HAZARD MITIGATION PLAN
HARTFORD, VT

2014-2019

ACKNOWLEDGEMENTS

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April 2014

CERTIFICATE OF PLAN ADOPTION

Town of Hartford Selectboard
Formal Resolution Adopting the 2014-2019 Hartford Hazard Mitigation Plan

WHEREAS, the Town of Hartford has worked with local officials, residents and regional partners to identify hazards, analyze past and potential future losses due to natural and manmade-caused disasters, to identify strategies for mitigating future losses, and to prepare an updated hazard mitigation plan for the town; and

WHEREAS, duly-noticed public meetings were held by the Hartford Selectboard on 9-3-2013 and 11-26-13 to present and receive public comment on the draft 2014-19 Hartford Hazard Mitigation Plan; and

WHEREAS, the draft 2014-19 Hartford Hazard Mitigation Plan was submitted to the Vermont Division of Emergency Management and Homeland Security and the Federal Emergency Management Agency for review on December 2, 2013 and, as revised to incorporate FEMA recommendations on June 17, 2014;

WHEREAS, FEMA approved the updated 2014-19 Hartford Hazard Mitigation Plan on June 24, 2014 pending adoption by the Hartford Selectboard;

NOW, THEREFORE BE IT RESOLVED that the Hartford Selectboard hereby adopts this 2014-19 Hartford Hazard Mitigation Plan for municipal use and implementation.

Dated this 24th day of June, 2014.

Peter S. DeTelsi
Chair, Hartford Selectboard

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I. INTRODUCTION

Hazard mitigation planning helps a community identify and prioritize actions it can take to reduce or eliminate risks to people and property from natural and manmade hazards. The Federal Emergency Management Agency (FEMA) further describes hazard mitigation planning as a process that state and local governments should use to identify community risks and vulnerabilities associated with known hazards, to better plan for, withstand and recover from disaster events (www.fema.gov/plan/mitplanning).

PURPOSE

The purpose of this hazard mitigation plan is to identify and plan for both natural and manmade hazards facing the Town of Hartford, and to develop strategies to reduce long-term risks. Hazards cannot be eliminated, but it is possible to determine those hazards that are most likely to occur, where they may be most severe and cause the most damage, and what can be done to reduce their impacts on the community. Benefits of hazard mitigation planning include:

- increased public awareness of natural and manmade hazards and community vulnerabilities,
- improved understanding of potential risks and possible risk reduction measures associated with existing and future development,
- strengthened partnerships and lines of communication among diverse interests, including opportunities to leverage and share resources,
- increased community and voter support for specific actions the town may propose to reduce future losses,
- a reduction in physical, financial and emotional losses caused by natural and manmade disasters,
- increased community resilience to withstand and more quickly recover from disasters, and
- community eligibility for federal hazard mitigation grants and aid prior to and following federally-declared disasters, and for additional state matching funds for associated repairs and improvements.

OVERVIEW

The previous Hartford Hazard Mitigation Plan was adopted by the town on October 21, 2008 as a seven page "annex" to the multi-jurisdictional All-Hazard Pre-Disaster Mitigation (PDM) Plan adopted by the Two Rivers-Ottauquechee Regional Commission (TRORC). That regional plan and Hartford annex expired on September 30, 2013.

Since the last plan was adopted and approved by the Federal Emergency Management Agency (FEMA) much of Vermont, including Hartford, was hit hard by Tropical Storm Irene in August 2011 – resulting in the largest, most damaging and costly flood since 1927 – by some estimates a "130-year" flood.

Many properties in White River Junction, Hartford Village and Quechee were inundated; buildings in West Hartford, the West Hartford and Quechee bridges, and town infrastructure suffered serious damage; and much of the floodplain, including local parks and farm fields, was covered with several inches of silt. The town is now winding down its recovery efforts –

hosting a celebration of the reopening of the Quechee Bridge in December 2012. Local lessons learned from Irene helped inform this planning process.

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 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, flood and fluvial erosion hazard area regulations, local emergency operation plans, and a local hazard mitigation plan approved by FEMA.

Also of note – under changes to state planning law (24 V.S.A. Chapter 117), as of July 2014 all municipal comprehensive 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. Hartford intends to respond to new state requirements in the coming year, following the issuance of new state river corridor maps and guidance, and FEMA approval of its updated hazard mitigation plan.

Vermont Emergency Management submitted its draft state hazard mitigation plan to FEMA for review in the summer of 2013. The state plan and available guidance from FEMA provide the framework for this update. This plan represents a complete rewrite of the previous Hartford Annex, as a standalone, single jurisdiction hazard mitigation plan that updates and builds upon previous mitigation plans, and augments the Hartford Master Plan adopted May 29, 2012. The planning process resulting in this update was part of a FEMA-funded Hazard Mitigation Planning Grant awarded post-Irene 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.

Hartford agreed to participate under the FEMA grant, as an example of a larger, professionally-staffed community with strong technical resources, to help test and hone public outreach tools, and to help develop mitigation strategies appropriate to communities that have adopted comprehensive and strategic plans, and a range of land use regulations and ordinances.

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 hazard events, and to identify and plan for the most probable 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.

This plan reflects local priorities for hazard mitigation, as determined from the community planning process, and best available federal, state and local information. Action items are included to monitor the success or effectiveness of implementation and results, and to inform the next update of the plan.

II. PLANNING PROCESS

PUBLIC PROCESS

Two sets of public meetings were held to gather public input into this update of the hazard mitigation plan: an initial set to explain the planning process being launched and collect stories on the history of hazards in the community, and a second set to provide more technical information on local hazards, and identify priority hazards and possible mitigation strategies.

Hartford is a large and disparate community, so each set of public meetings was held in multiple locations. The first group of meetings was held above the Upper Valley Food Co-op in White River Junction, at the Quechee Library in Quechee Village, and in the West Hartford Village Store. The second set was held in the Hartford Municipal Building in downtown White River Junction and at the West Hartford Village Store. In each case the meetings were noticed in the *Valley News*, on the town website and via posters in public locations. Email notice was also provided to town clerks and other contacts from surrounding towns who had expressed interest, as well as the Two Rivers-Ottauquechee Regional Commission, of which the town is a member. Commission staff has assisted the town with its past and present hazard mitigation planning efforts.

West Hartford Public Meeting

A broader effort to increase attendance and participation was also made through connections with various organizations serving the larger community, including:

- The United Valley Interfaith Project, a nonprofit organization representing thirteen churches, one synagogue and one nongovernment organization. Many of its members worked as post-Irene volunteers and some were also victims,
- Upper Valley housing nonprofits, including the Upper Valley Haven, the Upper Valley Housing Coalition and Cover,
- Transition Town Hartford and the East Central Vermont Sustainability Coalition,
- Vital Communities, a nonprofit serving the Upper Valley Region,
- the Hartford Chamber of Commerce, which in turn sent notices to its member base of area businesses,
- the Hartford Schools Superintendent, and
- the Upper Valley Lake Sunapee Regional Planning Commission, covering towns on the New Hampshire side of the Connecticut River.

A total of twenty-one people (not counting staff and facilitators) attended the first set of three meetings. These included two Selectboard members, the Planning Commission chair, and two Conservation Commission members. The best attended meeting by far (and in the tiniest venue) was the West Hartford meeting, with a dozen people crowded into the West Hartford Village Store's new post office section, added after Tropical Storm Irene. The local cable station also covered the first set of public meetings. The results of the second set of public meetings addressing priority hazards, perceived community vulnerabilities, and recommended mitigation strategies, are highlighted elsewhere in this plan (Appendix D).

Following the public meetings there were multiple Planning Commission meetings, which also included members of the Conservation Commission, to digest public feedback and to identify and discuss possible mitigation strategies. These meetings were noticed via standard public meeting postings as well as to a list of interested persons/organizations and on the town website. Short articles on the planning process were also published in the *Valley News*, along with legal notices. Final meetings to approve the plan, including the recommended implementation program, were held with the Selectboard and Town Manager during their regularly scheduled meetings, as noticed in the *Valley News*, to interested persons and on town website, and recorded on community cable television.

DATA AND INFORMATION

Much of the information for this plan was provided by the Hartford Department of Planning and Development Services (DPDS) and taken from the 2012 Hartford Master Plan and other available federal, state and local datasets and studies. These included the 2013 Vermont State Hazard Mitigation Plan (reviewed in draft form), federal census and hazards event information, and historical accounts.

The information gathered via public process was augmented by a breakfast meeting with downtown business owners and interviews with key personnel, including public works staff and emergency service providers (see footnoted information). The town assessor, working with the senior planner, produced the information for the flood risk assessment. Technical expertise and plan maps were provided by the Two Rivers-Ottauquechee Regional Commission.

INTEGRATION INTO TOWN DECISION-MAKING

The current Hartford Master Plan, Capital Improvements Program and Emergency Operations Plan, as well as related municipal strategic plans and studies, helped inform development of this plan. Once adopted and approved, this plan will then be incorporated in the next iterations of related town plans and programs. The implementation program includes recommended strategies to update town infra-structure standards, flood hazard regulations, and related development review standards under the town's zoning and subdivision bylaws. Hartford's professional staff will continue to work collaboratively with town boards, volunteers and regional and state officials to implement the plan,

III. COMMUNITY PROFILE

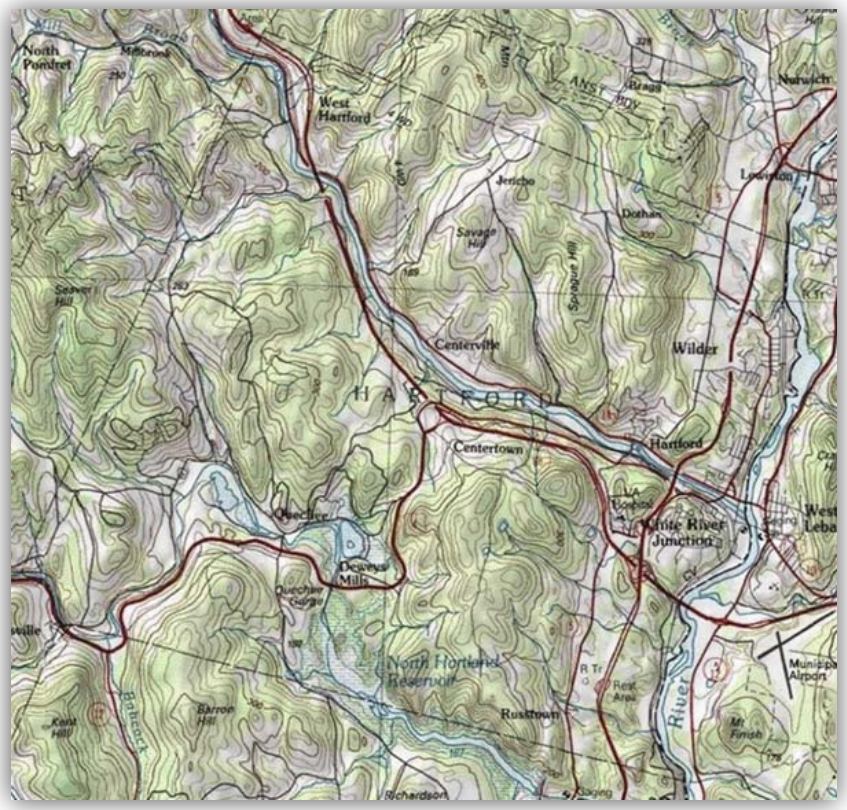
SETTING

The Town of Hartford, consisting of approximately 29,438 acres or 46 square miles, is located along the Connecticut River in Windsor County Vermont. Hartford is functionally part of the larger Upper Valley Region, spanning the Connecticut in Vermont and New Hampshire. Neighboring Vermont towns include Woodstock, Sharon, Norwich, Hartland and Pomfret. The New Hampshire towns of Hanover, Lebanon and Plainfield lie directly across the river.

The White River bisects the town and joins the Connecticut River in White River Junction, the town's largest village. The historic villages of West Hartford and Hartford are also located on the White River. The Ottauquechee River meanders in and out of the southern part of town, through Quechee Village. The village of Wilder sits above the Wilder dam on the Connecticut River. Elevations in town range from about 340 feet above sea level along the Connecticut River at the Hartland boundary to the town's highest hills, peaking at 1,575 feet along the Pomfret boundary.

The Town of Hartford includes five unincorporated villages (all listed on the National Register of Historic Places) a mix of more recent residential and commercial development, rural farmland along its major river valleys, and more sparsely settled forested uplands.

White River Junction, the town's historic downtown, rail center and warehouse district, has long served as a major



transportation hub in the region – initially for river travel, followed by rail and most recently the state's interstate highway system, where Interstates 89 and 91 meet. White River Junction developed as the first major railroad center north of Boston – as reflected in its late 18th and early 19th century urban architecture. Today it serves as the center of the town's commercial, civic and cultural life. The Hartford Municipal Building is also located downtown. Major employers located here include the Veterans Administration (VA) Hospital, the US Postal Service and state government.

White River Junction's central business district is undergoing a renaissance of new investment and development, supported in part by the 2009 *White River Junction Revitalization Plan* and the state-approved White Rive Junction Tax Increment Financing (TIF) District. Downtown redevelopment has included the adaptive reuse of several historic buildings – including former freight houses and an elegant old post office – to house new businesses and restaurants, a professional theater (Northern Stage), a music venue (Tupelo Music Hall) and the Center for Cartoon Studies.

Another key commercial area – the Sykes Mountain Avenue/ Route 5 Commercial Area – includes a concentration of commercial development on US 5 in the vicinity of the interchange junction of Interstates 89 and 91. This area includes several car dealerships, motor inns and restaurants, banks, the local bus station, and other retail and office uses, all within view of the Veterans Hospital complex. This area is also within the boundary of the state-designated Hartford Growth Center.

The Hartford Municipal Building is located in the mapped floodplain. Sections of White River Junction along the banks of the White and Connecticut Rivers flooded during Irene, but much of the central square and buildings along North and South Main Streets were untouched by the storm. Flash flooding in 2013, on the two-year anniversary of Irene, had more of an impact, filling the basements of several downtown businesses with stormwater.

Quechee Village, listed on the National Register as a historic mill village, is the site of the famous Quechee Gorge – a narrow canyon one mile long and 165 feet deep that is crossed by US 4.

Like many other Vermont towns, Hartford has a mixture of densely settled villages surrounded by open countryside. Hartford has always served as a major gateway to the State, first via the Connecticut and White Rivers, then the railroads, and most recently the interstate highways…

Much of Hartford's land use planning and decision-making revolves around the appropriate use of our manmade and natural resources. Manmade resources include public water and wastewater systems, the road network, parking lots, public and private buildings, farms and recreational facilities. Hartford's natural resources include forests, agricultural lands, surface and ground water, scenic views, clean air, wildlife, minerals and soils. They present both opportunities for and constraints on development…

2012 Hartford Master Plan

Quechee is also home to the Quechee Lakes planned resort community, first established in the late 1960s. This development has attracted higher income second home investment and, in turn, higher-end retail, lodging and restaurant establishments – including the Simon Pearce glass blowing and pottery facility located in the old Quechee Mill. The village includes a library, a public elementary school, two private elementary schools and a private high school.

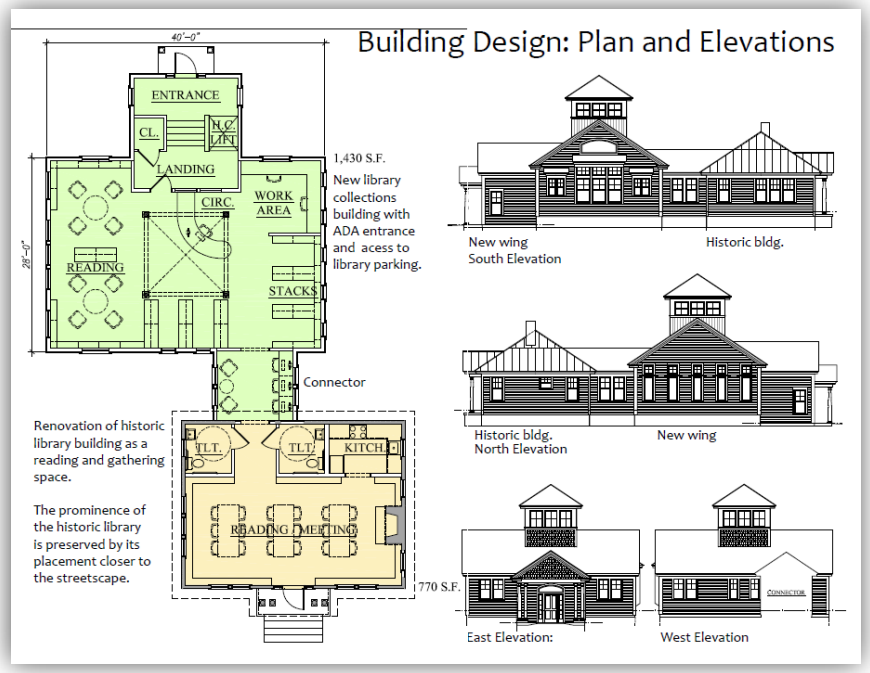
Quechee Gorge State Park, a state campground and recreation area, is located above the Quechee Gorge, off of US 4. The land for the park, purchased by the US Army Corps of Engineers as part of a larger flood control plan (which included the construction of the North Hartland Dam), was subsequently leased to the state. Most structures in Quechee are not in the mapped flood hazard area, but the Quechee Covered Bridge

suffered extensive damage from Tropical Storm Irene, resulting in its closure for more than a year. The main sewer line serving Quechee Village, running under the riverbed, was also damaged. The lower portion of Quechee Main Street flooded, resulting in severe damage to a real estate business and Simon Pearce. Other historic sites, including the Theron Boyd House site (not the building) were also affected by erosive flooding.

Wilder Village and Hartford Village both include a mix of low and moderate income housing and commercial and industrial uses. Hartford Village, located along VT 14, includes a convenience store/gas station, and a library and two churches. Wilder, with its own I-91 interchange, has attracted new condominium and office park development. It also has an elementary school and post office.

West Hartford, surrounded by farm fields and forests and crossed by the Appalachian Trail, is the most rural and remote of Hartford's five villages. The village is located in the northwestern section of town on the Sharon/Pomfret border, sandwiched between VT 14, the rail line and the White River. The village is still home to several historic buildings, including a church, library, and the West Hartford Village Store, in operation since 1905.

