the area of potential impact. For potential transportation incidents, a 500 foot buffer on each side of Class I and II roads was used to determine potential impact. Of the 1,359 structures within the town, 33 structures (2% of total) are within 1000 feet of a Tier II site and 515 structures (38% of total) are within 500 feet of a major road. Structures include all residential, commercial and public buildings in a town. Structures are only counted once. This means that if a house is within 1,000 feet of three Tier II sites, it is only counted once, not three times. A median value of $163,600 for all structures in Hyde Park was determined from the 2013 Vermont Grand List. Based on this median value, the estimated potential loss for all structures within 1,000 feet of a Tier II is $1,349,700. The estimated potential loss for all structures within 500 feet of a major roadway is $4,212,700.

Ultimately, any natural hazard that could dislodge an outdoor chemical storage tank, including a flood or windstorm, would pose significant risk to the community. The most common example is during spring and fall floods, when unanchored propane tanks may be swept away, creating a potentially dangerous...
HAZMAT incident. Fire Departments within the Lamoille Mutual Aid Association are equipped to handle this situation. The most efficient way to mitigate this issue is through a fuel tank tie-down program.

It is important to note that many hazardous materials pass through the intersection of Routes 15 and 100, which is less than one mile from four schools, emergency operations center (EOC) and municipal offices. In 2012, LEPC 11 conducted a commodity flow study of hazardous materials being transported across the regional highway network, to better inform HAZMAT planning and preparedness among first responders. Additionally, there are 27 critical facilities in the town as shown on the Critical Facilities map (Map 4). As shown on the Areas of Local Concern map (Map 3), sixteen of which are either located within 500 feet of a major highway site, located within 1,000 feet of a Tier II reporting site, or within the 100 year floodplain. Two of these sites, the municipal offices and highway garage, are within 500 feet of a major highway and within 1000 feet of a Tier II reporting site.

Extent: There is no data or precedent to substantiate what is the worst anticipated HAZMAT spill in Lamoille County. However, anecdotal observations from area first responders suggest the crash of a large truck carrying fuel or other hazardous chemicals could result in mass casualties, were it to collide with an occupied building.

The Hyde Park Local Emergency Operations Plan identifies the following Vulnerable Sites and High Risk Populations:

**High Hazard and/or Vulnerable Sites**
- Green River Reservoir and Vicinity
- Ten Bends Neighborhood
- Power Plant Drive Dam
- Whitcomb Island Bridge
- Brook Road Culvert
- Silver Ridge Road Culvert
- Barnes Road Culvert

**High Risk Populations**
- Lamoille Union High & Middle School
- Green Mountain Career Center
- Hyde Park Elementary School
- Forest Hill Nursing Home
- Common Acres Campground
- Sterling View Mobile Home Park
- Lamoille County Court House

### 3.4.8 Lightning and Electrical Hazards

Lightning can be a hazard to public safety in several ways: strikes to communication and power infrastructure, strikes to people and property, or strikes that start wildfires. Safety education and protection of essential equipment and infrastructure are methods to mitigate potential damages from lightning strikes. Downed power lines can also be a hazard to individuals and property; safety education is an effective measure to mitigate this hazard.
One of the most common impacts of major natural disasters can be the prolonged loss of electricity, whether from localized damage to distribution systems or from remote impacts to generation and transmission facilities. While this plan recognizes that power failure is not a natural hazard in and of itself- rather a condition inflicted by other natural hazards- the scope of its impact deserves a discussion.

*Extent:* Based on the rural character of the town and its concerns with transportation infrastructure in inclement weather, protracted loss of power could significantly endanger health and safety, have substantial economic consequences, or cause stress and severe inconvenience to local residents and businesses. The shortage of energy could threaten the welfare of the citizens of Hyde Park. The dependency upon out-of-state sources of power can become a problem when the power grid is interrupted. The VT Department of Health and Lamoille County Sheriff’s Department maintain a list of vulnerable populations who may require additional assistance during long term outages.

### 3.4.9 Drought

Droughts represent a hazard in late summer, when local ground and surface water levels are reduced to minimal flows. The local water table reached an all-time low during the nationwide drought of 1988, however, recovery was fairly rapid. The town has two public water system storage reservoirs for each of the public water systems. These water systems could be used to augment alternate sources if private wells go dry. Drought poses risk to the entire community.

*Extent:* The worst drought that can be estimated would be similar to that of the summer 1999 drought, when for 18 days, parts of the State reached above 90 degrees (approximately three times more than normal) and several consecutive months of below average precipitation. This drought rated as “moderate” on the Palmer Drought Index (PDI) across the Green Mountains (including Hyde Park) and “severe” in the Champlain Valley.

### 3.4.10 Earthquakes

According to the U.S. Geological Survey (USGS), the risk of earthquakes in Vermont and much of northern New England is rated moderate. Lamoille County has not experienced any property damage or loss of life attributed to an earthquake in its history.

*Extent:* Lamoille County has never been significantly impacted by an earthquake. Since 2002, there have been four earthquakes over 4.0 magnitude (Richter scale) documented on the U.S, Geological Survey website between latitudes 43 and 47, and longitudes -70 and -74. The largest was recorded as 5.2 magnitude near Plattsburgh, NY in 2002.