Almost half of West Hartford was wiped out by the 1927 flood. The village was hit hard again during Tropical Storm Irene. Several homes and civic buildings, including the library, Post Office and general store, were flooded by high water that also damaged the bridge over the White River. Deep silt deposits across VT 14 temporarily isolated the community from the rest of the town. The West Hartford Congregational Church, which did not flood, served as the local hub for Irene relief efforts.
The West Hartford Village Store reopened in April 2012 after extensive repair work, and resumed its importance as a village gathering place. Most homes have also been rebuilt, but a few of the most damaged have been included in the FEMA buyout program, and will be demolished. Reconstruction of the West Hartford library, now underway, includes elevating the existing building above flood levels, floodproofing and landscaping.



GROWTH TRENDS

The Town of Hartford experienced steady growth and development throughout much of the 20th century and the first six years of the 21st century. Since 2006, however, local growth has slowed significantly, mirroring regional and state trends. As noted in the 2013 State Hazard Mitigation Plan, because of this, the region's "overall hazard risk from flood and winter storms has remained unchanged" (p. 4-132).

Population. According to the most recent US Census counts, Hartford's 2010 population numbered 9,952, indicating that the year-round population declined by 4% between 2000 and 2010. As a result Hartford dropped from the 8th to the 9th most populated municipality in the state. It remains the largest community in the county, making up nearly 18% of Windsor County's total population. The town has an overall population density of 221 persons per square mile – much higher than that for the county (58 persons per square mile), but most of the town's year-round population is concentrated in White River Junction and its other villages. The highest local population loss (-11%) occurred in White River Junction, while Wilder grew at 3.3%.

Hartford's population is also aging, again following regional and state trends. The median age of town residents in 2010 was 43.3 –up from 40 in 2000. Most age groups in Hartford decreased between 2000 and 2010, with the exception of 20-24 year olds and those 55 years and older. The town's seniors (65+ years) numbered 965 in 2010, making up 17% of the local population, and 16% of the county's senior population.

	2000	2010	Change
Population	10,367	9,952	-963 (-4.0%)
Households	4,509	4,446	-63 (-1.4%)
Housing Units	5,493	5,816	323 (5.9%)
Source: US Census			

This segment of the population is expected to grow in share in coming years, requiring more in services – including medical and emergency services. The state has projected that by 2020, the county's senior population could more than double.[1] While Hartford's total resident population is projected to reach no more than 10,300 by 2020, by then its senior population could make up more than 20% of the total – and more than 50% of local property taxpayers.

The town's seasonal population is harder to estimate, but given that there were 1,030 vacation homes identified in the 2010 US Census – including those in Quechee Lakes – the town's total effective resident population, for planning purposes, could increase by more than 2,000 persons, assuming full occupancy at two persons per unit.

Hartford's more vulnerable populations are harder to identify but generally include the town's elderly residents – especially those living on their own – those with special medical and communication needs, and those with limited resources to respond to and recover from disaster events. For purposes of

[1] Vermont Population Projections, 2010-2030 (August 2013), VT Agency of Commerce and Community Affairs; Scenario A (higher in-migration scenario).

emergency response planning, identifying vulnerable groups and individuals is generally done in association with local service providers and utilities.

The US Census no longer tracks special needs populations. At the local level the Census Bureau instead provides 5-year American Community Survey (ACS) estimates. Given sampling over a 5-year period and relatively high margins of error, these estimates are generally suspect, and no longer track poverty rates and disability status. The most recent ACS estimates (2007-2011) available for Hartford suggest that:

- 5% of the town's working population is unemployed,
- 5% speaks a language other than English at home, and
- 1.5% speaks English less than very well.

Households. The number of households in Hartford also decreased in the 2000s, with a decline in population. Of the 4,446 households counted in the 2010 US Census:

- 59% (2,618) were family households – though only 25% (1,090) were families with children,
- 9% (381) were single parent households, and
- 27% (1,205) included someone 65 years or older.

The average size of local households also has continued to shrink, reflecting in part the town's aging population and an relative increase in the number of one- and two-person households. The average household size for year-round units in 2010 was 2.22 persons. As reported in 2010:

- 33% (1,459) of local households were one-person households,
- 38% (553) of those living alone were senior citizens,
- 66% (2,953) of households were homeowners, and
- 34% (1,493) were renters.

In 2010, Hartford also had 77 residents in "group quarters" – including 57 nursing home residents and 20 in other non-institutionalized, group living arrangements.

The loss of a home, even temporarily due to a disaster, is difficult for anyone, but can be especially hard for homeowners who have large mortgages or don't have adequate insurance coverage – including flood insurance – and for displaced households that don't have the financial resources to secure other housing. ACS estimates (2007-2011) suggest that:

- 68% of local homeowners carry a mortgage –they do not own their home outright,
- 32% of local households are very low income households, with incomes less than 50% of the estimated median of $52,455,
- 11% of households receive food stamp/SNAP benefits, and 3% receive cash public assistance,
- housing costs exceed 30% of household income for 40% of homeowners and 56% of renters, and
- 6% of local households do not have a vehicle,

Housing. The town's housing stock reportedly increased by 323 units (6%) between 2000 and 2010 – despite a depressed housing market during the "Great Recession" that began in 2008. This increase was due largely to second home construction, which accounted for 62% of new units. In 2010, vacation

units, mostly second homes and condos located in Quechee Lakes, made up 19% of the town's total housing.

The pace of local housing development has slowed. The town issued permits for 735 units from 2000 through 2008 (averaging 82 units per year) – including permits for several multifamily housing developments. Between 2009 and 2012 permits were issued for an additional 26 units (averaging 6.5/year) – all for single family dwellings (US Census Bureau Annual Building Permit Estimates). Many of these have yet to be built.

Hartford's housing stock in 2010 made up 18% of the county total. ASC estimates (2007-11) also suggest that:

- 52% of Hartford's housing units are detached single-family homes, and another 6% are mobile homes,
- Multi-family units (3+ units per building) make up 31% of local housing; and
- 31% of the town's housing stock is more than 50 years old (built prior to 1960).

Mobile homes provide much needed affordable housing, but are also generally more at risk of damage from flooding and high winds. According to local tax list information, as of 2012 there were 409 mobile homes in Hartford, including 307 in mobile home parks, and 102 on separate lots. There are five mobile home parks in town, including one – Olcott Falls– owned by the Vermont State Housing Authority. None are located in mapped floodplains or high wind areas. Two parks are connected to municipal water and sewer systems; the other three are served by private systems that are subject to state oversight.

Hartford no longer maintains a local housing authority – the Vermont State Housing Authority now manages the Section 8 program serving 43 local households. There are also four nonprofit housing organizations active in Hartford: Twin Pines Housing Trust, Upper Valley Habitat for Humanity, COVER Home Repair, and the Upper Valley Housing Coalition.

Affordable housing in Hartford includes:

- 17 affordable rental properties that provide 275 income-restricted units, including 83 units specifically for the elderly and/or persons with disabilities, and
- Four hotel/motel lodging facilities and one rooming house that offer a total of 91 rooms for long-term rent.

Hartford also hosts one of Vermont's eleven emergency shelters for the homeless. The Upper Valley Haven maintains two facilities in town – the Byrne Shelter for families and the Hixon House for adults. These facilities serve a regional need, generally within a 60 mile radius of White River Junction. There is also an occasional homeless camp which the Public Safety Department works with The Upper Valley Haven to address.

Other residential facilities in town include one assisted living facility, Valley Terrace, with 61 units and a maximum occupancy of 71 residents; and one 67-bed nursing home, Brookside Health and Rehabilitation.

Hartford's Affordable and Special Needs Housing

Table 3.2. Hartford Affordable Rental Housing Properties

Property	Est.	Address	Units	Elderly/ Disabled
Anna Pluhar House	1993	1673 Maple Street	3	0
Brookview Apts	1986	Bugbee Street	34	0
Colodny Building	1992	92 South Main Street	8	8
Graystone Village	1979	Dewitt Drive	34	34
Hillcrest Manor	1996	265 VA Cutoff Road	9	0
Quechee Pines	1996	Hathaway Road	9	0
Quechee Sunrise	2003	Dawn Drive, Twilight Ct	22	0
School Street Housing	1995	52 Christian Street	8	0
Village Apts	1997	151 Gates Street	14	14
The Briars	1999	647 Bugbee Street	24	0
Northwoods I	2003	95 Templeton Avenue	18	0
Northwoods II	2004	95 Templeton Avenue	13	0
Overlook Housing	2003	Overlook Dr, South Main	13	0
Prospect Street	[NA]	19 Prospect Street	3	0
Windsor Hollow	1994	45 Hollow Drive	27	27
Hollow Drive Housing	2003	60, 151 Hollow Drive	18	0
Stony Creek	2006	2680 Hartford Avenue	18	0
Total			**275**	**83**

Source: VHFA, Vermont Directory of Affordable Rental Housing (10/2013).

Table 3.3. Hartford Mobile Home Parks

Park	Est.	Lots	Leased	Homes
Chambers MH Village	1960	83	69	73
Merrimac MHP	1968	47	47	47
Olcott Falls MHP	---	40	37	40
Tall Timbers MH Community	1977	105	105	105
Woodside Manor	1965	87	87	87
Total		**362**	**345**	**352**

Source: VDHCD, 2010 Vermont Mobile Home Registry.

Table 3.4. Upper Valley Haven Shelter

Byrne Shelter	**2010**	**2011**
Persons Served	125	133
Families Served	41	40
ChildrenServed	68	67
Adults Served	57	66
Median Length of Stay (days)	65	74
Hixon Shelter		
Persons Served	80	146
Men Served	51	102
Women Served	29	44
Median Length of Stay (days)	26	33

Local Economy. Hartford, in part because of its location at the junction of major transportation routes, is a regional employment center for the Upper Valley, along with Lebanon and Hanover. The town has continued to experience some economic growth since 2000 – including the addition of 31 employers and 380 new jobs between 2000 and 2010. As of 2010, there were 466 establishments in Hartford, accounting for 6,158 jobs, as reported to the state for unemployment insurance (covered employment). This does not include most self-employed individuals, farmers and farmworkers.

According to Vermont Department of Labor data, 1,983 jobs (32%) were in the public sector, including federal jobs associated with the Veterans Administration Hospital and the US Postal Service's regional distribution facility in White River Junction – two of the area's largest employers. In 2013, local government, including the school district and town offices, provides 549 jobs (about 9% of the total) – 81% of which are in educational services. Hartford has a smaller share of manufacturing and service sector jobs than the county or state but, as a major transportation hub, has a higher concentration of transportation, communications and utility jobs.

A regional office of the Small Business Development Center is located in the Hartford Municipal Building, providing support services to Hartford businesses. The town has also completed detailed planning for economic development and expects new, larger employers to locate in White River Junction and Sykes Mountain Avenue areas, to take advantage of available water, wastewater and telecommunications infrastructure.

HARTFORD'S TEN LARGEST EMPLOYERS

Employer	Employees
Medical Facility & Regional Offices	1,000
Hartford School District	407
Quechee Lakes Land Owners Association	206
King Arthur Flour	197
U.S. Postal Service	189
Hartford Town Offices	142
Simon Pearce	114
Mascoma Savings Bank Corporate Office	106
Concepts NREC	95
RSD Transportation	90
Resource Systems Group (RSG)	55
White River Paper	50
IBEX	46

Source: Hartford Department of Planning and Development Services. August 2013.

Quechee Lakes, within Quechee Village, is one of the largest planned four-season resort communities in New England, consisting of more than 5,200 acres of commonly owned land and buildings, 1,255 residential and rental properties, two 18-hole golf courses and a clubhouse, lake, and other resort amenities. Slightly more than half of planned development has been built to date.

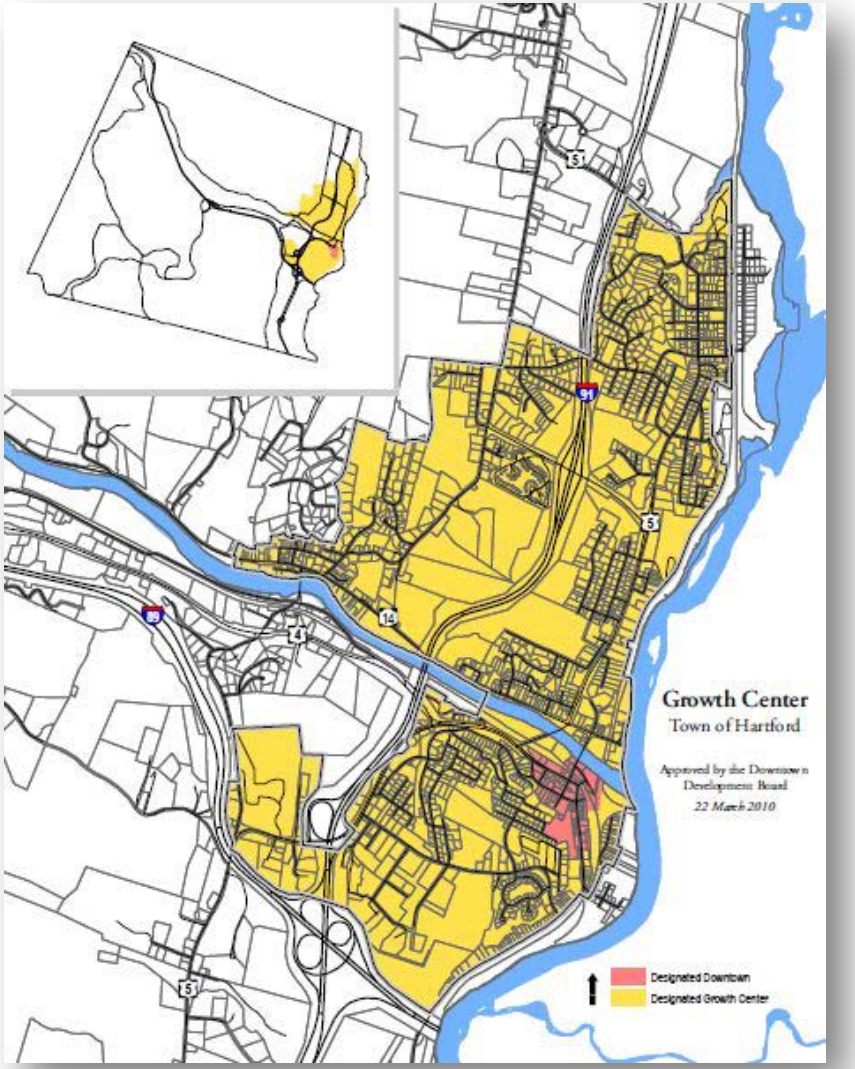
In 2012, Hartford businesses generated $31.3 million in room, meal and alcohol taxes (23% of the county total) and $242.7 million in sales tax receipts (20% of the county total), including $73.2 million in retail taxes (VT Dept. of Taxes, Annual Report).

Hartford's Designated Growth Center

The Hartford Growth Center was approved by the Vermont Downtown Board under the state's growth centers designation program on March 22, 2010. The designated growth center includes White River Junction, also a state-designated downtown, the historic villages of Wilder to the north and Hartford Village to the west, and the Sykes Mountain Avenue Area. This 2,005-acre area comprises approximately 7% of the town's total land area, centered on the most heavily developed portion of town. The Hartford Growth Center has been planned to accommodate approximately 60% of the town's new housing development, and a large majority of its new commercial development over the next 20 years.

While growth center boundaries were drawn to exclude most natural resource areas, the growth center does include mapped floodplains, surface waters and wetlands along the Connecticut and White Rivers. The proposed boundaries were approved by the state based on the strength of regulatory mitigation strategies proposed by the town, including flood hazard area regulations that limit and regulate new development within mapped floodplain areas.

Based on its growth center designation, Hartford also applied and received approval from the state for a smaller, 114-acre Tax Increment Financing (TIF) District centered in downtown White River Junction. This area – scheduled for redevelopment to be financed in part through associated tax revenues – includes 129 parcels, and represents $42.5 million in listed property value. Infrastructure improvements are scheduled to take place through 2016. TIF financing will also support eight planned redevelopment projects, including a new public park and walkway along the Connecticut River.



IV. COMMUNITY ASSETS

Hartford's community assets, which are substantial for a Vermont town, are listed in Appendix B, noted on the accompanying maps, and described in more detail as follows.

LOCAL GOVERNMENT

Hartford has a town manager form of government, as set forth in its charter. The appointed Town Manager answers to an elected, volunteer, seven-member Selectboard. The town also has an elected Town Clerk. In FY13, Hartford employed 142 people in town government in full-time, part-time and temporary positions. The town has six fully staffed departments, all headed by directors that have been with the town for several years, including the following:

- Planning and Development
- Public Works
- Public Safety (fire, police, rescue, dispatch)
- Parks and Recreation
- Finance
- Listers

The Public Safety Department was consolidated in the past year under one director to better coordinate all public safety functions within the town and the region. The town also has an adopted emergency management ordinance that governs local emergency response and civil defense operations.

The town has several volunteer boards, commissions and committees appointed by the Selectboard. Most are advisory to the Selectboard, except for the Planning Commission and Zoning Board of Adjustment, which are quasi-judicial boards that are also governed by state statute. These boards, with the support of the Department of Planning and Development Services, are responsible for town planning, and developing and administering the town's Zoning and Subdivision Regulations, including its adopted Flood Hazard Regulations.

In addition to the staff noted above, the Selectboard, Planning Commission and Conservation Commission are the local entities most responsible for hazard mitigation planning. Hartford also participates in regional emergency response and hazard mitigation planning through its membership on the Two Rivers-Ottauquechee Regional Commission (TROC) and the District #12 Local Emergency Planning Committee (LEPC).

The meetings of local boards and committees are publicly noticed and subject to Vermont's open meeting laws. Many are also covered by the local community cable station. Hartford actively maintains a town website, (www.hartford-vt.org) to inform local residents about town events, initiatives, policies and programs. There is also a town listserv that continues to expand. Both the website and listserv were used extensively during Irene recovery. The town recently also started publishing a quarterly newsletter.

Municipal government is financed largely through property taxes. Hartford's tax base, as reported to the state in 2011, includes 5,447 properties valued at $1.38 billion ($1.44 billion,

as adjusted by the state to reflect fair market value). Residential properties make up roughly 86% of all listed properties, and 80% of total listed property values (VT Dept. Taxes). The town, as noted earlier, also has an approved TIF District to finance infrastructure improvements and redevelopment projects planned for White River Junction.

FACILITIES AND SERVICES

Municipal Buildings. Municipal buildings identified as critical facilities include the town office building, the public safety building and the town garage.

The Hartford Municipal Building is the center of local government, housing town offices, municipal records, conference and meeting space. The two-story building is a historic former school building located on a 3.4 acre site in downtown White River Junction. Built in 1884, it is post and beam construction with exterior brick-bearing walls. The municipal building is in the mapped 100-year floodplain. Town voters in 2013 approved funding to substantially rehabilitate the structure, to include floodproofing to improve its flood resiliency, and the installation of a generator.

The Hartford Emergency Services Building**,** located on a 2.2-acre site located adjacent to the VA Hospital, houses Hartford's police, emergency response and fire services –including offices, operations, training, storage and meeting rooms, five engine bays, and an emergency communications center. The building, constructed in 1978, is a one- and two-story cement building with brick veneer. The building is equipped with a generator. A second unstaffed fire station, Hartford Station 2, is located on Willard Road in Quechee.

The Department of Public Works Facility located on Airport Road in White River Junction (out of the floodplain) includes the town garage, and houses the town's highway and public works equipment. It is also equipped with a generator.

Public Safety. Public safety services include police, fire and emergency response. Hartford police provide a full range of law enforcement services to the community. Hartford emergency services includes both career and paid on-call staff who provide fire protection, emergency medical services, technical rescue services, and hazardous materials protection to Hartford and surrounding communities. The department responds to roughly 1,700 calls per year, locally and under mutal aid agreements, and also operates as a mobile support unit for Vermont Emergency Management. The department's dispatch center provides emergency dispatching services for five surrounding towns. The fire chief serves as the public safety director, and is the town's designated emergency management director.

Zachary Borst, a Regional Outreach Specialist at Vermont Emergency Management, noted that "Hartford has one of the strongest departments in the state – trained to a higher level than usual. They manage the Southern Vermont Urban Search and Rescue Team, housing equipment and team leaders. This is a significant asset for the town, having a huge toolbox and trained responders right there."

In addition to emergency response services, the department issues burn permits and construction (fire safety) permits for public buildings, and reviews development applications before the planning commission and zoning board.

Schools.[2] There are 13 educational institutions located in Hartford, all considered "critical facilities" by the town for purposes of emergency response and hazard mitigation planning (see full listing under Appendix B). These include the following six public schools in the Hartford School District:

- Dothan Brook School, Wilder
- White River School, White River Junction
- Ottauquechee School, Quechee
- Hartford High School, White River Junction
- Hartford Memorial Middle School, White River Junction
- Hartford Area Career Technology Center, White River Junction.

The Hartford School District is one of the town's largest employers, staffed by more than 400 employees who serve around 1,900 students.

The Hartford High School anchors a complex in White River Junction that also includes the middle school, the technology center, and the Wendell A. Barwood Arena, housing the town's ice rink.

[2] Based largely on interview s with Tom DeBalsi, Hartford Schools Superintendent and Byron Baribeau, Hartford Buildings Superintendent, November 17, 2013

Located on a high plateau between downtown White River Junction and Wilder Village, the Hartford High School is also the designated local and regional emergency shelter. Only the high school has a backup generator, intended primarily for its use as an emergency shelter. In the event of an extended power outage the generator can operate continuously for up to two days, supplying enough power to heat a portion of the building and operate one kitchen. During Tropical Storm Irene the high school gym was open for a month to shelter people displaced by the storm, while school was in session. Just a few people stayed beyond the first 48 hours after the storm.

All school buildings meet current fire and safety codes. The Quechee School lost power during Irene, due to damage to utility lines crossing the river under the Quechee Bridge. All schools are equipped with emergency lighting for use in building evacuation. Schools also have police-grade two-way radios, operated from a base at the high school, which can be used to communicate with other schools in the event of an emergency.

A safety team has been formed for each school building, and a notification process has been set up for parents via website and a computerized phone messaging service that reaches everyone within a 10-minute period. This system is used mainly for snow days and works well. It may be expanded at some point to also include e-mail and text notifications

Each school has an evacuation plan, to evacuate students by bus within 30 minutes. Schools are required by the state to test these plans six times per year, and to conduct lock-down

drills five times a year. Each school also has a designated evacuation site in the event of a school emergency, including an outdoor staging area to gather and collect students. School teams are discussing how to also respond to external incidents that may impact the school – for example a chemical spill on the rail line in the vicinity of the White River School – and whether current evacuation plans and staging areas are adequate to address these types of incidents.

The School Superintendent is working with school staff on updating safety and evacuation plans for each school to include a more uniform set of emergency response procedures and commands. He also meets quarterly with the town's emergency management staff, and Ascutney and VA Hospital staff to build cooperation, strengthen communication and better coordinate local and regional emergency response planning.

Transportation. Hartford is a regional crossroads. Strategically located at the junction of the Connecticut and White Rivers, the town was first a center for river traffic. It later became an important rail center, and today is located at the junction of I-89 and I-91. US Route 4, part of the National Highway System and a key east-west connector, crosses town as do Vermont Routes 5 and 14, which run north-south.

Hartford also has more miles of road than any other municipality in the state. The state manages 45 miles of state and federal highway; the town is responsible for another 129 miles of town highway. The town's Public Works Department maintains an ongoing road management system that includes regular highway inventory updates and a 10-year capital improvement program that identifies roads for routine maintenance and reconstruction.

The road system includes 1,038 culverts, 29 short-span bridges and 4 long-span bridges – several of which were damaged during Tropical Storm Irene. The State of New Hampshire owns the bridges crossing the Connecticut River that connect Hartford and Lebanon. Many other major bridges in town are state and federal responsibilities– including the railroad bridge across the White River in White River Junction, which was repaired by the state following Irene. The West Hartford Bridge, constructed in 2006 by the town with state assistance, was designed to withstand a 100-year flood, but also suffered damage during Irene.[3] The Quechee Covered Bridge was

[3] Interview with Allyn Ricker, Hartford Highway Superintendent, March 19, 2013.

completely rebuilt following Irene, finally reopening in December 2012. The town is now completing reconstruction of the Bridge Street railroad bridge and underpass in White River Junction through a federal highway grant.

In 2012 Hartford conducted a comprehensive engineering review of all its bridges, leading to the adoption of a 20-year repair schedule – and separate reserve fund under the town's capital improvement program – to fund scheduled improvements over time.

White River Junction, located halfway between Montreal and Boston, remains a major interchange for several rail lines, including the New England Central Railway and the Northern Vermont Railroad. On average, two AMTRAK passenger trains and two to four freight trains pass through town each day. Freight cars are also stored temporarily in local rail yards. The AMTRAK station on Railroad Row includes parking and an enclosed waiting area.

Flood waters from Irene also severely impacted the NECR line, inflicting major damage between Montpelier and White River Junction. The storm completely washed away about 2,000 feet of roadbed and left rail and ties suspended in mid-air. Two bridges over the White River were also heavily damaged, including the one in White River Junction. Tracks were quickly repaired and reopened by mid-September 2011. The rail bridge on the Wells River Line reopened in January 2012.
Federally-funded track upgrades to improve AMTRAK service allowed for an increase in train speeds effective in 2013 – up to 59 mph north of White River Junction, and up to 79 mph south of the junction. The 2012 Hartford Master Plan speaks to the need to improve the safety of at-grade rail crossings, and to address illegal paths and trails crossing the tracks, but also notes the expense involved. The town recently installed a secondary emergency access through the rail yard to ensure that the Nutt Lane neighborhood will not be cut off by a stopped or derailed train blocking access to South Main Street.

There are no airports in Hartford, however parts of town are within the landing and take-off area of the Lebanon, New Hampshire Municipal Airport across the river, which hosts a small commuter airline and private aircraft.

Advance Transit, the regional public transportation provider, is based in the Wilder section of town. It links Hartford to Norwich and the New Hampshire towns of Hanover, Lebanon, Enfield and Canaan. Passengers ride for free. Links are also provided to other transit networks that extend travel to Randolph, Springfield and St. Johnsbury, Vermont. The Bugbee Senior Center in Hartford provides rides for residents over age 60 by appointment. Other providers also bring passengers to Hartford–e.g., to the VA Hospital – from other counties.

Water and Sewer. The town's municipal water system – supplied by two wells and treatment facilities – one located in Wilder and the other in Quechee near Lake Pineo – serves more than 2,000 connections in White River Junction, Wilder, Hartford Village and Quechee. The system also includes two large storage tanks – one in Wilder and one near the VA Hospital. The Wilder well is located above the floodplain; the Quechee facility, however, is at or above the 100-year flood level. Protected by a berm, it did not flood during Tropical

Storm Irene, but came close. The berm was improved following Irene to better withstand future flooding.

White River Junction, Hartford Village and Wilder Village and areas in between are also served by the town's sewer system. Quechee Village has a separate sewer service, limited to the village core, including Main Street, US 4 west of Quechee Gorge, and several nearby residential developments. The two wastewater treat-ment plants serving these systems are located in White River Junction and Quechee. The White River Junction plant is below the confluence of the White and Connecticut Rivers, and is located within the mapped flood hazard area, but it did not flood during Irene. The Quechee sewer plant is located well-above the 100 year flood elevation. It also did not flood, [4] but the river crossing for the force main serving Quechee Village sustained heavy erosion damage from changes in the stream channel, which undermined critical infrastructure. This was subsequently repaired with funding and technical assistance from the Natural Resource Conservation Service (NRCS), with special care taken to restore stream flow and aquatic habitat to pre-flood conditions.

Pump stations, necessarily located in low-lying areas, are especially susceptible to flooding. Irene flooding damaged three pump stations in the town – two in Hartford Village and one in White River Junction. Following the flood, the pump stations were rebuilt with town insurance money. The town has since applied for and received a hazard mitigation grant to elevate each of the three stations to one foot above Irene flood levels.

In the case of power outages, most of the town's water and wastewater facilities are equipped with emergency generators, and the Public Works Department also has a portable generator. There is also an emergency backup plan for each facility, as required by the state. The Town of Hartford partici-pates in Vermont WARN – the state's Water/Wastewater Agency Response Network. This 145-town mutual aid network provides loans of major equipment to towns impacted by a disaster.[5]

Electrical Service. There are two substations (Wilder, White River Junction) and two transmission lines (Taftsville to Wilder and Wilder to White River Junction) that serve the Hartford area. The two utilities serving Hartford – Central Vermont Public Service and Green Mountain Power – merged last year under Green Mountain Power. The merger is providing more resources for system capacity, reliability improvements, and response in outage situations. Several utility upgrades in the area planned for the near future include:[6]

- Relocating the transmission line from US 5 to North Hartland and the tie-in from the White River feed to the Quechee substation, via Clay Hill Road to US 5 (2014).
- Rebuilding the 46kV transmission line running from the

[4] Interview with John Choate, Hartford Utilities Superintendent, March 27, 2013.

[5] Ibid

[6] Email communication from Michael Burke, Field Operations Lead, Green Mountain Power, May 1, 2013

Wilder hydroelectric facility to Taftsville (2014).

- Rebuilding the White River substation which is nearing capacity (2015). The new substation will carry additional load and provide backup for the Wilder and potentially the Quechee substations.

- Relocating and replacing a small section of single phase distribution line, to run along VT 14 from Sharon toward West Hartford (year or two).

Temporary power outages are a fairly common occurrence, particularly during winter months. Lines are generally well maintained and quickly repaired by the utilities, in coordination with the town for line work within town rights-of-way, and the state work along state highways. As noted, many municipal facilities, including the high school, are equipped with backup generators, but there is still concern regarding the impacts that extended power outages could have on public buildings and facilities, local hospitals and businesses, and especially homebound residents with medical equipment.

COMMUNITY RESOURCES

Local Community. A sense of community – of knowing neighbors and those who might be vulnerable in an emergency – is an important part of building community resilience. Because of Hartford's size, diversity and settlement pattern, many local residents identify more with their neighborhood or village than the town as a collective whole. A current town initiative – "We are all one Hartford"– is intended to also strengthen town-wide community identity.

Hartford's villages have especially strong social networks and ties. Quechee Village has grown in recent years in part to serve the resort community established there. West Hartford's strong sense of community reflects the bonding that occurred during and following Tropical Storm Irene, when village residents felt isolated from the rest of the community. In larger places like White River Junction, in newer housing developments, and in more rural locations people tend to identify with their local neighborhood, others living in their building or along their road.

The West Hartford Community: Lessons Learned

In the aftermath of Irene, the Village of West Hartford, which suffered significant damage, was temporarily cutoff from the rest of the community by large deposits of river silt. Once the road was re-opened, with the help of a local farmer, town government and community service groups organized a central location in the village to provide food, volunteers, equipment and encouragement. Within days, the West Hartford Church, a deteriorating building not in active use – and one of the few buildings not flooded – became the village hub, something that has continued to day, and sparked interest in its renovation. The experience with the flood also highlighted where there may be gaps in communication and services –including communication between local services and town government, and how these might be better addressed in the future. Some of these opportunities include taking advantage of existing networks.

For many residents, Hartford's "third places" – local gathering spots – also serve as important sources of community information and support. For example, the Upper Valley Co-op in downtown White River Junction is much more than a local grocery store – sponsoring community classes, events and activities, and providing meeting space for local groups and gatherings. The Quechee Club serves a similar function as a community gathering place in Quechee Village. Hartford's libraries, schools and recreation programs also provide space and activities that bring people together, as do regional events like the Flavors of the Valley.

There are fourteen churches in Hartford, several of which served important roles during the recovery from Tropical Storm Irene. The United Valley Interfaith Project – a consortium of faith-based organizations covering the Upper Valley area of New Hampshire and Vermont – provided both staff and volunteers to assist in the recovery effort. Hartford also has a number of active community organizations – including a local Transition Town group which has goals to strengthen local community resilience.

Another outgrowth of Irene was the creation of "Upper Valley Strong," comprised of area public and nonprofit service agencies, organizations and churches that came together in the immediate aftermath of the event. This group was subsequently recognized by the state and FEMA as the area's Long Term Recovery Committee (www.uvstrong.org) to strengthen, expand, mobilize and coordinate disaster recovery efforts.

Many participating groups, such as The Haven, Southeastern Vermont Community Action (SEVCA), Cover Home Repair, Upper Valley Housing Coalition and state social service offices are based in or near Hartford. As a result, town residents and property owners were especially well served by regional response efforts and resources following Irene. Upper Valley Strong mobilized teams of people to go door-to-door to identify those in need and direct resources their way. As donations were received, such as beautiful rugs donated by The Company Store, they were stored for pick up in Wilder and made readily available to Hartford residents.

Upper Valley Strong continues to exist today and is putting in place a structure to allow for immediate mobilization when a hazard hits the region. The committee:

- gathers and shares information,
- assesses individual and community needs,
- obtains and disburses financial and other resources,
- conducts triage and disaster case management,
- expedites local access to services,
- facilitates interim and permanent housing solutions, and
- collaborates to resolve the full spectrum of disaster-caused recovery needs.

Medical Facilities and Services. Local medical establishments include a number of doctors' offices, and the Good Neighbor Health Clinic – a walk-in medical and dental clinic for local income residents located in the former Gates Library in White River Junction.

The **Veterans Administration Medical Center** (VA Hospital)[7] in White River Junction serves 75,000 Vermont and New Hampshire veterans, and is one of Hartford's largest employers, with 1000 full-time employees. Excluding doctors, 90% of the center's employees are veterans. There are an estimated 600 people onsite during the day, including staff, a contingent of federal police, patients and other caregivers.

The VA Medical Center includes a 74-bed acute care facility that provides a full range of medical and psychiatric care, including a resident substance abuse treatment program. The center is also classified as a federal "Level II" facility, with four fully equipped operating suites. The center is affiliated with several other medical and academic institutions, including the Geisel School of Medicine (formerly the Dartmouth Medical School).

The medical center campus is located on a 64-acre hillside overlooking I-89, well above the floodplain. It includes a hospital building, a 47,000 square foot research building, an ambulatory care building and administrative and clinical support buildings. There are six generators on-site, including one to run emergency facilities and five in individual buildings. The generators are on a looped system so that if one or two malfunction, they will still provide needed emergency power. There is enough fuel stored on site to last one month. It's estimated that the center can accommodate 500 people easily, with food water and beds, for 96 hours (as required for this type of federal facility). Cots are also available for staff use.

The center also has the ability to evacuate if needed, but is required to prepare for and maintain uninterrupted service during a disaster. Under a federally-declared disaster it also has the ability to care for others if requested. The center is currently designated by the state as a way station or hub for the evacuation of area nursing homes – to serve as a staging center and provide care until residents can be assigned and moved to other facilities.

Available communications systems include three satellite phones, an amateur radio tower (part of the standby Vermont Radio Amateur Civil Emergency Service), and radio equipment provided to the Hartford Fire Department under an active and ongoing relationship with the department.

The center regularly practices emergency response, following "joint commission" standards related to Medicare and Medicaid. Exercises are conducted twice yearly – one of which includes a full evacuation. The center also recently conducted an anthrax release exercise with the US Postal Distribution Center in White River Junction. This included setting up a decontamination site at the hospital – using the Hartford Fire Department's decontamination unit – for those in need of decontamination and medical attention.

Parks and Recreation. In addition to the state park at Quechee Gorge, the Town of Hartford maintains seventeen public municipal parks and recreation facilities, as listed in Appendix B and shown on the accompanying map. This

[7] Much of the information about the VA Medical Center (VAMC) is based on an interview with Tony Ercole, VAMC Emergency Management Coordinator, March 18, 2013.