### 3.4.11 Landslides and Erosion

The risk of a landslide in Hyde Park is most often associated with erosion resulting from river flooding and other impacts of heavy rain. Although landslides have caused property damage in the nearby Towns of Johnson and Cambridge in recent years, Hyde Park’s topography and rural development pattern leaves few homes and critical facilities exposed to the threat a landslide.
Extent: The worst river erosion or landslide that can be anticipated in Hyde Park would be similar to that which occurred in the nearby Village of Jeffersonville in 1995, which destroyed one home (there were no injuries). Although Hyde Park prohibits development on slopes greater than 30%, there are isolated structures and homes spotted throughout the mountainous uplands that could be undermined, in the unlikely event of a landslide.

4.0 Hyde Park Town and Village Mitigation Strategy and Goals

Hyde Park’s hazard mitigation goals were reviewed and updated to reflect changes in mitigation priorities based on the hazards, risks, and community vulnerability. To this end, the Town and Village of Hyde Park support the following hazard mitigation goals:

- To reduce injury and losses from the natural hazard of flash floods, flooding, and fluvial erosion; extreme cold, snow, and ice storm; severe storms, windstorms, hurricanes, and tropical storms; power outages; and other severe weather events.
- Encourage hazard mitigation planning as part of the local planning process, including capital planning and budgeting.
- Provide the technical support for and aid in the development of implementation mechanisms at the local level that will serve to avoid land use investments that would be, over time, endangered by incompatible or in conflict with fluvial adjustment and erosion processes.
- Ensure that emergency response services and critical facilities functions are not interrupted by natural hazards.
- Provide adequate communication systems for emergency personnel and response units.
- Provide residents with adequate warning of potential hazards.

More specific goals, analysis, and mitigation actions are discussed in following sections.

4.1 Integration of the Mitigation Plan into Other Planning and Preparedness Mechanisms

In order to effectively incorporate mitigation strategies into existing planning mechanisms, it is important to demonstrate how these approaches maximize benefit to the entire community. This can be achieved through the utilization of a cost-benefit analysis, which quantifies the benefits of mitigation against anticipated losses. Such an analysis is an integral part of prioritizing potential mitigation strategies and actions, and is also a requirement for submitting future FEMA mitigation grant applications.

For this hazard mitigation plan to be effective, it cannot stand on its own. Hyde Park’s Comprehensive Development Plan covers both the Town and the Village jurisdictions, as does this Hazard Mitigation Plan. Similar to hazard mitigation plans, municipal plans are updated on a five year cycle; the 2012 – 2017 Hyde Park Town and Village Plan incorporated hazard mitigation planning and policies. The Selectboard adopted Town Road and Bridge Standards on November 13, 2014, which incorporate the 2013 State Road and Bridge Standards. Current work to unify the Village and Town zoning bylaws also includes fluvial erosion and other flood hazard considerations. With the State of Vermont requirement to include a “Flood Resiliency element” into municipal plans, effective July 1, 2014, Hyde Park’s next municipal plan update will more fully integrate specific flooding information and strategies contained in this hazard mitigation plan.
Hyde Park’s staffing capacity is limited in terms of some technical capabilities, and works closely with LCPC to accomplish certain hazard planning and mitigation actions including: geomorphic assessments, flood modeling, infrastructure improvements, and Hazard Mitigation Grant Program applications and projects. Hyde Park does maintain and support other planning and preparedness mechanisms such as: funding for the fire and rescue squads; sustain positions of Emergency Management Director, Deputy Director, and Coordinator; periodic review and update of bylaws and ordinances, including current Flood Resiliency efforts; capital planning and budgeting to improve infrastructure; annual LEOP updates.

Vermont’s Division of Emergency Management & Homeland Security encourages a collaborative approach to achieving mitigation at the local level through partnerships with Vermont Agency of Natural Resources, VTrans, Vermont Agency of Commerce and Community Development, Regional Planning Commissions, FEMA Region 1, and others. That said, these agencies and organizations can work together to provide assistance and resources to towns interested in pursuing hazard mitigation projects. Local officials and property owners can always contact the State Hazard Mitigation Officer with questions, technical assistance, or to find out about grant opportunities:

Ray Doherty, State Hazard Mitigation Officer  
VT Division of Emergency Management & Homeland Security  
103 South Main Street  
Waterbury, VT 05671  
Tel (802) 241-5258 (office)  
Email: ray.doherty@state.vt.us

4.2 Continued Public Involvement

There are three principal avenues for continued public participation during the maintenance of this plan:

- Community involvement through the local and regional planning process relating to updating existing planning mechanisms;

- Participation at the regular LEPC 11 meetings (LEPC 11 meetings are typically attended by a variety of parties: first responders, municipal officials, non-profit health care agencies, disaster assistance groups, communications industry officials and Tier II HAZMAT operators); and,

- Posting of the LHMP on the Hyde Park and LCPC websites for public comment.

The general public will be notified of review and update efforts over the next five years through press releases to local newspapers, announcements by local radio stations, and updates to the Hyde Park and LCPC websites. Additionally, LCPC will reach out to other regional stakeholders, including the Lamoille Mutual Aid Association and Lamoille County Sheriff’s Department, to ensure mitigation planning efforts align with the county’s public safety interests.

4.3 Community Preparedness Activities

The following is a list of anticipated or recently completed mitigation programs, projects or activities in Hyde Park. Notes for each section describe the completed, deleted or deferred mitigation action as a benchmark for progress; if activities are unchanged, a description has been provided as to why no changes occurred, or are not necessary.

• Emergency response and management staff attending professional emergency and mitigation training sessions. Ongoing. Hyde Park appointed a new Emergency Management Coordinator, Emergency Management Director, and Town Administrator in 2011, who are involved in mitigation planning activities going forward.

• Participation at Local Emergency Planning Committee 11 meetings and activities. Ongoing. Representatives from Hyde Park regularly participate in monthly LEPC 11 meetings and exercises.

• Regularly scheduled road maintenance programs (culvert survey and replacement, ditching along roadways, cutting vegetation to improve visibility at intersections, etc.). Ongoing. Maintenance priorities are dictated by local needs, however the Town Highway Department follows an annual maintenance plan and schedule.

• Regularly scheduled electric utility maintenance programs (line and pole survey and replacement, line access maintenance, trimming vegetation, etc.). Ongoing. Maintenance priorities are dictated by local needs, however the Village Electric Department follows an annual maintenance plan and schedule.

• Continue to enhance training of the Emergency Management Coordinator (EMC) and Emergency Management Director (EMD). Ongoing. Hyde Park appointed a new Emergency Management Coordinator in 2011, who actively participates in the Lamoille Mutual Aid Association. Training for Emergency Management Coordinators/Directors is coordinated through LCPC and DEMHS.

• Integrate additional mitigation measures in local land use planning and ordinance development processes. In Progress. The merging of the Town and Village Plan occurred in 2012. Hyde Park continues to work with LCPC to incorporate the State’s “Flood Resiliency” requirements into the unified Village and Town local land use planning and bylaws; required elements include a fluvial erosion corridor, flood inundation hazards, and stormwater attenuation.

Financial and Tax Incentives

• Annual investment of local tax dollars in highway mitigation projects. Ongoing. The town budgets for road, bridge, and culvert investments in the annual highway budget.

• Use of State and Federal funding for mitigation projects and activities. Ongoing. Hyde Park applies for state and federal funding to support mitigation projects when appropriate, including the VTrans Structures Grant and the Hazard Mitigation Grant Program.

• Use of grants and other funding sources such as Vermont’s Better Back Roads program for erosion prevention projects. Ongoing. Hyde Park regularly participates in Better Back Roads.

• Develop a Capital Planning program. Ongoing. Hyde Park is developing a program with assistance from LCPC.
Hazard Control and Protective Works

- Develop a Highway Maintenance Program (culvert survey & replacement, ditching along roadways, cutting vegetation to allow visibility at intersections). *Ongoing.* Maintenance priorities are dictated by local needs and budget considerations, but Hyde Park consistently performs grading, ditching and other road surface maintenance activities on town highways in accordance with the annual maintenance plan and schedule.

Insurance Programs

- Participation in NFIP. *Completed.* Hyde Park currently has 8 NFIP policies. As previously noted, Hyde Park is working with LCPC to enhance the local flood hazard regulations.

Land Use Planning/Management

- Incorporate hazard mitigation measures into the Comprehensive Development Plan and zoning bylaws. *In Progress.* Work on the merged Unified Plan and flood hazard regulations is in progress.

Protection/Retrofit of Infrastructure and Critical Facilities

- Mapping of Critical and Essential Facilities. *Ongoing.* LCPC conducted an update of its database of critical facilities in Lamoille County in 2012, which is regularly updated.

Public Awareness, Training & Education

- Hazard Identification and Mapping. *Completed as part of the development of this plan.*
- Community NFIP outreach through LCPC. *Ongoing.* Hyde Park maintains compliance in the NFIP. LCPC continues to work with Hyde Park on flood hazard outreach.
- Distribute NFPA Firewise information during peak wild fire season. *Deferred.* LCPC assisted Hyde Park in the development of a Community Wildfire Protection Plan (CWPP) in 2010-11. The town will consider CWPP implementation priorities, as local resources allow.

Public Protection

- Survey and designation of emergency shelter(s). *Completed.* The town has emergency shelters at Hyde Park Elementary School, the North Hyde Park/Hyde Park Fire Department and Lamoille Union Middle/High School.
- Hazard Vulnerability Assessments. *Completed as part of this planning process.*

Science and Technology

- Stream Geomorphic Assessments to identify flood and erosion hazards. *Ongoing.* Four river corridors in town have undergone various stages of assessment since the previous LHMP’s adoption:
o Gihon River– Phase 1 and Phase 2 assessments and a River Corridor Management Plan have been completed. A Fluvial Erosion Hazard Zone map was also produced in 2010; project implementation and municipal outreach are currently in progress.

o Lamoille River Mainstem– Phase 1 and Phase 2 fieldwork and reports have been completed. A river corridor management plan was also completed in December 2010; project implementation and municipal outreach are currently in progress.

o Green River– The stream geomorphic assessment tool and windshield survey were completed (Phase 1). Phase 2 work (in-stream study) was not recommended due to the current stability of the river.

o Rodman Brook – Phase 1 and Phase 2 assessments and a River Corridor Management Plan have been completed. Project implementation and municipal outreach are currently in progress.