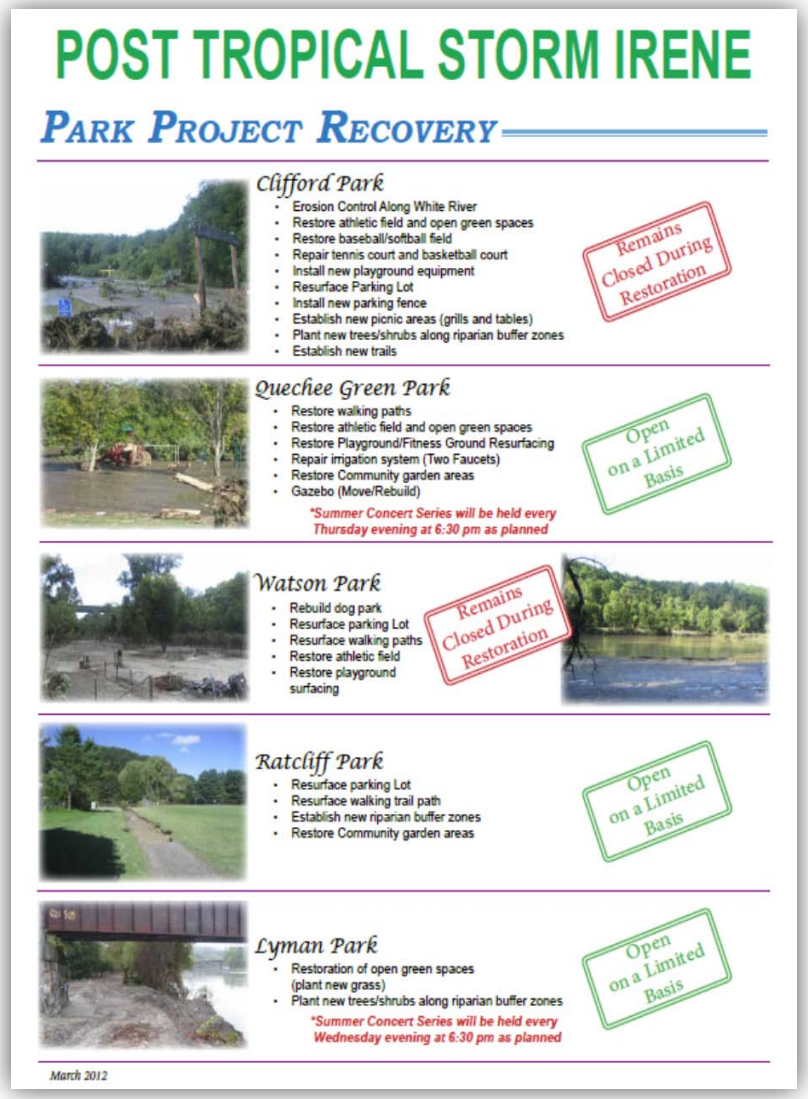
includes several riverside parks that were heavily damaged by Tropical Storm Irene and required restoration, including:

- Erwin Clifford Park, West Hartford
- Quechee Green Park, Quechee
- Watson Memorial Park, Hartford Village
- George Ratfcliff Park, White River Junction
- Lyman Park, White River Junction

Two parks – Kilowatt Park South in Wilder and the Hurricane Forest Wildlife Refuge at the Wright Reservoir– are located at dam sites, but weren't impacted by the flood.

Flood recovery related to hazard mitigation will also result in the acquisition of additional town park land through the federal buyout program – including land adjoining the West Hartford Library. Under FEMA's Hazard Mitigation Assistance Program, the federal government covers 75% of the cost buying severely damaged or destroyed properties identified by the town and state for acquisition. Individuals cannot apply for direct assistance, but the town can apply on their behalf. Property acquisition through the program is one of the most permanent forms of hazard mitigation – it forever removes people and property from harm's way. Once a property is acquired it must be cleared, and retained as open land, for public use. It cannot be sold privately or redeveloped.

Cultural Facilities and Resources. Hartford is fortunate to have a variety of cultural facilities and resources that contribute to the town's historic identity and character, its unique sense of place, its economic development, and the cultural life of local residents.



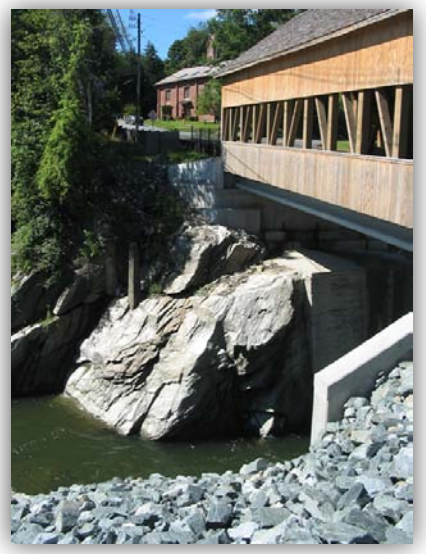
Hartford is one of fourteen Certified Local Governments (CLGs) in the state eligible to receive state funding for historic preservation, and has a very active Historic Preservation Commission. National Register listings to date – due in larger part to local efforts – include more than 300 structures, many of which are contributing structures in the following listed historic districts:

- White River Junction Historic District (1980)
- Quechee Mill Historic District (1997)
- Hartford Village Historic District (1998)
- Wilder Village Historic District (1999)
- Jericho Rural Historic District, Jericho (2001)
- Taftsville Historic District (2001)
- White River Junction Historic District Expansion (2002)
- Christian Street Historic District, Wilder (2003)
- West Hartford Village District (2004)
- Terraces Historic District (2013)

Some buildings within three of these districts – White River Junction, Quechee Mill, and West Hartford – are located in the mapped 100-year flood zone There are also seven historic cemeteries in town – one in Wilder, two in Quechee, three in West Hartford, and one near the center of Hartford.

Historically, Hartford has relied on village libraries to serve its residents. Each of the five villages once had their own library. That changed in 2001 when the Gates Memorial Library in White River Junction closed. Of the remaining four libraries, the West Hartford Library is the only town-owned facility with an elected Board of Trustees. The Quechee Library, Hartford Library, and the Wilder Club and Library are operated by private nonprofit organizations with their own separate board of directors, but each library receives some town funding. As noted earlier, the West Hartford library was heavily damaged by Irene flooding. Given its importance to the community, it is now undergoing rehabilitation including elevation and flood-proofing.

White River Junction – home of the historic Hotel Coolidge, the Main Street Museum, the New England Transportation Museum, the Briggs Opera House, Northern Stage and more recently the Center for Cartoon Studies and the Tupelo Music Hall – is re-establishing itself as a regional cultural center, in part through the adaptive reuse of historic structures in the downtown. These venues contribute to the vitality of the downtown, serve as local gathering places, and provide a variety of cultural opportunities for local residents.



V. RISK & VULNERABILITY ASSESSMENT

A risk assessment evaluates the potential for damage, loss or other impacts from anticipated hazards. A vulnerability assessment tries to predict the damage or loss to community assets that may result from a hazard event. These assessments, which may take many forms, are used to rank and prioritize anticipated risks – to inform local decision-making and to develop associated mitigation measures.

Available state, county and local information was used to identify natural and manmade hazards to be considered in local hazard mitigation planning. This information, along with community concerns and insights based on recent events and local emergency planning, was then used to identify and rank local hazards, as summarized in Appendix C, and as referenced in related risk assessments (by hazard type) that were used in developing associated mitigation strategies.

HAZARDS IDENTIFICATION

State Hazards Ranking. The Vermont Division of Emergency Management and Homeland Security (Vermont Emergency Management) has identified and ranked both natural and "technological" or manmade hazards for purposes of state hazard mitigation planning, as included in the May 2013 *State of Vermont State Hazard Mitigation Plan* (VHMP). The state list was used to develop an initial list of hazards for consideration in updating the town's hazard mitigation plan, with a focus on those higher frequency hazards identified for regional and local consideration (VHMP Table 4-34). The state plan identifies major risks by "specific jurisdiction" – defined for this purpose as regional planning commission areas.

State Hazards List (Ranked)
Flooding and Fluvial Erosion
Terrorism
Earthquake
Infectious Disease Outbreak
Hurricanes, Tropical Storms
Tornadoes
Nuclear Power Plant Failure
Landslides/Rockslides
Severe Thunderstorms
Wildfires
Dam Failure
Severe Winter Storms
Hail
Ice Jams
Drought
Rock Cuts
Invasive Species
Extreme Temperatures

Source: VHMP (2013), Tables 4-1, 4-34

Flooding and fluvial erosion are identified as high risk hazards specific to the Two-Rivers Ottauquechee Region – especially given that Windsor County has the highest number of reported flood-related events and FEMA disaster declarations in the state. Winter storms, technological hazards and hazardous materials spills pose moderate risks. Given that this region has not experienced significant development within the past 10 years, the state has determined that the overall level of risk from flooding and winter storms remains unchanged. Hartford is not identified as a high risk "SFHA Community" in the state's vulnerability assessment.

Climate change is not identified in the state plan as a hazard per se, but the plan does acknowledge that Vermont's warming climate is expected to exacerbate existing hazards – including

the frequency and severity of weather-related hazards (e.g., flooding, fluvial erosion, landslides, ice jams), and to contribute to emerging hazards, including waterborne and infectious diseases.

County-Level Data. Most federal information regarding past hazard events is available only at the county level. As such, information specific to Windsor County was used to identify and evaluate the type, frequency and relative impact of past events within the larger Hartford region, which could therefore be expected to affect the community in the future.

According to FEMA, there were fifteen federally-declared major disasters for Windsor County between 1969 and 2013 – averaging about one every three years – though not all impacted Hartford directly. As indicated in Table 5.1, all reported disasters involved severe storm events – including Tropical Storm Irene in 2011 and, most recently, the storm system that resulted in flash flooding in parts of the county this summer.

SHELDUS, a national hazard events database, includes reported events and associated property and crop damage from 1960 through April 2012 (Table 4.2). Over this 51+ year period, 708 hazard events were recorded for Windsor County – an average of around 14 per year – which resulted in more than $199 million in reported damage ($2012). Again, not all of these events directly impacted Hartford, but this does indicate the type, frequency and relative impact of hazards that will likely affect the town. Most events were associated with winter weather (48%) and severe storms (17%) – but clearly the majority of reported damage (88%) resulted from flooding.

Table 5.1. Federal Disaster Declarations: Windsor County (1969-2013)

Disaster Number	Date	Incident Type	Description
277	8/30/1969	Flood	SEVERE STORMS, FLOODING
397	7/6/1973	Flood	SEVERE STORMS, FLOODING, LANDSLIDES
518	8/5/1976	Flood	SEVERE STORMS, HIGH WINDS, FLOODING
938	3/18/1992	Flood	HEAVY RAINS, ICE JAMS, FLOODING
1101	2/13/1996	Flood	ICE JAMS, FLOODING
1201	1/15/1998	Severe Storm(s)	SEVERE ICE STORMS, RAIN, HIGH WINDS, FLOODING
1228	6/30/1998	Severe Storm(s)	SEVERE STORMS, FLOODING
1307	11/10/1999	Severe Storm(s)	TROPICAL STORM FLOYD
1336	7/27/2000	Severe Storm(s)	SEVERE STORMS, FLOODING
1488	9/12/2003	Severe Storm(s)	SEVERE STORMS, FLOODING
1698	5/4/2007	Severe Storm(s)	SEVERE STORMS, FLOODING
1715	8/3/2007	Severe Storm(s)	SEVERE STORMS, FLOODING
1790	9/12/2008	Severe Storm(s)	SEVERE STORMS, FLOODING
4022	9/1/2011	Hurricane	TROPICAL STORM IRENE
4140	8/2/2013	Flood	SEVERE STORMS AND FLOODING

Source: FEMA National Emergency Management Information System (NEMIS).

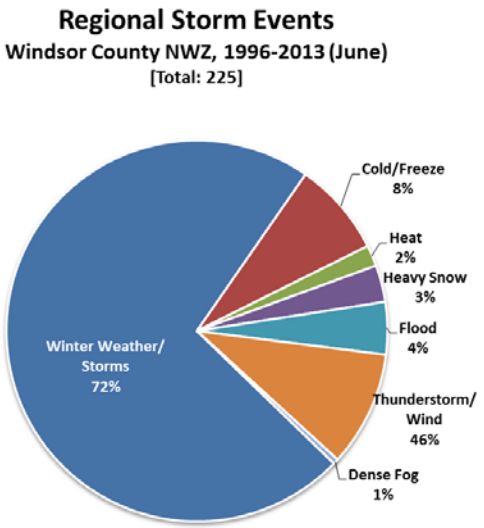
The total damage reported for Windsor County from Tropical Storm Irene in 2011 was $130.1 million, representing 65% of all reported damages over the 50+-year reporting period.

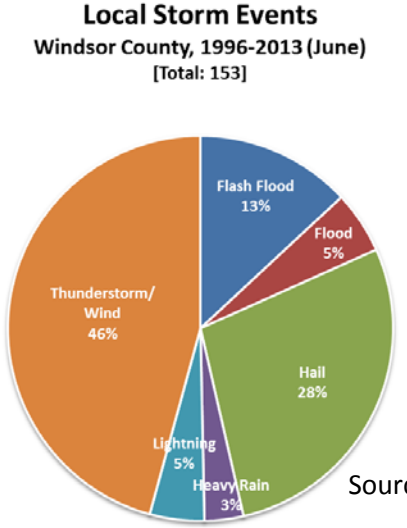
The **National Oceanic and Atmospheric Administration** (NOAA) also compiles storm events data, dating from 1996 to present. These cover "regional" weather events for the larger Windsor County area (National Weather Service Forecast

Table 5.2. Hazard Events: Windsor County (1960–Apr 2012)

Type	Events	Damage ($2012)			% Total	
		Property	Crop	Total	Events	Damage
Flooding	54	$166,638,713	$8,855,053	$175,493,766	7.6%	88.0%
Hail	31	$305,805	$234,037	$539,842	4.4%	0.3%
Lightning	49	$430,662	$9,302	$439,964	6.9%	0.2%
Severe Storm	120	$5,604,374	$1,147,097	$6,751,470	16.9%	3.4%
Winter Weather	342	$12,081,133	$1,129,362	$13,210,495	48.3%	6.6%
Wind	104	$1,768,995	$5,876	$1,774,871	14.7%	0.9%
Tornado	2	$73,443	$0	$73,443	0.3%	0.0%
Hurricane[1]	2	$23,017	$27,904	$50,921	0.3%	0.0%
Heat	2	$0	$1,000,000	$1,000,000	0.3%	0.5%
Avalanche	1	$97,039	$0	$97,039	0.1%	0.0%
Fog	1	$5,986	$0	$5,986	0.1%	0.0%
Total	708	$187,029,165	$12,408,631	$199,437,797	100.0%	100.0%

Source: Spatial Hazard Events and Losses Database for the United States, V.10.0 (through April 2012).
[1]Tropical storm Irene is included in the database as a flood event, and not as a hurricane or tropical storm.





Source: NOAA

Zone) for periods of extreme temperature and drought, flooding, winter weather and storms; as well as more "local" (county and town-level) events, including flash floods, high winds, hail and lightning. Over this 16+ year reporting period, 225 reported regional storm events (averaging around 14 per year), and 153 countywide or local storm events (averaging around 9 per year) were catalogued – including seven events specific to Hartford. In some cases several events are reported for the same storm system. Database entries also include more general estimates of related property and crop damage – totaling $6.5 million at the regional level, and $131.6 million at the county/local level – of which $127.5 million, or 97%, was specific to Irene. Reported damages again are largely due to flooding – including, in this context, more localized flash flooding.

As expected, the majority of recorded regional events relate to winter storms and winter weather, while the majority of more localized events are associated with severe thunderstorms. In addition to flooding and flash flooding, storm-related hazards include high winds, with estimated gusts ranging from 35 to 50 knots (40 to 60 miles per hour) and hail up to 1.75 inches. Hazards related to cold temperatures – including unseasonal frosts, and periods of extreme cold during winter months – are more common than heat spells; however, four heat-related events have been reported since 2006, including dry spells in 2011 and 2012 that resulted in some crop damage.

These analyses confirm that, with regard to frequency, winter weather and severe storm events are responsible for most hazardous conditions at the town and county level; however flooding – including flash flooding and fluvial (stream bank) erosion – by far results in the most damage to property and crops, even when damages from Irene are not included.

Locally Identified Hazards. A local history of hazard events was compiled from community forums, town documents and interviews with town and state officials. For identified hazards, local knowledge generally confirms and augments state and county-level information.

Given the impacts of Tropical Storm Irene on Hartford and Vermont, there is understandably a strong focus at both the local and state level on mitigating hazards associated with flooding. The town has also long recognized and prepared for the fact that the community faces a broad range of potential natural and manmade (or "technical") hazards, as referenced in the state's 2013 Hazard Mitigation Plan.

Identified hazards were ranked according to geographic extent, probability (based on past frequency), and level of impact using a version of the state's ranking criteria adapted for local use (Appendix C). Hazards were also ranked for local mitigation planning purposes by those attending public meetings (Appendix D). The results indicate that, though many of the hazards identified by the state could potentially affect Hartford, with regard to losses to property and major impacts to human health and safety the four top hazards facing the community are:

- **Flooding and fluvial erosion (from storms, ice jams, dam failure),**
- **Severe winter storms,**
- **Transportation accidents/hazardous materials, and**
- **Structural fires.**

These are consistent with hazards identified for mitigation in the previous Hartford Annex to the Regional Pre-disaster Mitigation Plan, as well as the "top threats" facing the community listed in Hartford's 2013 Emergency Operations Plan:

Hartford Emergency Operations Plan (2013)
Top Threats:
- Flooding
- Structural Fire
- Hazardous Materials Accident
- Mass Casualty Incident (Health Emergency, Epidemic or Pandemic)
- Severe Winter Ice & Snow Event
- Multiple Vehicle Accident
- School Incident

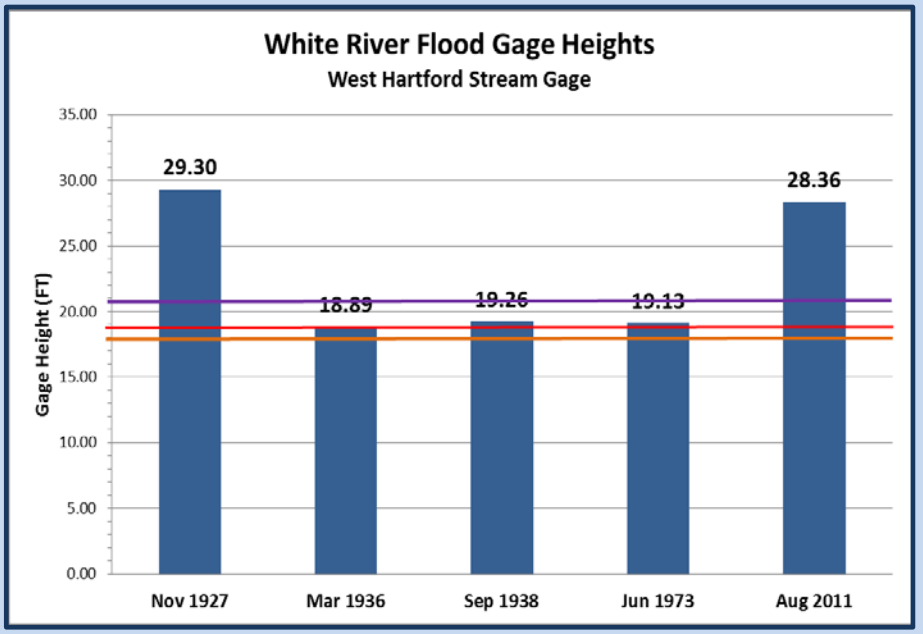
Landslide hazards, identified in the previous annex as "probable and damaging" are also considered for mitigation in Section 6 below; but, because past damage has been highly localized and partially addressed (Pomfret Road, Jericho Road/Country Lane), and the full extent of local risk remains undocumented, landslide risks were not ranked as highly by the community as structural fires. This is also true for high wind events, which do occur, but are highly localized and have resulted in minimal damage. The hazards of highest concern, and related risks and community vulnerabilities, are described in more detail as follows.