- Fluvial Geomorphic and Erosion Hazard Assessment to evaluate erosion potential in Hyde Park. In Progress. LCPC worked with the Vermont Department of Environmental Conservation to introduce mapped Fluvial Erosion Hazard Zones for the Gihon River and Centerville Brook to the Hyde Park Planning Commission. These zones are serving as the basis for a fluvial erosion hazard overlay in the zoning bylaws.

**Hazard Mitigation Goals, Actions and Projects**

The following sections detail the mitigation goals and potential mitigation actions that have been developed to aid in the reduction of threats posed by recognized hazards. The implementation schedule that follows this section is a table of actions that have been targeted for implementation during the five year cycle of this plan.

### 4.4 Hyde Park Town and Village Goals, Actions and Projects for Most Significant Hazards

**Flooding and Flash Floods**
Goal: *Reduce damage to infrastructure and loss of services due to flooding events.*

Recommended Actions and Projects:
- Update the Hyde Park Culvert Inventory to determine where new structures are needed to mitigate future food damages caused by undersized and failing culverts.
- Upgrade the undersized box culvert on Garfield Road to reduce downstream erosion and road washouts.
- Complete revision of the Hyde Park zoning bylaws to ensure current flood hazard regulations remain in compliance with the National Flood Insurance Program (NFIP) and to incorporate mapped fluvial erosion corridors and other elements of Vermont’s Flood Resiliency legislation.
- Work with the LEPC 11 to develop a fuel tank tie-down program to mitigate against potential HAZMAT incidents.
- Keep Town Highway standards current with Vermont Agency of Transportation recommendations in light of changing weather patterns and storm frequency.

**Winter Storm/Ice Storm**
Goal: *Reduce the impacts of severe winter weather on lives, infrastructure and property.*
Recommended Actions and Projects:

- As Hyde Park Electric Department replaces electrical lines and poles, upgrade snow and ice loading resistance.
- Structurally inspect Municipal Offices and designated emergency shelters to ensure roofs are capable of supporting maximum anticipated winter snow loads.
- Distribute information on roof snow-loading to local permit applicants (cited within the Vermont statewide Hazard Mitigation Plan), to ensure new and renovated structures are built to withstand the weight of peak snow loads.
- Establish intra-municipal Highway Department mutual aid agreements to include sand, salt, and snow removal equipment to better equip Hyde Park for a localized snow or ice emergency.
- Distribute copies of the annual Local Emergency Operations Plan through the Town Clerk’s Office, to promote the locations of emergency shelters in the event of prolonged power outages caused by snow or ice storms.

Windstorms/High Winds
Goal: *Reduce the impacts of high wind events on lives, infrastructure and property.*

Recommended Actions and Projects:

- Maintain a minimum roadside clear zone of 10 feet or more if feasible, to mitigate against potential tree limbs and branches falling blocking roadways.
- Inventory and remove hazardous trees within municipal rights-of-way.
- Maintain a vegetation management plan, including removal of threatening tree limbs, for Village electric right-of-ways.
- Distribute informational materials on wind storm-resistant building materials through the Town Clerk’s office.

All Hazards Mitigation
Goal: *Analyze the effectiveness of recent hazard mitigation initiatives and identify new hazard mitigation initiatives Hyde Park intends to implement.*

Recommended Actions and Projects:

- Revise and update the Capital Budget regularly - which schedules, ranks and prioritizes municipal capital investments- to account for past mitigation measures; plan for future mitigation investments; and reflect changes in the local fiscal planning.

4.5 Hyde Park Town and Village Mitigation Actions and Projects

Ultimately, hazard mitigation priorities are determined by Hyde Park’s ability to finance and implement these activities with the Town’s existing tax base. The mitigation activities will be completed as funding, time, and public support will allow. When weighing investments in hazard mitigation, Hyde Park prioritizes projects that generate the most favorable cost to benefit ratio based on project cost for the greatest number or residents benefitting, as well as other criteria listed here:
Does it respond to a significant hazard?
What is the likelihood of funding?
Does the measure protect threatened infrastructure?
Can the action be implemented quickly?
Is the action socially and politically acceptable?
Is the action technically feasible?
Is the action administratively realistic?
Does the action produce a reasonable cost-benefit ratio?
Is the action environmentally-sound?