FLOODING AND FLUVIAL EROSION

Flooding. Flooding can happen at any time of the year, but historically has resulted from ice jams and snowmelt runoff in the spring, and severe storms in late summer and fall. The most widespread and damaging floods – including the November 1927 flood and most recently Irene in August 2011 – have all been associated with hurricanes or tropical storms tracking up the northeast coast. In each case heavy rainfall, on top of already saturated soil conditions, resulted in very large volumes of runoff over a short period of time.

The magnitude and impact of flooding from Tropical Storm Irene in 2011 rivaled and potentially exceeded that of the 1927 flood. The White River, which flows into the Connecticut River at White River Junction, has a total drainage area of 712 square miles (1,840 sq. km.). During Irene the river basin received, on average, more than six inches of rain, resulting in a peak discharge of 90,100 cubic feet per second, as measured at the West Hartford gauge station before it stopped transmitting data. The river at West Hartford crested at 28.36 feet – more than 10 feet above flood stage.

Local damage from Irene was extensive – the total cost of which has yet to be determined. Municipal properties and infrastructure damaged from flooding and bank erosion included five local parks, municipal water and sewer systems, and local roads, bridges and culverts. Roads washed out in more than sixty locations; and the West Hartford and Quechee bridges both suffered extensive damage. Emergency and temporary infrastructure repairs completed through January



Major Flood Stage (21 ft)
Moderate Flood Stage (19 ft)
Flood Stage (18 ft)

Flood Impacts:

28 Feet – Extremely dangerous. The White River will cover the entire valley in some areas resulting in widespread, devastating damage. Homes and businesses near the river will be inundated; some may be swept off their foundations. Portions of Routes 14 and 107 will be covered and may be damaged or destroyed.

18 Feet – Route 14 west of West Hartford will be flooded; widespread field flooding in the White River valley.

Sources: USGS; NOAA, National Weather Service.

2012 totaled $1,534,000. The cost of remaining repairs at that time was estimated at more than $4 million. Many homes and businesses – including the West Hartford library, post office and village store – also flooded. Private property losses were also then estimated at more than $4 million.[8] Most permanent repair work is now complete – though as noted earlier, the town is continuing to pursue property buyouts under the federal hazard mitigation grant program, and to renovate both the Hartford Municipal Building and the West Hartford Library.

Ice Jams. Spring flooding due to ice jams, though not nearly as devastating, is a much more frequent occurrence – and sometimes also very destructive. According to historical accounts, spring floods on the White River have been an annual occurrence. The "Great Flood of 1867" caused by an ice jam on the White River, combined with February rain and runoff, destroyed the bridge and many homes and businesses in West Hartford, and resulted in one death.[9]

[8] John D. Knott, Jr., Pleasant Mountain LLC, Project Manager and Disaster Relief Consultant, Town of Hartford,VT (2012 Report).

[9] William Howard Tucker, *History of Hartford, Vermont, July 4, 1761-April 4, 1889,* The Free Press Association, 1889; pp. 25, 26.

Since then, 50 accounts of ice jams in Hartford have been compiled in the ice jam database maintained by the US Army's Cold Regions Research and Engineering Laboratory (CRREL), based in Hanover, NH (http://icejams.crrel.usace.army.mil/) – the majority (63%) occurring on the White River between West Hartford and White River Junction.

	Date Range	Ottauquechee River	White River	Connecticut River	Total
Hartford	1867-1992	2	13		**15**
White River Junction	1943-1998		1	9	**10**
West Hartford	1867-1997		18		**18**
Quechee	1935-1992	8			**8**
Total		**10**	**32**	**9**	**51**

Source: USACE CRREL Ice Jam Database.

Ice jams along the White River frequently result in minor flooding and bank erosion. They cause more damage during periods of high water. The most destructive jams reported since 1867 have occurred at the confluence of the White and Connecticut Rivers – including jams that took out the Bridge Street Bridge on US 5 across the White River in 1964, and again in 1990. The bridge was replaced in 1992 with cells to monitor ice loading. The 1990 jam also temporarily closed the Hartford Village bridge. Ice and flash flooding in 1964 blocked off both entrances to White River Junction from Route 14, and damaged several houses and businesses, resulting in $1.2 million in damages to roads and bridges, and $1.9 million in damages to private property.

Ice jams on the Connecticut River are much less frequent, based on available reports, but tend to form in the vicinity of White River Junction at the confluence of the White River, in the vicinity of the I-89 bridge. When jams do occur, flash flooding is a real concern. A 1970 jam on the Connecticut flooded several commercial buildings, and raised backwater at the Wilder Dam.

Ice jams on the Ottaquechee occasionally result in flooding behind the Quechee Club House. A 1972 jam destroyed the golf course bridge; a 1992 jam flooded and damaged portions of the Lakeland Golf Course, delaying its opening for the season. There is also a history of ice jams on Main Street, east of the intersection with Old Quechee Road.

HARTFORD DAMS					
DAM NAME	STREAM	OWNER	DAM STATUS	PURPOSES	DAM HAZARD CLASS
Hurricane Lower Reservoir	Kilburn Brook-TR	Town of Hartford	Breached (Partial)	Water Supply, Other	Low Hazard Potential
Hurricane Upper Reservoir	Kilburn Brook-TR	Town of Hartford	Breached (Partial)	Water Supply, Other	Low Hazard Potential
Wright Reservoir	Connecticut River-TR	Town of Hartford	In Service	Water Supply, Other	Significant Hazard Potential
Deweys Mills	Ottauquechee River	US Army Corps of Engineers - NAE	In Service	Hydroelectric	Low Hazard Potential
Quechee Mills	Ottauquechee River	Simon Pearce (U.S.) Inc	In Service	Other	Low Hazard Potential
Lake Pinneo	Ottauquechee River-TR	Quechee Lakes Landowners	In Service	Recreation	Low Hazard Potential
Podunk Brook	White River-TR	Null	Null	Null	Null
Simonds Reservoir	Kilburn Brook-TR	Town of Hartford	Abandoned	Other	Low Hazard Potential
Hartford Woolen Co.	White River	Null	Breached	Null	Null
Wilder	Connecticut River	TransCanada Hydro Northeast, Inc.	Null	Null	Null
Deweys Pond	Ottauquechee River	US Army Corps of Engineers - NAE	In Service	Recreation, Other	Low Hazard Potential

Source: Vermont Dam Inventory, VT Dept. of Environmental Conservation.

Over the years the town has taken measures to reduce the impacts of ice jams and flash flooding in areas particularly prone to flooding – including Quechee Main Street and Route 14, and the River Road near the Taftsville Bridge. Work completed in 2007 to build up the River Road has reduced the amount of flooding in this area.[10]

Dam Failure. There are eleven dams in Hartford listed in state's dam inventory, including four water supply dams owned by the town (one now abandoned), two hydroelectric dams (including the Wilder Dam on the Connecticut), and two dams owned by the US Army Corps of Engineers, constructed in part for flood control. Only one of the dams listed – the Wright Reservoir Dam owned by the town – is rated as having a significant hazard potential. This is based on the potential extent of downstream impacts in the event of a failure, and not the current condition of the dam. A significant hazard is one that will likely result in little loss of life, but appreciable potential economic loss (e.g., to commercial structures).

The Wright Reservoir serves as a municipal water supply and, bordered by the 142-acre Hurricane Forest Wildlife Refuge, is also an important town recreational resource. The earthen reservoir dam, constructed in 1930 on a tributary of the Connecticut River, is 330 feet long and 36 feet high. The impounded reservoir has a surface area of around three acres.

An inundation map has not been located but, in the event of a dam failure, the surge of water could impact the Wright Reservoir Road, I-89 and commercial properties along US 5 located below the dam. The town recently contracted with an engineering firm to design the full rehabilitation of the Wright Reservoir Dam.

[10] Interview with Allyn Ricker, Hartford Town Highway Superintendent, March 19, 2013.

Fluvial Erosion. Fluvial erosion – erosion caused by rivers and streams – ranges from gradual streambank erosion to catastrophic changes in the location and dimensions of a river channel during a major flood event. The majority of damage caused by flooding in Vermont – and locally – is due to fluvial erosion associated with flash flooding – especially outside of FEMA-mapped floodplains, which indicate only potential inundation areas based on calculated flood heights.

Fluvial erosion is also a major cause of landslides in Vermont. Following Irene, two "cliff hanger" properties in Quechee damaged by fluvial erosion– both on Waterman Hill Road – were slated for buyout at a total cost of $473,998 (VHMP, p.4-91). River channel erosion in Quechee also undermined municipal infrastructure under the river bed, requiring major stream channel repair work following Irene.

Given the known hazards and costs associated with fluvial erosion, the state is in the process of mapping river corridors that are highly susceptible to fluvial erosion. This work is expected to be completed in 2014. Once maps are available, the state is strongly recommending that municipalities adopt fluvial erosion hazard area (river corridor) bylaws, in addition to flood hazard bylaws, to further limit development and minimize associated risks within known hazard areas.

*The **White River Tactical Basin Plan** (VANR July 2013), which covers the Lower White River through Hartford, includes state recommendations and actions to protect, maintain and improve river water quality and habitat by managing activities that cause known stressors. Key recommendations include minimizing floodplain encroachments, and to implement flood restoration projects that connect the river channel to its floodplain, and to protect targeted river corridors. Actions specific to Hartford include:*

- *Map and prioritize floodplain encroachment parcels for possible removal/restoration, based on … fluvial erosion hazards and past flood damage, with a focus on developed floodplains in village centers (West Hartford).*
- *Complete discharge and stormwater mapping inventories and plans, and implement related report recommendations (Hartford/White River Junction).*
- *Undertake green infrastructure demonstration projects (Hartford/White River Junction).*
- *Provide outreach to municipalities regarding stormwater zoning and bylaws (Hartford/White River Junction).*
- *Provide technical assistance to towns in implementing high priority stormwater best management practices (Hartford/ White River Junction).*

Table 5.3. Hartford Flood Hazard Risk Assessment Summary

Type of Structure	Number (excluding outbuildings)			Listed Value (including outbuildings)		
	Total (#)	SFHA (#)	SFHA (% Total)	Total ($)	SFHA ($)	SFHA (% Total)
Residential	3,253	28	0.9%	$622,888,500	$3,418,400	0.6%
MH (no land)	308	0	0.0%	$10,090,400	$0	0.0%
MH (w/land)	103	4	3.9%	$5,139,100	$180,200	3.5%
Commercial	537	25	4.7%	$221,778,100	$3,639,500	1.6%
Industrial	14	7	50.0%	$4,564,800	$2,028,000	44.4%
Exempt (Public, Nonprofit)	119	5	4.2%	$85,743,900	$4,333,600	5.1%
Condominiums	256	6	2.3%	$183,967,500	$5,034,300	2.7%
Total	4,590	75	1.6%	$1,134,172,300	$18,634,000	1.6%

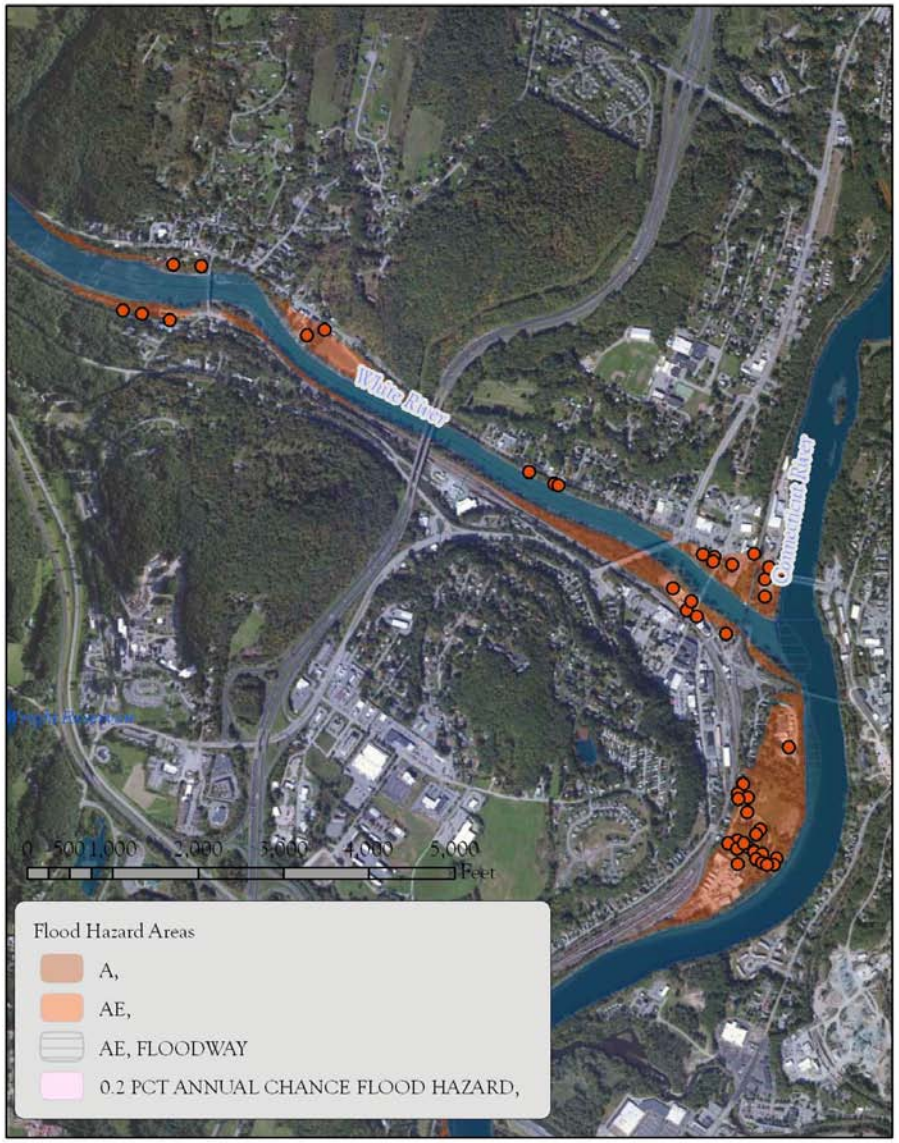
Flood Risk Assessment. The initial risk assessment included in the 2008 Hartford Annex of the Regional PDM plan identified 47 residences and 17 commercial businesses within the mapped 100-year floodplain which were vulnerable to potential flooding, having a total estimated value of $20,778,167.[11] At the time, this represented 1% of the town's total grand list.

This assessment was updated in 2013 by Hartford town staff using maps provided by the regional commission that showed structures located within Special Flood Hazard Areas (SFHAs) identified on current Flood Insurance Rate Maps (FIRMs). The results are presented in Table 5.3. The maps on the next page identify structures within the SFHAs.

Overall, there is very little identified risk. A total of 75 properties (principal structures) were identified within the mapped floodplain (1% chance of flooding) – representing 1.6% of all principal structures in town. Less than 1% of the town's residential properties is located in the mapped floodplain – however nearly 5% of the town's commercial properties – and 50% of industrial properties – are vulnerable to flooding. Five public buildings – including the Hartford Municipal Building in White River Junction, the Hartford Town Library in Hartford Village, and the West Hartford Library in West Hartford – are located in the mapped floodplain. Other community assets and areas of local concern identified in the floodplain include:

[11] A similar but less detailed analysis from Ned Swanberg, Vermont Flood Hazard Mapping Coordinator (June 2013), identified 69 structures and 70 "families" in the mapped Special Flood Hazard Area – including four in the mapped floodway.

Hartford, Vermont Flood Hazards - White River Junction



Hartford, Vermont Flood Hazards - Quechee

Hartford, Vermont Flood Hazards - West Hartford

- Quechee Water Supply Well
- White River Junction Sewage Treatment Plant
- Buildings in the White River Junction, Quechee Mill and West Hartford Historic Districts
- Municipal Parks (6)
- New England Central Rail Yard, White River Junction
- Highways – including US 4, US 5 and VT 14.

The total listed value of properties at risk of flooding, including outbuildings, exceeds $18.6 million. As noted for the previous assessment, this does not reflect structures that could be damaged from flash flooding and fluvial erosion that are more likely to occur outside of mapped flood hazard areas.

According to information supplied by the state, there were 65 flood insurance policies in effect in town as of March 2013, including 28 policies for structures within the mapped flood hazard area (37%) – for a total insured value of $14,532,500. Current flood insurance policies for older (pre-FIRM) structures in Hartford run around $1,400 for $139,000 of insured value, while the cost of policies for newer structures is roughly twice that amount. Since 1978 only one substantial damage claim was filed in Hartford – there have been no repetitive loss claims.[12]

Local insurance rates are expected to increase significantly under the federal Flood Insurance Reform Act of 2012(Biggert-Waters Act), which will affect its affordability. This legislation, currently under review in congress, calls on FEMA Program to raise insurance rates under the National Flood Insurance Program to reflect true flood risk and to make the program more financially stable.

Community Vulnerabilities. Community forums held in association with updating the plan highlighted both perceived community vulnerabilities and lessons learned following Tropical Storm Irene. The results of these forums are summarized in Appendix D. Of particular note:

- Some neighborhoods, and West Hartford in particular, were cut off and isolated from the rest of the town – one West Hartford household took in and fed 17 people for several days. Others slept in their cars. This suggests the need for additional communication and warning systems, evacuation options, and temporary shelters in outer villages and those areas accessed via bridges. Emergency planning should consider multiple access and evacuation routes and collection points, in coordination with other trail groups, such as VAST.

- Municipal staff that manage and coordinate emergency response do not live in town, and may be unable to get to town if roads and bridges are cut off during a major disaster.

- The town's senior population – particularly those living alone – are especially vulnerable during a major disaster. It's not clear whether seniors and others with critical medical needs are registered with local authorities. Access to senior housing in White River Junction could also be cut

[12] Ned Swanberg, Flood Hazard Mapping Coordinator, Vermont Watershed Management Division, June 25, 2013.

off, making evacuation –e.g., to the Senior Center or the VA Hospital – difficult.

- Debris collected at the West Hartford bridge, apparently contributing to flooding in the village – local residents are concerned that the bridge is undersized for its location. Many road and driveway culverts are also undersized, which contributed to flooding, road and driveway washouts. Local road standards and stormwater management systems should be updated and improved.

- Temporary housing or shelters are also needed for animals, including farm livestock and people's pets. The high school shelter doesn't have adequate space for pets, particularly when school is in session, and allergies are a concern. The suggestion was made to provide a separate trailer with cages for pets on the school property, so that pets can be sheltered near their owners.

- Provisions are needed for hikers coming off the Appalachian Trail through West Hartford during a major disaster.

- More public education and information, improved administrative structures, and better notice and communications systems are needed to plan for, respond to and recover from a major disaster.

A number of local businesses were also affected by Irene – highlighting the need to target outreach, planning and resources to the local business community to better plan for, respond to and recover from future disasters. The Small Business Development Center located in Hartford has prepared a "Disaster Resilient Business Checklist" and handbook for use by local businesses, which include recommendations to obtain flood insurance and to store backup files offsite.

SEVERE WINTER STORMS

Description. Winter storms are a common occurrence locally and throughout the region, given Vermont's northern climate. Average winter temperatures fall well below freezing – and often below 0° F in January and February. The lowest temperature of record was -34°F, reached in January 2000. The town, on average, receives around 66 inches of snow per year, which is fairly evenly distributed throughout the winter months. The maximum snowfall on record was 30 inches. Severe winter storms – characterized by heavier than normal snow, sleet, or freezing rain, extensive icing and snow drifts, strong winds and extreme cold – occur less frequently, and can cause considerably more damage.

Extent/Previous Occurrences. Based on reported events, Windsor County averages around 8 to 10 winter storms per year that may result in some damage (NOAA, SHELDUS). There has been only one winter storm in recent history, however, that resulted in a major disaster declaration – the Ice Storm of 1998 – which affected much of Vermont, including higher elevation areas in Hartford (Jericho area).

Winter weather often results in temporary road closures, school and business delays, and brief power outages. Given the frequency of winter storms, the town and local residents are generally well prepared and equipped to deal with normal

winter weather conditions. Severe winter storms, however, affect the entire region as well as the local community, and may result in:

- Extensive damage to above-ground power and utility lines, and extended power outages (as in 1998),
- Road, airport and rail shutdowns, making general travel, transport and emergency vehicle access difficult,
- Business and school closures and government shut-downs, limiting access to goods and services,
- Structural failure from excessive snow loading – especially affecting barns and other large structures,
- Injuries and fatalities – from poor driving conditions (accidents), extreme cold (frostbite, hypothermia), and overexertion (back injuries, heart attacks).

Risk and Vulnerability Assessment. No information specific to Hartford is available for a detailed analysis of risk, but winter storms at the county level result in roughly $38,000 in damages per storm event, or $264,000 per year, averaged over a 50-year reporting period (SHELDUS). Winter road maintenance costs also make up a significant portion of the local highway budget. Facilities and infrastructure especially at risk from severe winter storms include the town's highways and bridges, and overhead utility and transmission lines. Local residents especially at risk include:

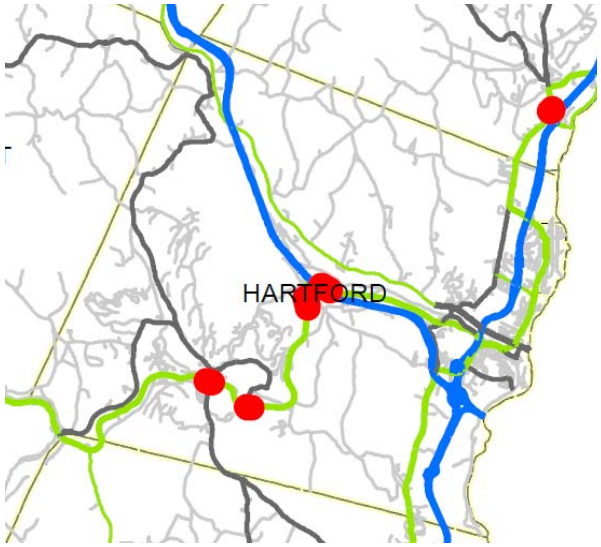
- the local homeless population,
- senior residents – and especially those living alone,
- households who rely solely on electric heat,
- low income households in need of fuel assistance,
- residents with critical medical needs, including medical support equipment, and
- residents living in remote locations, making access difficult.

TRANSPORTATION INCIDENTS/SPILLS

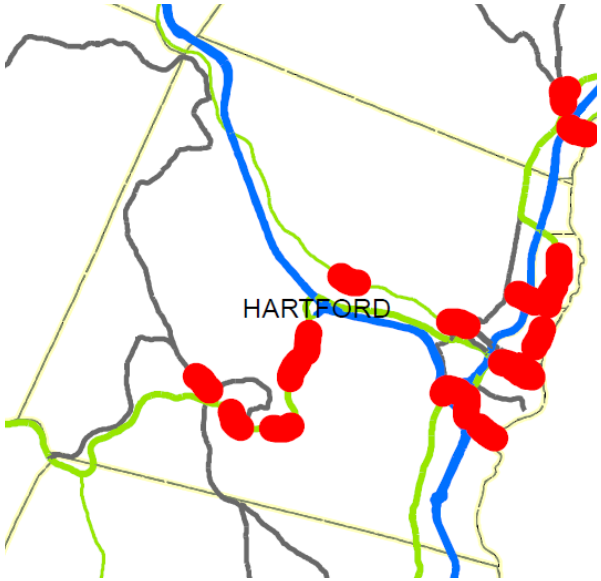
Description. Hartford – and White River Junction in particular – is located at the junction of major highway and rail corridors serving the region. Significant loads of material, including hazardous materials, are transported through town on a daily basis. Interstates 89 and 91, Routes 4, 5 and 14, two rail lines and the rail yard in White River Junction handle most commercial traffic. The release of hazardous materials in association with a traffic or rail accident is a major concern locally.

High accident locations are of particular concern. VTrans has identified a number of high crash inter-sections and highway sections in Hartford, as shown on the accompanying maps. State attention is currently focused on the US 4 Corridor from Hartford to Bridgewater – a highway safety roundtable was convened by the Vermont Highway Safety Alliance in June 2013 to address the high number of accidents along this corridor in recent years.

There have also been train derailments in Hartford– including the largest train accident in Vermont's history, occurring in February 1887, when an express passenger train headed to Montreal jumped the tracks and plunged into the White River.



High Crash Location Intersections (VTrans, 2006-2010).



High Crash Location Road Segments (VTrans, 2006-2010).

A more recent derailment, in August 2008, involved six New England Central cars. There were no reported spills or injuries, but the accident closed the tracks for more than six hours, and Amtrak passengers had to be bussed to their destinations.

The Federal Transportation Agency does not require manifests for unfixed facilities. Hartford's Public Safety Director has acknowledged that they don't know what's traveling through town or stored in the rail yard, which makes it difficult to plan in advance – but noted that the most common material is likely propane, supplying Irving Fuels – large shipments reportedly come through about every three days. In an emergency the fire department relies on the placards attached to rail cars or trucks, and available shipping manifests, to identify materials being transported.

Placard code translations can be found at:
http://environmentalchemistry.com/yogi/hazmat/erg/
Photo: Fort Bend County LEPC

Risk and Vulnerability Assessment. As reported in the 2008 Hartford Annex, within 1,000 feet of the railroad tracks, Routes 4 and 5, and Interstates 89 and 91 there are 2,442 residences and 357 commercial and industrial buildings, including three critical facilities:

- VA Medical Center
- Three schools
- Hartford Police/Fire Station

Staff at the White River School in particular expressed concern about potential hazardous material spills, given how close the rail line is to the school. The Hartford Superintendent of Schools agreed that a community exercise around a chemical spill should be conducted.

At community meetings, New England Central was given high marks for running a good operation – it was also noted that rails, crossings and signals have recently been improved. That said, there was concern that rail lines continued to stage tankers in White River Junction near populated buildings and the school. The Upper Valley Food Co-op, an important community gathering place, is also located near sided rail cars, some of which may be hauling propane and other hazardous materials.

VA Hospital staff also expressed concern regarding accidental chemical releases, given their proximity to the intersection of two interstate highways and the rail line. For past training exercises they have relied on use of the Hartford Fire Department's decontamination unit.

FIRE HAZARDS

Description. The Hartford Fire Department regularly responds to both structural and brush fires; of the two, structural fires are more of a concern given the potential loss, damage, injury and fatalities that that may result.

Historically (from 1980 through 1991), an average of 25 brush fires was reported each year in town reports. It was then decided that a brushfire had to involve more than five acres to be counted as an incident, and none have been reported since. Small brush fires occur on a regular basis – including the 2010 fire in West Hartford shown below – but result in little if any real damage.

Wildfire West Hartford, 2010 **Photo: Hartford FD**

Risk and Vulnerability Assessment. Over the years, structural fires have destroyed many of Hartford's historic buildings, including two hotels located at the present site of the Hotel Coolidge. Several of the town's first industrial and railroad buildings in White River Junction also were lost in a large fire in 1860.

Given the concentration of population, higher density residential development and large wooden structures in Hartford's historic villages, the Hartford Fire Department performed a risk analysis and identified major structural fire risks by geographic area in its emergency operations plan. Buildings posing a special fire risk identified by the department include:

Hartford Round House Fire, 2008 Photo: Hartford FD

White River Junction/Hartford Village/Wilder

- Hotel Coolidge
- Hartford Church
- Harrison Avenue Complex
- Gates-Briggs Building
- Verizon Building
- Hartford High School
- VA Medical Center
- St. Anthony's Church
- Hotel Vermonter
- Brookside Nursing Home

Route 14

- T&R Used Cars
- Gray Auto Sales

Quechee

- Simon Pearce
- Condominiums
- Quechee Inn at Marshland Farm
- Quechee Church
- Quechee Club (including base lodge)
- Quechee Fells Barn

Route 5 South

- Pinecrest Motel
- Young's (propane, gasoline, fuel distribution center)
- Landfill – construction and demolition disposal area

VI. MITIGATION PROGRAM

GOALS AND POLICIES

The 2008 Hartford Annex to the Two-River Ottauquechee Regional Pre-Disaster Mitigation (PDM) Plan was a simple eight page plan that referenced several regional goals:

- Reduce the loss of life and injury resulting from all hazards.
- Lessen financial losses and property damage incurred by municipalities, businesses and private citizens due to disasters.
- The impacts of hazards should be first avoided, then reduced where they cannot be reasonably avoided. For flooding and riverine erosion, this can best be achieved by precluding development from hazard areas, and where development exists through property buyouts or flood protection sympathetic to the natural and human resources of the area.
- The connections between land use, development siting, drainage systems, building standards, and road design and maintenance and the effects of disasters on the Region should be recognized and incorporated into policy so that there is no adverse impact (increased hazard) from development.
- Mitigation actions should be part of larger, systematic efforts at disaster reduction based on the highest threats. Flooding should be addressed on a watershed scale. Structural fire and technological hazards should be lessened through statewide safety education and code compliance.

Table 6.1 (page47) describes the implementation status of the 2008 plan. Current hazard mitigation priorities for Hartford remain very similar, although details on needs and priorities were sharpened by the severe erosive flooding impacts experienced during Tropical Storm Irene and the community planning process described in this Hazard Mitigation Plan. The list of recommended implementation strategies under "Flooding and Erosion" in Table 6.2 for this plan has grown substantially due to that learning process. Landslides, included as a priority in 2008, were removed from the top priority list in this plan due to work having been completed to address the earlier concern.

The regional plan also includes language to support local mitigation. The regional commission is currently conducting a major update of the regional plan under HUD Sustainable Communities funding. Through a post-Irene filter, it's anticipated that the new plan will also provide the framework for a strong regional effort to reduce impacts from future disaster events.

The 2012 Hartford Master Plan (comprehensive plan) also contains a number of statements, objectives and strategies that support local hazard mitigation planning and implementation:

- Generally, extreme slopes, those in excess of 25%, should not be developed, and any land disturbances in these areas for agriculture, forestry, or ski area activities should be conducted with careful attention to erosion control and stormwater management practices.

- Development on severe slopes, those from 15-25%, should also be discouraged or be very limited. The development permit and/or subdivision approval for construction on severe slopes should require measures that minimize the disturbance of existing vegetation, control erosion, stabilize the slope, and protect down slope areas from stormwater runoff. (p.225).

Further plan recommendations relate to improving flood resilience (p. 248):

- Develop and enforce shoreline protection regulations in order to protect riparian areas.
- Conduct field verification of National Wetlands Inventory designations in order to better protect town wetlands.
- Consider adoption of a wetlands protection overlay district to protect town wetlands.
- Incorporate a zero-peak runoff requirement into the subdivision regulations and site plan review requirements which mandate that new development design drainage systems will not discharge any additional peak runoff into existing town surface waters.
- Assess the condition of the existing dams creating the Hurricane Reservoirs and develop plans for their long-term maintenance.

The following plan recommendations, included under Emergency Management, will assist in hazard mitigation (p. 167):

- Enhance technical rescue capabilities at water-related emergencies, topographical rescue, natural and man-made disasters, and transportation accidents through external and internal training programs and equipment.
- Enhance hazardous materials response capabilities through external and internal training programs and equipment to protect life, property, and environment from hazardous materials releases.

Finally, the state of Vermont recently added additional state planning goals (under 24 V.S.A. § 4302) to encourage planning for flood resilience:

- New development in identified flood hazard, fluvial erosion, and river corridor protection areas should be avoided. If new development is to be built in such areas, it should not exacerbate flooding and fluvial erosion.
- The protection and restoration of floodplains and upland forested areas that attenuate and moderate flooding and fluvial erosion should be encouraged.
- Flood emergency preparedness and response planning should be encouraged.

Recent amendments to state planning statutes also require the inclusion of a new flood resiliency element in updated town plans after July 2014. This requirement may be met by FEMA-approved hazard mitigation plans that meet these requirements, which may be incorporated by reference in the town plan.

It should also be noted that a decade of public outreach and education was necessary for the town to enact a thirty foot setback and buffer requirement on streams and ponds, and a

100-foot setback and buffer along riverbanks, in its land use regulations, as applied to new development. The Irene experience raised much broader public awareness by clearly demonstrating the stormwater storage role of floodplains – including town recreational lands – and the need for vegetated buffers. Treed riparian areas in town parks that were damaged in Irene have since been re-planted and will be maintained.

EXISTING PROGRAMS

The Town of Hartford participates in the National Flood Insurance Program. Flood Insurance Rate Maps were first developed on July 2, 1979 and updated February 17, 1989 and again on September 28, 2007. The Town first adopted flood hazard area regulations on June 8, 1979. The bylaw was updated on September 18, 2007. The Town plans to update the bylaw within the next three years to incorporate lessons learned from Tropical Storm Irene. In 2006, Hartford adopted a zoning bylaw amendment, "Protection of Surface Waters." The bylaw established measures to protect riparian areas and instituted a setback for excavations and the placement of structures within 100' of rivers and within 30' of other surface waters.

Hartford Municipal Building (in 100-Year Floodplain)

The Town of Hartford also has Zoning Regulations, Subdivision Regulations, a Transportation Ordinance, an Emergency Management Ordinance, a Hazardous Materials Ordinance and Department of Public Works Specifications. The Hartford Fire Department's Fire Prevention Division, under contract with Vermont Division of Fire Safety, issues construction permits for most public buildings under state-adopted fire codes.

Hartford is presently participating in the Hazard Mitigation Grant Program to buyout properties badly damaged by Tropical Storm Irene. To date, four properties have been acquired and three others are proceeding toward purchase. Hartford also received hazard mitigation funds to elevate wastewater pump stations out of the 100-year flood zone. This work was completed in 2013.

The Town of Hartford Department of Planning and Development Services has been responsible for coordinating the update of the town's hazard mitigation plan. The 2008 Hartford Annex identified hazard mitigation strategies that the town would undertake. Certainly the devastation of Irene eclipsed much of this work from 2011-2013, but the town also learned much from that experience to apply in the update of its mitigation program. Strategies from the 2008 annex, and what has been accomplished to date, are provided in Table 6.1.

Once the updated plan is approved by FEMA for local adoption, the Department of Planning and Development Services will continue to be responsible for monitoring and reporting progress on its implementation, and for coordinating the next plan update, scheduled for 2018.

TABLE 6.1 STATUS: 2008 HMP IMPLEMENTATION PROGRAM

2008 MITIGATION ACTION	2013 IMPLEMENTATION STATUS
ALL HAZARDS/EOP **1. Ensure RRP is current**	Emergency Services Department completed an update in 2013.
2. Ensure EOP is current with annexes for top hazards	Emergency Services Department completed an update in 2013. Following 2011 flooding, a town staff debriefing and plan analysis was completed by an outside consulting firm and incorporated recommendations into 2013 plan update.
FLASH FLOOD/FLOOD **3. Continue road inspection and improvement program – culvert survey, upgrades, ditching**	Done annually by the Hartford Department of Public Works.
4. Inventory wetlands, update town wetland regulations.	Since the Town does not have extensive areas of wetlands, it has relied on the National Wetlands Inventory Mapping.
5. Notify property owners in flood hazard areas about insurance.	Resource information was provided to affected property owners during the recovery from the 2011 Irene Flood. A town-wide information program is part of the revised 5-year HM plan.
6. Improve flood and fluvial erosion hazard identification and mapping by using PDM.	The Town is waiting for assistance from the State. It is expected to be completed within the next five years.
7. Join the Community Rating System to reduce resident insurance premiums.	The Town considered this in 2005 and determined that with so few flood insurance policies in effect, there was minimal benefit for local property owners. Given the Irene Flood and an increase in flood insurance policies, the Town will reconsider this in the revised 5-year HM Plan.
8. Review town ordinances to require tie down of propane tanks in flood hazard area.	Included by reference to FEMA regulations in 2009 update of Flood Hazard Area Regulations. This will be explicitly stated in update of town regulations included in revised 5-year HM Plan.
9. Work with propane vendors to tie down tanks in flood hazard area.	Not currently a priority for propane vendors. Included in next five year plan.
HAZMAT **10. Exercise emergency response to a derailment.**	The Emergency Services Department is in the process of planning an exercise.
LANDSLIDE **11. Stabilize potential landslide areas on Pomfret Rd.**	Stabilization of a landslide area was completed in 2010.
12. Stabilize potential landslides on Jericho Road and Country Lane; possible residential buyouts.	Town staff investigated HMGP grant in 2009, but the Selectboard decided the potential liability to the Town was too high.
WINTER STORM **13. Work with utilities to trim hazard trees.**	Being done annually.
14. Work with VEM and Red Cross to establish emergency shelters with generators.	Completed in 2010.
15. Educate citizens on preparedness for winter travel and extended power outages.	Due to recovery from 2011 flood, activity deferred to revised 5-year HM Plan.