It is important to reiterate here that the jurisdictional authorities of both the Town and the Village are relied upon in this plan. For example, the Village Trustees have jurisdiction over the electric, water, and sewer utilities in the Village area while the Town Selectboard has jurisdiction over the highway department. Both bodies jointly share jurisdiction over the zoning bylaws, unified Town and Village Plan, as well as this LHMP. As a result, continuing with these examples, the Village has the resources to maintain electric service infrastructure while the Town has the resources to maintain the road infrastructure. The Town and Village both have resources and authority over planning activities including emergency management. Both jurisdictions cooperate to incorporate hazard mitigation actions into planning mechanisms.

The Village relies on the Town to manage participation in the NFIP program. The Town and Village are cooperatively working on floodplain management requirements including SFHAs and Vermont’s Flood Resiliency legislation. Unless otherwise specified, the actions listed in the following table (Figure 10) are the responsibility of both the jurisdictions, to be executed in a cooperative manner, similar to the methods used to manage the unified plan and unified bylaws.
<table>
<thead>
<tr>
<th>Mitigation Action</th>
<th>Hazard Addressed</th>
<th>Responsible Party(ies)</th>
<th>Timeline</th>
<th>Funding Sources</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inspect culvert conditions &amp; update inventory</td>
<td>Flooding</td>
<td>LCPC Transportation Planner; Road Foreman</td>
<td>2015 - 2020</td>
<td>LCPC Transportation Planning Initiative</td>
<td>Low</td>
</tr>
<tr>
<td>Update flood hazard regulations to conform with State Flood Resiliency legislation</td>
<td>Flooding</td>
<td>LCPC Senior Planner; Hyde Park Planning Commission</td>
<td>2015 (in progress)</td>
<td>Emergency management planning, VT Agency of Commerce and Community Development</td>
<td>Low</td>
</tr>
<tr>
<td>Adopt development standards to limit or restrict new development in floodplain areas</td>
<td>Flooding</td>
<td>LCPC Senior Planner; Hyde Park Planning Commission</td>
<td>2015 (in progress)</td>
<td>Emergency management planning, VT Agency of Commerce and Community Development</td>
<td>Low</td>
</tr>
<tr>
<td>Establish stormwater management guidelines for new and existing development; Rainwater/ snowmelt can cause flooding and erosion in developed areas.</td>
<td>Flooding</td>
<td>LCPC Senior Planner; Hyde Park Planning Commission</td>
<td>2015 (in progress)</td>
<td>Emergency management planning, VT Agency of Commerce and Community Development</td>
<td>Low</td>
</tr>
<tr>
<td>Conduct NFIP community workshops to provide information for property owners</td>
<td>Flooding</td>
<td>LCPC Regional Planner, LEPC 11</td>
<td>2015 - 2020</td>
<td>Emergency management planning or hazard mitigation planning grants; FEMA free resources</td>
<td>Low</td>
</tr>
<tr>
<td>Advise the public about local flood hazards, flood insurance, and flood protection measures</td>
<td>Flooding</td>
<td>LCPC Regional Planner; Hyde Park Planning Commission</td>
<td>2015 - 2020</td>
<td>Emergency management planning or hazard mitigation planning grants; FEMA free resources</td>
<td>Low</td>
</tr>
<tr>
<td>Promote fuel tank tie-down program</td>
<td>Flooding</td>
<td>Emergency Management Coordinator, LEPC</td>
<td>2015 - 2020</td>
<td>LEPC 11 through State funds</td>
<td>Low</td>
</tr>
<tr>
<td>Mitigation Action</td>
<td>Hazard Addressed</td>
<td>Responsible Party</td>
<td>Timeline</td>
<td>Funding Sources</td>
<td>Cost</td>
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<tr>
<td>Upgrade minimum culvert sizes to VTrans recommendations to lessen flood damage</td>
<td>Flooding</td>
<td>Town Administrator; Road Foreman; LCPC Transportation Planner</td>
<td>2015</td>
<td>LCPC Transportation Planning Initiative; Town budget</td>
<td>Low</td>
</tr>
<tr>
<td>Integrate dam inspection reports and emergency plan protocols into this plan; exercise and train to mitigate impacts of dam failure</td>
<td>Dam Failure</td>
<td>Town Administrator; Village General Manager; Emergency Management Director</td>
<td>2015</td>
<td>Town appropriations, LCPC emergency management planning grants</td>
<td>Low</td>
</tr>
<tr>
<td>Establish contracts with potable water supply providers and emergency fill station locations</td>
<td>All Hazards</td>
<td>Selectboard, Emergency Management Director</td>
<td>2015</td>
<td>Town &amp; Village budgets; State and federal grants</td>
<td>Low</td>
</tr>
<tr>
<td>Inspect roof snow load capacity at emergency shelters and offices; upgrade if needed</td>
<td>Winter Storms</td>
<td>Town Administrator, working with State Fire Marshal</td>
<td>2015 - 2020</td>
<td>Town &amp; Village budgets</td>
<td>Low</td>
</tr>
<tr>
<td>Distribute information on snow and wind loads to building permit applicants</td>
<td>Winter Storms; Wind Storms</td>
<td>Zoning Administrator</td>
<td>2015 - 2020</td>
<td>FEMA free brochures, building permit fees</td>
<td>Low</td>
</tr>
<tr>
<td>Establish Highway Department mutual aid agreement to increase response time; aid in FEMA reimbursement program</td>
<td>All Hazards</td>
<td>Selectboard, Trustees, Road Foreman; LCPC Transportation Planner; LEPC 11 Chair</td>
<td>2015 - 2016</td>
<td>LCPC Transportation Planning Initiative; Town budget; Vermont League of Cities and Towns</td>
<td>Low</td>
</tr>
<tr>
<td>Distribute LEOP to promote general emergency awareness and shelter locations</td>
<td>All Hazards</td>
<td>Town Administrator; Village General Manager; Emergency Management Director</td>
<td>Annually, 2015 - 2020</td>
<td>No cost</td>
<td>Low</td>
</tr>
<tr>
<td>Mitigation Action</td>
<td>Hazard Addressed</td>
<td>Responsible Party</td>
<td>Timeline</td>
<td>Funding Sources</td>
<td>Cost</td>
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</tr>
<tr>
<td>Maintain a minimum 10ft roadside clear zone to mitigate against debris</td>
<td>Winter Storms; Wind Storms</td>
<td>Road Foreman and highway department</td>
<td>2016 – 2018</td>
<td>Town budgeting</td>
<td>Low</td>
</tr>
<tr>
<td>Maintain vegetation management schedule for electric ROW</td>
<td>Winter Storms; Wind Storms</td>
<td>Electric Department Manager</td>
<td>2015 - 2020</td>
<td>Electric Department budget</td>
<td>Low</td>
</tr>
<tr>
<td>Continue to participate in Electric Provider mutual aid agreements</td>
<td>All Hazards</td>
<td>Village Trustees</td>