PLAN MITIGATION IMPLEMENTATION STRATEGIES

A compendium of possible mitigation measures was provided for feedback during a second set of public meetings. One central meeting was held in White River Junction at the municipal offices and a second was held at the West Hartford Store. The public meeting started with a PowerPoint explanation of the strategies and then used a sheet similar to the final score listing in Appendix D. to gain feedback. Participants were asked to identify priority measures that the town should undertake within the next five years, while considering the level of need to address the chosen priority hazards, and which strategies could return the most benefit in addressing those hazards by helping to avoid future damage or losses to individuals or the community. The Conservation and Planning Commission chairs participated actively in this process. Planning and Development Department staff then considered the scoring results in relation to potential hazards to be addressed, and the town's administrative, technical and fiscal resources. Based on this assessment, and considering the largest benefit for the least cost, the Planning Director developed a three-tiered approach:

Priority 1 – Actionable items to be initiated or maintained during the next five years that have a large area-wide benefit for little cost, address urgent post-Irene need for individuals or key community infrastructure, and/or anticipate availability of funding and resources.

Priority 2 – Items needing further analysis during the next five years to determine the best course of action based on cost versus probable benefit. Action may begin based on analyses.

Priority 3 – Items important to the town for consideration in the future, but will not be acted on in the next five years.

Using this approach, Planning and Conservation Commission members identified the top implementation strategies and actions to be taken within the next five years (see Appendix E). Over the course of two meetings the Selectboard reviewed the priorities, taking into consideration the costs and benefits of various strategies, and technical feasibilities. They settled on what the Town could commit to over the next five years, given current and anticipated department workloads and budget.

The resulting breakout of mitigation tasks by category for the Town's 2014-19 implementation program – including those items in Priority 3 which are not likely to be addressed in the next five years, but should remain on the list to continue active consideration – are presented as follows.

<u>All Hazards</u>

Priority 1 – Actionable items to be initiated or maintained during the next five years

1. Develop and implement a multi-hazard public awareness program, including providing information on the town's website, annual report and at town libraries regarding emergency preparedness and emergency services, "hazard vulnerability checklists" for local residents and businesses, and information on preparing home emergency kits. Oversee, monitor and provide updates on the Town Hazard Mitigation Program.

2. Consult with partners, such as the Two Rivers-Ottauquechee Regional Commission, the District #12 LEPC, White River Partnership, neighboring towns and state officials to stay up-to-date on hazard data and the most at-risk critical facilities and potential mitigation techniques. In year four of this plan, revisit the Town's risk assessment based on new data.

3. Integrate hazard mitigation into local decision-making by completing this plan update, integrate into Town Master Plan and review hazard mitigation issues when adopting Town policies and land use regulations.

Priority 2 – Items needing further analysis during the next five years to determine the best course of action

1. Evaluate the financial impact of establishing a local reserve fund within the Capital Improvements Program for future mitigation projects and identify matching funds for grants.

2. Analyze and identify options to mitigate issues regarding extended interruptions in food supply, power, fuel, transportation and communications networks; who are the public and non-public partners that should be involved; what are within local control; and what are regional conversations.

Priority 3 – Items important to the Town for consideration in the future, but will not be acted on in the next five years.

1. Fund a dedicated staff position for hazard mitigation and risk assessment at the town or regional level that can provide services to the Town.

<u>Flooding and Erosion</u>

Priority 1 – Actionable items to be initiated or maintained during the next five years

1. Elevate the West Harford library.

2. Continue the Hazard Mitigation Grant Buyout program for properties substantially damaged during the 2011 Irene flooding by completing purchase and site restoration for grants already received and applying for funds to purchase other affected properties.

3. Update the Hartford Flood Hazard Area Regulations to clarify existing requirements for all development in known flood hazard areas, such as tying down propane tanks in flood hazard areas, and elevation certificates or surveys showing elevations for new construction. Integrate lessons learned from the Irene Flood.

4. Work with propane vendors to tie down tanks in flood hazard areas.

5. Incorporate flood resilience, flood mitigation and floodplain management in local planning, and as a separate element of the town plan (new statutory requirement by July 1, 2014).

6. Develop policies and recommendations to reduce exposure and risk within known flood and fluvial erosion hazard areas, especially for critical facilities and infrastructure.

7. Identify off-site, low-risk storage locations for copies of critical public records.

8. Develop policies to protect natural resource areas that provide floodplain protection, riparian buffers, and other ecosystem services that mitigate flooding (e.g., riverbanks, wetlands, riparian buffers, farm, forest and other open land).

9. Address erosion (including fluvial erosion) by updating stormwater management, sediment and erosion control regulations, to include regulations for development in areas of steep slope and stream buffers.

10. Identify locations in town where properties have experienced flooding due to overflowing storm sewer systems, culverts, etc., and determine causes.

11. Regularly inspect and maintain town bridges and culverts and schedule to replace undersized culverts as determined by field inspection.

12. Inventory and track repetitive loss properties. Encourage property owners to document damage from flood events, including repair costs, photographs and high water level.

Priority 2 – Items needing further analysis during the next five years to determine the best course of action

1. Analyze what is required to organize and promote activities to increase local flood risk awareness. This should include:

   - Encourage homeowners to purchase flood insurance.
   - Distribute flood protection safety information to the owners of flood-prone property.
   - Educate citizens about safety during flood conditions, including not driving on flooded roads.
   - Educate property owners regarding options for mitigating their properties from flooding.
   - Educate property owners about the benefits of stabilizing stream banks with vegetation.
   - Educate the public about securing debris, propane tanks, yard items, or stored objects that may be swept away, damaged, or pose a hazard if washed away by floodwaters.

2. Continue community participation in the National Flood Insurance Program (NFIP) and consider upgrading to membership in the Community Rating System (CRS) to gain lower NFIP rates for property owners.

3. Analyze what is required to develop a program to promote the retrofit of historic properties within known flood hazard areas.

4. Investigate benefit and costs of developing and implementing stormwater and erosion control management plans for public buildings.

5. Investigate developing a town-wide program to collect, map and address accurate fluvial geomorphic data for the river corridors.

6. Investigate interest and available resources to establish an annual "Clean our culverts" day during a "Hazards Awareness Week", or fold into Green Up Day, to encourage residents to keep their culverts clear.

7. Investigate adopting a "zero discharge policy" for stormwater in subdivision and site design.

Hazardous Materials Transportation Accidents (Chemicals)

Priority 1 – Actionable items to be initiated or maintained during the next five years

1. Conduct an emergency response exercise every two years with the Railroad companies, VTrans and fuel dealers.

Priority 2 – Items needing further analysis during the next five years to determine the best course of action

1. Identify options and needed resources to disseminate public information materials on how the Town will respond, what residents should do in such an emergency, and where or how they can get information in an event.

Severe Wind

Priority 1 – Actionable items to be initiated or maintained during the next five years

1. Include evaluating the burial of utility lines serving new development as part of subdivision and site plan review.

2. Work with utility companies to identify options to secure above ground utility poles.

3. Develop a public awareness campaign to encourage protecting and securing residential properties from severe wind events.

Severe Winter Weather

Priority 1 – Actionable items to be initiated or maintained during the next five years

1. Continue to insulate public buildings and facilities to provide shelter during extreme weather events.

2. Complete renovations to the Municipal Building

3. Develop schedule to implement energy audit recommendations for Public Works buildings

4. Complete renovations to the Middle School and complete energy audit of at least one more town building.

Priority 2 – Items needing further analysis during the next five years to determine the best course of action

1. Determine interest in and resources needed to organize outreach to residents vulnerable to severe winter hazards, including freezing temperatures and power outages by

planning for and organizing outreach and assistance, and providing community shelter(s), especially during extended power outages.

2. Identify options and resources needed to develop a public awareness program regarding severe winter storms which includes distributing information about:

   - Common winter hazards, family and traveler emergency preparedness, and winter driving safety tips.
   - The installation of carbon monoxide monitors and alarms, and the safe use of heaters.
   - Services available to vulnerable residents.
   - Advice on use of electric vehicles as generators, if the appropriate switch is in place.

3. Determine the need to conduct a snow load analysis for public buildings with flat roofs and any possible town role in devising a warning process for other building owners.

Fire Hazards

Priority 1 – Actionable items to be initiated or maintained during the next five years

1. Design and implement an educational outreach program for residents regarding benefits of residential fire sprinklers.

Priority 2 – Items needing further analysis during the next five years to determine the best course of action

1. Identify opportunities and constraints of requiring that all new development meet industry standards for fire protection including installation of fire sprinklers.

Priority 3 – Items are important to the Town for consideration in the future, but will not be acted on in the next five years.

1. Identify new needed locations and find resources to install and maintain more dry hydrants in strategic locations around town.

Landslides

Priority 3 – Items are important to the Town for consideration in the future, but will not be acted on in the next five years.

1. Stabilize potential landslides and possible residential buyouts on Jericho Road, Country Lane, and Pomfret Road.

Table 6.2 allocates responsibilities, program funding resources/costs and time period by Mitigation Action. The majority of the Mitigation Actions are further broken out into major steps (a., b., c.), with benchmark dates by when each step will be completed. The few Action items without steps were determined to be one major task. The "When (Timeline)" column provides the calendar year by which the task will be completed, and takes into consideration the workflow demands of the Mitigation Plan and other Town responsibilities unrelated to the Mitigation Plan.

The "Funding Resources" column addresses the funding source and estimated cost of implementing (which was part of the town's analysis in prioritizing tasks for the next five years), represented by Low (under $5000), Medium ($5,000 - $10,000) and High (over $10,000). The Hartford Department of Planning and Development Services will have primary responsibility for overseeing, monitoring and providing updates on the Town's HMP/mitigation program, and will involve other Town Departments and outside organizations as noted in the Table.

Table 6.2 Hartford Hazard Mitigation Program: 2014-2019				
Mitigation Action	**Who** (Leadership)	**By When** (Timeframe)	How (Funding, Resources & Cost)	**Implementation** (via Existing Programs, Organizations)
A. All Hazards				
PRIORITY 1– Actionable items to be initiated or maintained during the next five years				
A.1.1 Develop and implement a multi-hazard public awareness program: **a. Compile "hazard vulnerability checklists" for local residents and businesses, and information on preparing home emergency kits. Post on the town's website, in annual reports and at town libraries.** **b. Identify other public information needed on emergency preparedness and emergency services, and develop implementation schedule.**	Planning & Development Department and Public Safety Department	a. 2016 (6-12 months) b. 2018 (6-12 months)	Town Budget Cost Low	Coordinate with Small Business Development, Distribution via Town website, Newsletter, Town Reports, libraries, Senior Center, churches, schools, Public Access TV
A.1.2 Monitor, review and prepare annual updates to maintain active Town Hazard Mitigation Program	Planning & Development Department	Annual status reports (12 months)	Town Budget Cost Low	Selectboard, Town Manager and Town Department
A.1.3 Consult with partners such as the Two Rivers-Ottauquechee Regional Commission, White River Partnership, neighboring towns and state officials: **a. Identify any changes in hazard data, most at-risk critical facilities, and potential mitigation techniques.** **b. Review/revise risk assessment based on new data.**	Planning & Development Department	a. 2015-2016 (12-18 months) b. 2017 (9-12months)	Town Budget Cost Low	Other Town Departments, Planning Commission and Conservation Commission
A.1.4 Integrate hazard mitigation into local decision-making: **a. Complete current update of HM Plan, and integrate into Town Master Plan.** **b. Review hazard mitigation issues when adopting Town policies and land use regulations.**	Planning & Development Department and Planning Commission	a. 2014 (3-6 months) b. 2015-2019 (3-4 years)	In Annual Work Program Cost Low	Incorporate recommendations into town plan, bylaw and policy updates

Mitigation Action	Who (Leadership)	When (Timeframe)	How (Funding, Resources & Cost)	Implementation (via Existing Programs, Organizations)
PRIORITY 1– Actionable items to be initiated or maintained during the next five years				
A.2.5 Analyze and identify options to mitigate issues regarding extended interruptions in food supply, power, fuel, transportation and communications networks; **a. Determine what issues are within local control; and what are regional conversations.** **b. Investigate public and non-public partner involvement.**	Planning & Development, Emergency Management Director	a. 2017 (9-12 months) b. 2018 (9-12 months)	In Annual Work Program of both Departments Cost a. Medium b. Low	Via broad public process & Two Rivers-Ottauquechee Regional Commission
A.2.6 Evaluate the financial impact of establishing a local reserve fund within the Capital Improvements Program for future mitigation projects, and identify matching funds for grants.	Planning & Development Department	2015 (6-12 months)	Planning & Development Staff Cost Low	Town Manager, Selectboard & Planning Commission
B. Flooding and Erosion				
PRIORITY 1 – Actionable items to be initiated or maintained during the next five years				
B.1.1 Elevate the West Hartford Library as part of the repair and reconstruction of the building following the 2011 Irene Flood.	Planning & Development Department	2014 (9-12 months)	FEMA & Town Funds Cost High	Town Manager & Selectboard
B.1.2 Continue the Hazard Mitigation Grant Buyout program for properties substantially damaged during the 2011 Irene Flood. **a. Complete purchase and site restoration for grants already received.** **b. Apply for funds to purchase other properties. If obtained complete purchase, site restoration.**	Planning & Development Department	a. 2014 (2-3 years) b. 2014-2015 (12-18 months)	HMGP & CDBG Funds Cost High	Town Manager & Selectboard
B.1.3 Mitigate damage from future flood and erosion damage through changes in the Hartford Flood Hazard Area Regulations: **a. Complete draft revision to clarify existing requirements for all development in known flood hazard areas, such as tying down propane tanks in flood hazard areas, and elevation.**	Planning & Development Department	a. 2015 (9-12 months)	VT Emergency Management, Agency of Natural Resources Rivers Management and Two Rivers-Ottauquechee Regional Commission	Planning Commission, Selectboard

Mitigation Action	Who (Leadership)	When (Timeframe)	How (Funding, Resources & Cost)	Implementation (via Existing Programs, Organizations)
B.1.3 Mitigate damage from future flood and erosion damage through changes in the Hartford Flood Hazard Area Regulations (cont.): **certificates or surveys showing elevations for new construction. Integrate lessons learned from the Irene Flood.** **b. Finalize and adopt regulation changes.**		b. 2017 (12-18 months)	Cost High	
B.1.4 Secure tanks in flood hazard areas. **a. Assemble group of vendors & town agencies.** **b. Identify options/recommendations for securing tanks.** **c. Implement recommendations.**	Public Safety Department	a. 2015 (1-3 mths) b. 2016 (6-9 mths) c. 2017 (9-12 mths)	Annual Work Program Cost: a. Medium b. Medium c. Low	Planning & Development Department
B.1.5 Reduce exposure and risk within known flood hazard areas through changes in the Town Plan and establishment of policies and recommendations, especially for critical facilities and infrastructure, and as required by new State law. **a. Identify off-site, low-risk storage locations for copies of critical public records.** **b. Assemble working group and develop draft policies and recommendations** **c. Finalize policies and recommendations, and begin implementation.**	Planning & Development Department	a. 2014 (3-6 months) b. 2016 (18-24 months) c. 2019 (18-24 months)	Annual Work Program Cost: a. Low b. Low c. Medium	Public Works, Town Manager & Selectboard
B.1.6 Mitigate impact of flooding in riverbanks, wetlands, riparian buffers, farm, forest and other open land through better management and protection of sensitive natural resources in and around these areas. **a. Assemble working group and identify sensitive areas and opportunities for protection.** **b. Develop draft policies and recommendations.** **c. Finalize policies/recommendations and initiate implementation.**	Conservation Commission with Planning & Development Department	a. 2017 (9-12 months) b. 2018 (9-12 months) c. 2019 (9-12 months)	Annual Work Program Cost: a. Low b. Medium c. Medium	White River Partnership, Vermont River Conservancy, Upper Valley Land Trust and other partners

Mitigation Action	Who (Leadership)	When (Timeframe)	How (Funding, Resources & Cost)	Implementation (via Existing Programs, Organizations)
B.1.7 Update stormwater management, sediment and erosion control regulations to comprehensively address fluvial and other erosion, steep slopes and stream buffers. **a. Complete draft document.** **b. Complete final draft.** **c. Complete adoption process**	Planning & Development Department with Planning Commission	a. 2015 (12-18 months) b. 2016 (9-12 months) c. 2017 (6-9 months)	Annual Work Program Cost: a. Medium b. Medium c. Low	Two Rivers-Ottauquechee Regional Commission, Agency of Natural Resources and Selectboard
B.1.8 Identify locations in town where properties have experienced flooding due to overflowing storm sewer systems, culverts, etc., and determine causes. **a. Complete analysis in White River Junction.; begin pursuing recommendations.** **b. Identify other locations in town and develop analysis schedule.** **c. Complete analysis in at least one of the areas.**	Public Works Department	a. 2015 (6-12 months) b. 2017 (6-9 months) c. 2019 (9-12 months)	Annual Work Program Cost: a. Medium b. Low c. Medium	Two Rivers-Ottauquechee Regional Commission
B.1.9 Regularly inspect town bridges and culverts to determine if adequate funds are in the Town budget for maintenance and upgrades to meet required standards.	Public Works Department	Annually (6-9 months)	Annual Work Program Cost Low	Selectboard
B.1.10 Inventory and track repetitive loss properties, including repair costs, photographs and high water level. **a. Update FEMA database started with Tropical Storm Irene, with most current information for public and private properties.** **b. Solicit information from property owners to document damage from other flood events.**	Planning & Development, Parks & Recreation, Public Works Dept.	a. 2016 (9-12 months) b. following events (9-12 months)	Annual Work Program Cost: a. Medium b. Low	Vermont Emergency Management
PRIORITY 2- Items needing further analysis during the next five years to determine the best course of action.				
B.2.11 Analyze what is required to organize and promote activities to increase local flood risk awareness. Identify options/strategies and consider implementation.	Planning & Dev. Dept., Public Safety & Conservation Commission	2016 (9-12 months)	Grant assistance Cost Low	Vermont Emergency Management, CERT or Two Rivers-Ottauquechee Regional Commission