<td>Ongoing, 2015 - 2020</td>
<td>no cost unless activated, then reimbursed</td>
<td>Low</td>
</tr>
<tr>
<td>Consider regulations and permit conditions for building permit applicants to incorporate design standards to minimize wind damage</td>
<td>Wind Storms</td>
<td>Zoning Administrator, Development Review Board, Planning Commission</td>
<td>2017 - 2020</td>
<td>Permit applicants, VT Municipal Planning Grant</td>
<td>Low</td>
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<tr>
<td>Provide regular HAZMAT training to emergency response personnel</td>
<td>Hazardous Material Spill</td>
<td>Fire Department Chiefs</td>
<td>2015 - 2020</td>
<td>Fire Department annual training program</td>
<td>Low</td>
</tr>
<tr>
<td>Public awareness for lightning hazards and safety information about downed power lines</td>
<td>Lightning and Electrical Hazards</td>
<td>Fire Department; Ambulance service</td>
<td>2015 - 2020</td>
<td>Fire Department budget; FEMA materials</td>
<td>Low</td>
</tr>
<tr>
<td>Establish &quot;hazard awareness week&quot; to promote awareness and preparedness to the public. Such as: distribute FEMA pamphlets, demonstrate VTAlert and GIS flood programs, host hazards workshop, or use outreach programs to advise homeowners of risk to life, safety, and health</td>
<td>All Hazards</td>
<td>Emergency Management Director; LEPC Chair; LCPC Regional Planner</td>
<td>2015 - 2020</td>
<td>LEPC 11</td>
<td>Low</td>
</tr>
<tr>
<td>Mitigation Action</td>
<td>Hazard Addressed</td>
<td>Responsible Party</td>
<td>Timeline</td>
<td>Funding Sources</td>
<td>Cost</td>
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<tr>
<td>Offer hazard susceptibility audits of local small businesses</td>
<td>All Hazards</td>
<td>Emergency Management Director, Lamoille Economic Development Corporation</td>
<td>2015 - 2020</td>
<td>Lamoille Economic Development Corporation; VT Agency of Commerce and Community Development</td>
<td>Low</td>
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<tr>
<td>Continue annual water system hydrant testing and flushing</td>
<td>Structures Fire</td>
<td>Fire Department Chiefs</td>
<td>2015 - 2020</td>
<td>Fire Department budget; Village budget</td>
<td>Low</td>
</tr>
<tr>
<td>Continue to provide regular First Responder trainings</td>
<td>Highway Crashes; All Hazards</td>
<td>Emergency Management Director and Coordinator; Fire Chief; NEMS Chief</td>
<td>2015 - 2020</td>
<td>LEPC 11; DEMHS Training and Exercise Plan</td>
<td>Low</td>
</tr>
<tr>
<td>Update Capital Budget annually for mitigation measures</td>
<td>All Hazards</td>
<td>Selectboard, Trustees</td>
<td>2015 - 2020</td>
<td>Town &amp; Village budgets</td>
<td>Low</td>
</tr>
<tr>
<td>Implement the 2011 Community Wildfire Protection Plan</td>
<td>Wild/ Forest Fire</td>
<td>Fire Department Chief, Emergency Management Director, LCPC Regional Planner</td>
<td>2018 – 2019</td>
<td>LCPC Emergency Management Planning Grant funds</td>
<td>Low – Medium</td>
</tr>
<tr>
<td>Inspect road side ditches &amp; repair as needed</td>
<td>Flooding</td>
<td>Road Foreman</td>
<td>2015 - 2020</td>
<td>Better Back Roads program</td>
<td>Low – Medium (for repair)</td>
</tr>
<tr>
<td>Install redundancies and loop feeds in electric grid to minimize outages</td>
<td>All Hazards</td>
<td>Electric Department, with guidance from Manager</td>
<td>2015 - 2020</td>
<td>Village Electric Department budget; state and federal grants</td>
<td>Very High</td>
</tr>
<tr>
<td>Improve radio communications for public works department and emergency responder communication; practice operability of communications</td>
<td>All Hazards</td>
<td>Town Administrator; Village General Manager; Fire Chief</td>
<td>2015 - 2016</td>
<td>VCOMM, hazard mitigation, other Federal grants</td>
<td>High – Very High</td>
</tr>
<tr>
<td>Upgrade electrical poles and lines for greater snow/ice resistance</td>
<td>Winter Storms</td>
<td>Electric Department; Trustees</td>
<td>2017 - 2020</td>
<td>Electric department budget</td>
<td>Very High</td>
</tr>
<tr>
<td>Mitigation Action</td>
<td>Hazard Addressed</td>
<td>Responsible Party</td>
<td>Timeline</td>
<td>Funding Sources</td>
<td>Cost</td>
</tr>
<tr>
<td>---------------------------------------------------------------------------------</td>
<td>------------------</td>
<td>------------------------------------------------</td>
<td>----------------</td>
<td>--------------------------------------------------------------------------------</td>
<td>----------------</td>
</tr>
<tr>
<td>Increase size of salt storage or find second storage location to expand supply</td>
<td>Winter Storms</td>
<td>Town Administrator; Road Foreman</td>
<td>2016 - 2018</td>
<td>State and federal grants (e.g. ERP, HMGP, VTrans)</td>
<td>High – Very High</td>
</tr>
<tr>
<td>Relocate hard-to-reach electrical poles and lines along roads</td>
<td>All Hazards</td>
<td>Hyde Park Electric Department Manager and staff</td>
<td>2015 - 2020</td>
<td>Village Electric Department budget</td>
<td>Very High</td>
</tr>
<tr>
<td>Bury power lines where practicable and as maintenance is needed</td>
<td>All Hazards</td>
<td>Electric Department Manager</td>
<td>2017 - 2020</td>
<td>Village Electric Department budget</td>
<td>Very High</td>
</tr>
<tr>
<td>Anchor roof-mounted mechanical equipment on public buildings</td>
<td>Wind Storms</td>
<td>Public Works Department</td>
<td>2018 – 2021</td>
<td>Town &amp; Village budgets; other state or federal grants</td>
<td>High</td>
</tr>
<tr>
<td>Upgrade existing stormwater management systems and install new systems in feasible unserved locations to attenuate flood storage</td>
<td>Flooding</td>
<td>Road Foreman and Public Works Dept.</td>
<td>2017 - 2020</td>
<td>Watershed management, Emergency management planning, or hazard mitigation planning grants</td>
<td>High – Very High</td>
</tr>
<tr>
<td>Upgrade box culvert on Garfield Rd to reduce downstream erosion and road washouts</td>
<td>Flooding</td>
<td>Town Administrator; Road Foreman</td>
<td>2016 - 2018</td>
<td>FEMA or VTrans grant programs</td>
<td>Very High</td>
</tr>
<tr>
<td>Procure emergency generators for key locations and critical facilities for power grid failure</td>
<td>All Hazards</td>
<td>Village General Manager; Emergency Management Director; LCPC Regional Planner; School Board</td>
<td>2015 - 2020</td>
<td>Emergency management planning or hazard mitigation planning grants; other grant sources; private contributions; School Board budget</td>
<td>Very High</td>
</tr>
</tbody>
</table>

*Cost is evaluated based on a scale of “Low” (0 - $5,000), “Medium” ($5,001 - $15,000), “High” ($15,001 - $50,000) or “Very High” (More than $50,000)
FLOODPLAIN MAP
TOWN OF HYDE PARK

Legend

- SPECIAL FLOOD HAZARD AREA
- RIVER CORRIDOR/FEH
- STATE HIGHWAY
- STATE FOREST HIGHWAY
- CLASS 2 ROAD
- CLASS 3 ROAD
- CLASS 4 ROAD
- PUBLIC ROAD / UNDETERMINED CLASS
- UNKNOWN / PRIVATE ROAD
- TRAIL
- RIVER / STREAM
- LAKE / POND

Data Sources:
100-Year and 500-Year Flood Zones: Digital Flood Insurance Rate Map (DFIRM), FEMA, 2000. Floodplains for planning purposes only.
River Corridor/Fluvial Erosion Hazard Areas: LCPC and VT ANR River Management, various dates. Much FEH boundary data is based on partial stream assessments and therefore is preliminary in nature.

For planning purposes only. Not for regulatory interpretation.

Traverse Mercator, VT State Plane, Meters, NAD83.

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www.lcpcvt October 2014
TRANSPORTATION CONCERNS
TOWN OF HYDE PARK

Map 2

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Traverse Mercator, VT State Plane, Meters, NAD83.

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www.lcpcvt October 2014

Legend

CRITICAL CULVERTS
BRIDGE WITH FEDERAL SUFFICIENCY RATING LESS THAN 50 (OUT OF 100)

HIGH ACCIDENT LOCATION
HIGH ROAD EROSION RISK

River Corridor/Fluvial Erosion Hazard Area

RIVER CORRIDOR FEH RATING
Extreme
Very High
High
Moderate
Low
Very Low
Not Rated

SPECIAL FLOOD HAZARD AREA

Data Sources:
Bridge Federal Sufficiency Ratings: VTrans, 2009
Critical Culverts: Culverts rated as "critical" or "urgent" in inventories conducted by LCPC since 2011.
Flood Hazard Areas: Digital Flood Insurance Rate Map (DFIRM), FEMA, 2006. Floodplains for planning purposes only.
River Corridors/Fluvial Erosion Hazard Areas: LCPC and VT ANR River Management, various dates. Much FEH boundary data is based on partial stream assessments and therefore is preliminary in nature.
High Road Erosion Risk: Derived from 2014 statewide GIS analysis using soils, slope, and proximity to surface waters.
AREAS OF LOCAL CONCERN
TOWN OF HYDE PARK

Legend
CRITICAL FACILITIES THAT ARE IMPACTED BY:
- Not Impacted by
- 1 Known
- 2 Known
- 3 Known

*Known Hazards are being within the 100-Year Floodplain, 500' of a major road or 1000' of Tier II site.

Data Sources:
AREAS OF LOCAL CONCERN, LCPC, 2014. TIER II sites data derived from Tier II data sheets, 2012.

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Town of Hyde Park Plan Adoption Resolution

For: Town and Village of Hyde Park Vermont Local Hazard Mitigation Plan 2015-2020

The Selectboard of the Town of Hyde Park find that:

A) The adoption of a multi-hazard plan is required as a condition for communities to remain eligible for future Federal Emergency Management Agency (FEMA) mitigation grant funds.

B) The Town of Hyde Park has prepared the Town and Village of Hyde Park Vermont Local Hazard Mitigation Plan 2015-2020, a copy of which is attached as Exhibit A and incorporated herein by reference.

C) The Selectboard has reviewed and considered the Town and Village of Hyde Park Vermont Local Hazard Mitigation Plan 2015-2020.

D) The mitigation strategies and actions identified in the plan have been prioritized as outlined in the Town and Village of Hyde Park Vermont Local Hazard Mitigation Plan 2015-2020. Adoption of this Plan demonstrates Hyde Park’s commitment to implementing mitigation actions to reduce damage from identified hazards.

NOW THEREFORE,

BE IT RESOLVED BY THE SELECTBOARD OF THE TOWN OF HYDE PARK, A MUNICIPALITY OF THE STATE OF VERMONT, AS FOLLOWS:

Section 1. Based on the above findings, which are hereby adopted, the Town and Village of Hyde Park Vermont Local Hazard Mitigation Plan 2015-2020 attached as Exhibit A is approved as the official multi-hazard mitigation plan for the Town of Hyde Park.

Section 2. This resolution shall become effective immediately upon adoption.

The foregoing Resolution is hereby adopted this day of Oct, 2015.

Selectboard Chair

Selectboard Member

Selectboard Member

Selectboard Member

Selectboard Member

Town Clerk received ____________________________________________________________________________
Village of Hyde Park Plan Adoption Resolution

For: Town and Village of Hyde Park Vermont Local Hazard Mitigation Plan 2015-2020

The Trustees of the Village of Hyde Park find that:

A) The adoption of a multi-hazard plan is required as a condition for communities to remain eligible for future Federal Emergency Management Agency (FEMA) mitigation grant funds.

B) The Village of Hyde Park has prepared the Town and Village of Hyde Park Vermont Local Hazard Mitigation Plan 2015-2020, a copy of which is attached as Exhibit A and incorporated herein by reference.

C) The Trustees have reviewed and considered the Town and Village of Hyde Park Vermont Local Hazard Mitigation Plan 2015-2020.

D) The mitigation strategies and actions identified in the plan have been prioritized as outlined in the Town and Village of Hyde Park Vermont Local Hazard Mitigation Plan 2015-2020. Adoption of this Plan demonstrates Hyde Park’s commitment to implementing mitigation actions to reduce damage from identified hazards.

NOW THEREFORE,

BE IT RESOLVED BY THE TRUSTEES OF THE VILLAGE OF HYDE PARK, A MUNICIPALITY OF THE STATE OF VERMONT, AS FOLLOWS:

Section 1. Based on the above findings, which are hereby adopted, the Town and Village of Hyde Park Vermont Local Hazard Mitigation Plan 2015-2020 attached as Exhibit A is approved as the official multi-hazard mitigation plan for the Village of Hyde Park.

Section 2. This resolution shall become effective immediately upon adoption.

The foregoing Resolution is hereby adopted this 14th the day of October, 2015.

Trustee Chair

Trustee Member

Trustee Member

Trustee Member

Town Clerk received