Mitigation Action	Who (Leadership)	When (Timeframe)	How (Funding, Resources & Cost)	Implementation (via Existing Programs, Organizations)
B.2.12 Review criteria and responsibilities for participation in the National Flood Insurance Program (NFIP) Community Rating System (CRS) and determine if appropriate for the Town.	Planning & Development Department	2015 (9-12 months)	Annual Work Program/Cost Low	Town Manager, Selectboard, VLCT and other CRS communities
B.2.13 Analyze what is required to develop a program to promote retrofitting of historic properties within flood hazard areas, and determine if the Town should proceed.	Planning & Dev. Department, Hartford Historic Preservation Commission	2018 (9-12 months)	Possible Certified Local Government Grant Cost Medium	Preservation Trust of Vermont, Vermont Division for Historic Preservation
B.2.14 Investigate the benefits and needed resources to develop and implement stormwater and erosion control management plans for public buildings.	Department of Public Works & Planning & Development Department	2018 (9-12 months)	Annual Work Program Cost Medium	Selectboard and School Board
B.2.15 Investigate developing a town-wide program to collect, map and address accurate fluvial geomorphic data for the river corridors.	Planning & Development Department	2017 (9-12 months)	Annual Work Program Cost High	Vermont Agency of Natural Resources ,White River Partnership and Two Rivers-Ottauquechee Regional Commission
B.2.16 Identify interest and available resources to establish an annual "Clean our culverts" day during a "Hazards Awareness Week", or fold into Green Up Day, to encourage residents to maintain their culverts.	Department of Public Works & Planning & Development Department	2016 (6-9 months)	Annual Work Program Cost Low	Hartford Conservation Commission
B.2.17 Investigate adopting a "zero discharge policy" for stormwater in subdivision and site design.	Planning & Dev. Dept. & Planning Commission	2018 (3-6 months)	Annual Work Program Cost Low	Department of Public Works & Selectboard
C. Hazardous Materials Transportation Accidents (Chemicals)				
PRIORITY 1 - Actionable items to be initiated or maintained during the next five years				
C.1.1 Conduct an emergency response exercise every two years with the Railroad companies, VTrans and fuel dealers	Public Safety Department	2015, 2017, 2019 (3-6 months each year)	Annual Work Program, VTrans, VT DEC and VEM Cost Low	VTrans, Rail Companies

Mitigation Action	Who (Leadership)	When (Timeframe)	How (Funding, Resources & Cost)	Implementation (via Existing Programs, Organizations)
PRIORITY 2- Items needing further analysis during the next five years to determine the best course of action.				
C.2.2 Identify options and needed resources to disseminate public information on how the Town will respond, where or how residents can obtain information, and what residents should do in such an emergency	Public Safety Department	2018 (9-12 months)	Annual Work Program Cost Low	Upper Valley Strong, Community Leaders
D. Severe Wind				
PRIORITY 1 - Actionable items to be initiated or maintained during the next five years				
D.1.1 As subdivision and site development review applications come before the Planning Commission, evaluate the feasibility of undergrounding utilities.	Planning & Dev. Dept. & Planning Commission	Regularly reviewed during application submittal process (1-2 months)	Annual Work Program Cost Low	Utility Companies, Two Rivers-Ottauquechee Regional Commission
D.1.2 Work with utility companies to identify options to secure above ground utility poles. **a. Assemble group of utility representatives & town agencies.** **b. Identify options/recommendations for securing utility poles.** **c. Begin implementation of recommendations.**	Planning Commission	a. 2015 (2-3 months) b. 2016 (9-12 months) c. 2018 (6-12 months)	Annual Work Program Cost: a. Low b. Medium c. Medium	Department of Public Works
D.1.3 Develop a public awareness campaign to encourage protecting and securing residential properties from severe wind events in coordination with Mitigation Action A.1.1. **a. Develop vulnerability checklist and distribution of information.** **b. Identify other information needed regarding emergency preparedness and emergency services, and develop implementation schedule.**	Public Safety Department	a. 2016 (6-12 months) b. 2018 (6-12 months)	Town Budget Cost: a. Low b. Low	Distribution via Town website, Newsletter, Town Reports, libraries, Senior Center, churches, schools, Public Access TV

Mitigation Action	Who (Leadership)	When (Timeframe)	How (Funding, Resources & Cost)	Implementation (via Existing Programs, Organizations)
E. Severe Winter Weather				
PRIORITY 1 – Actionable items to be initiated or maintained during the next five years				
E.1.1 Continue to insulate public buildings and facilities to provide shelter during extreme weather events. **a. Complete renovations to Municipal Building.** **b. Develop schedule to implement energy audit recommendations for Public Works buildings.** **c. Complete renovations to Middle School** **d. Complete energy audit of 1 other town building.**	Energy Commission	a. 2015 (12-15 months) b. 2015 (1-3 months) c. 2016 (12-18 months) d. 2016 (3-6 months)	Town Budget Cost a. High b. Medium c. High d. Medium	Town Manager, Selectboard, Efficiency Vermont
PRIORITY 2– Items needing further analysis during the next five years to determine the best course of action.				
E.2.2 Determine if sufficient interest and resources exist to organize community-based outreach, assistance and shelters for vulnerable residents during extended freezing temperatures and power outages.	Public Safety Department	2018 (6-12 months)	Annual Work Program Cost Low	Community Leaders
E.2.3 Identify options and resources needed to develop a public awareness program regarding severe winter storms in coordination with Mitigation Action A.1.1. **a. Develop vulnerability checklist and distribution of information.** **b. Identify other information needed regarding emergency preparedness and emergency services, and develop implementation schedule**	Public Safety Department	a. 2016 (6-12 months) b. 2018 (6-12 months)	Town Budget Cost a. Low b. Low	Distribution via Town website, Newsletter, Town Reports, libraries, Senior Center, churches, schools, Public Access TV
E.2.4 **a. Determine the need to conduct a snow load capacity analysis for public buildings given changing weather patterns.** **b. Determine the Town's role in a community warning process for buildings with flat roofs.**	Public Safety Department	a. 2016 (9-12 months) b. 2017 (3-6 months)	Work Program Cost a. Low b. Low	Selectboard, VT Dept of Labor and Industry

Mitigation Action	Who (Leadership)	When (Timeframe)	How (Funding, Resources & Cost)	Implementation (via Existing Programs, Organizations)
F. Fire Hazards				
PRIORITY 1 - Actionable items to be initiated or maintained during the next five years				
F.1.1 Provide educational materials and outreach to residents regarding benefits of residential fire sprinklers. **a. Design outreach program** **b. Implement**	Public Safety Department	a. 2014 (3-6 months) b. 2015-2019 (3-5 years)	Town Budget Cost: a. Low b. Medium	Distribution via Town website, Newsletter, Town Reports, libraries, Senior Center, churches, schools, Public Access TV
PRIORITY 2- Items needing further analysis during the next five years to determine the best course of action.				
F.2.2 Identify the opportunities and constraints of requiring that all new development meet industry standards for fire protection, including installation of fire sprinklers.	Public Safety Department	2018 (9-12 months)	Work Program Cost Medium	Planning Commission and Selectboard

The following **Priority 3** items are important to the Town for consideration in the future, but will not be acted on in the next five years:

All Hazards

1. Fund a dedicated staff position for hazard mitigation and risk assessment at the town or regional level that can provide services to the Town.

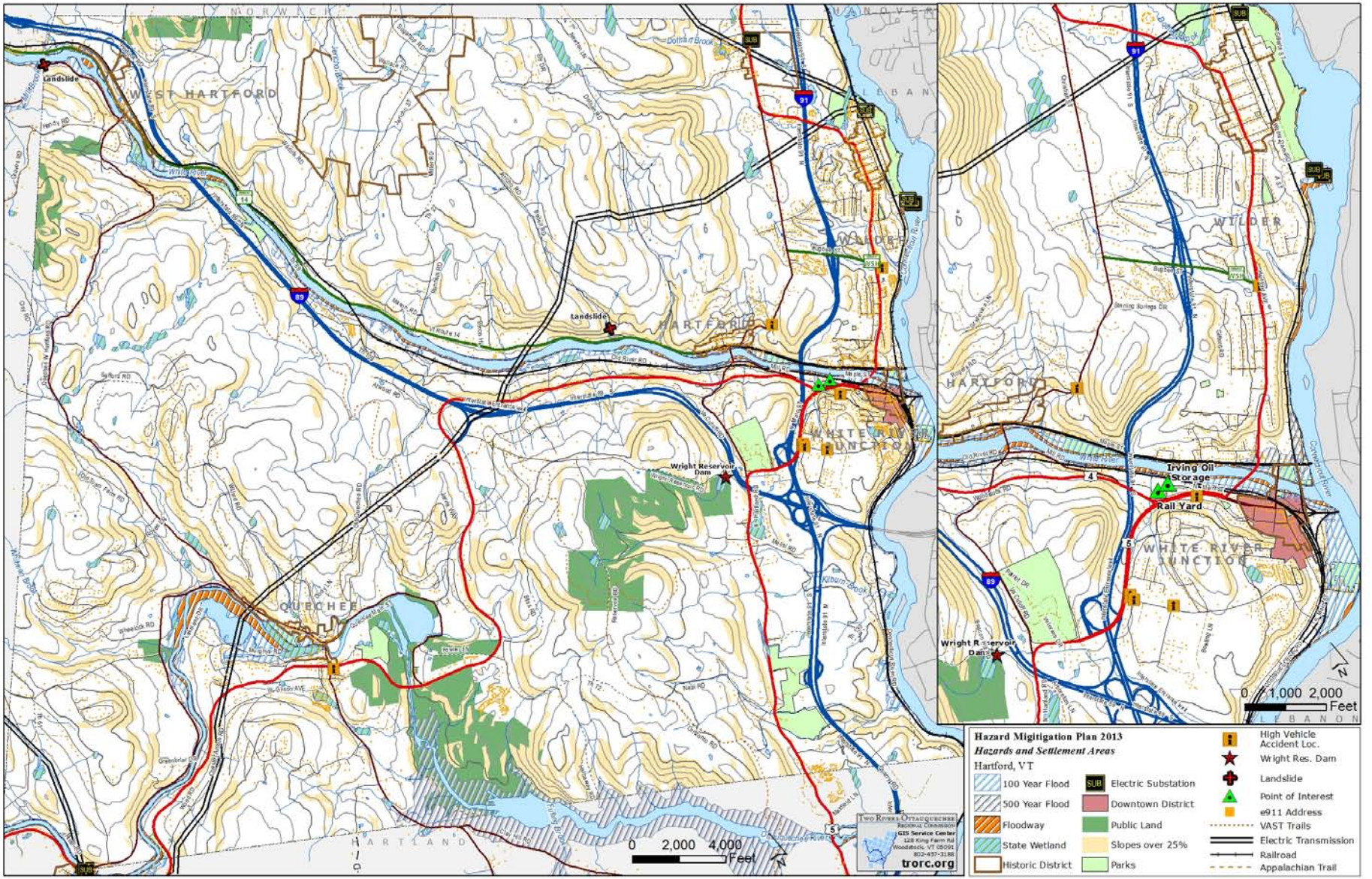
Fire Hazards

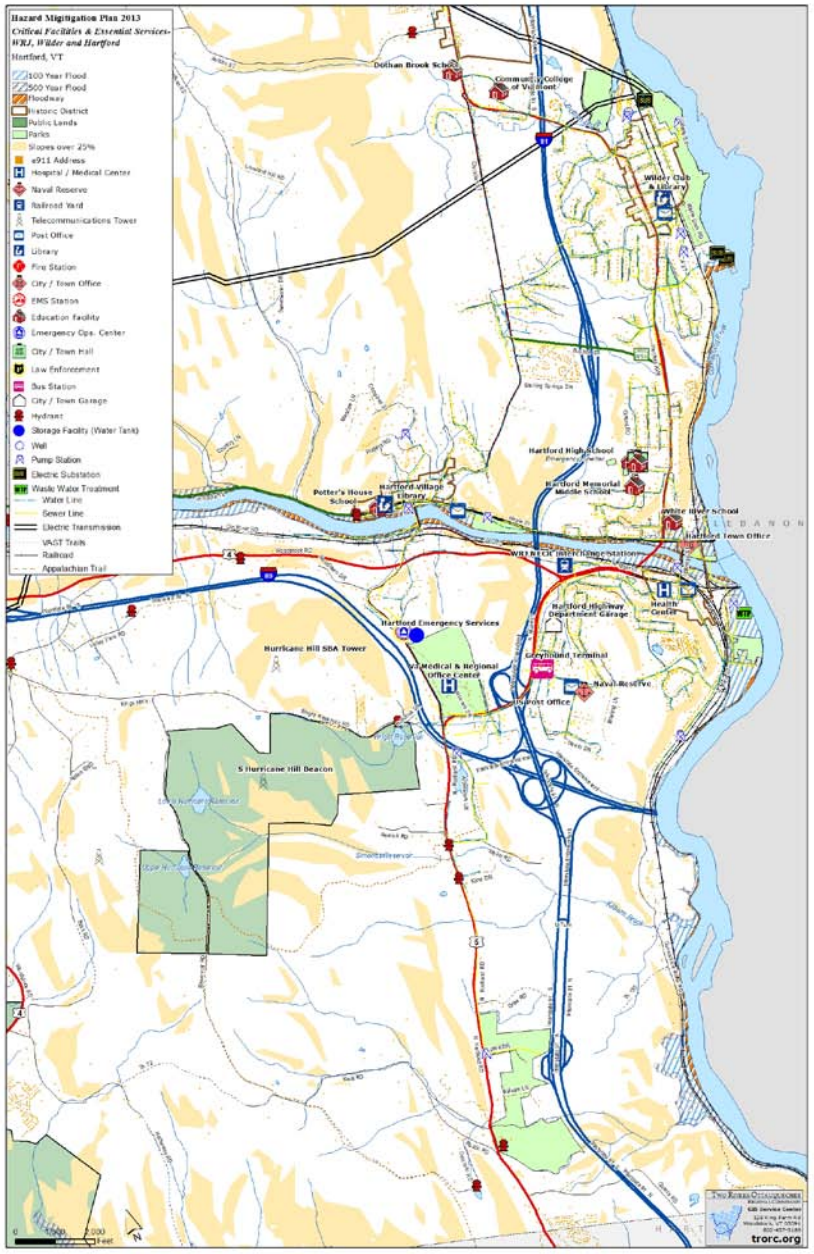
1. Install and maintain dry hydrants in strategic locations around town.

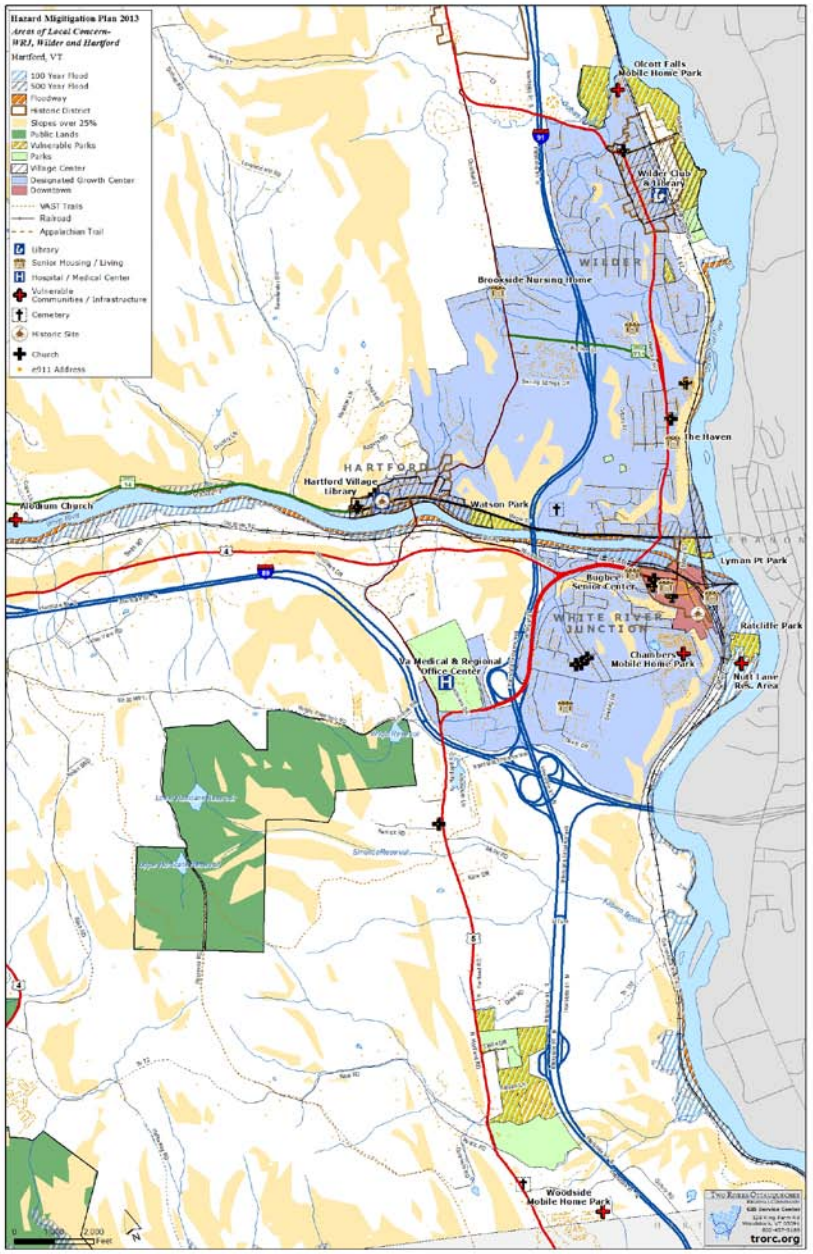
Landslides

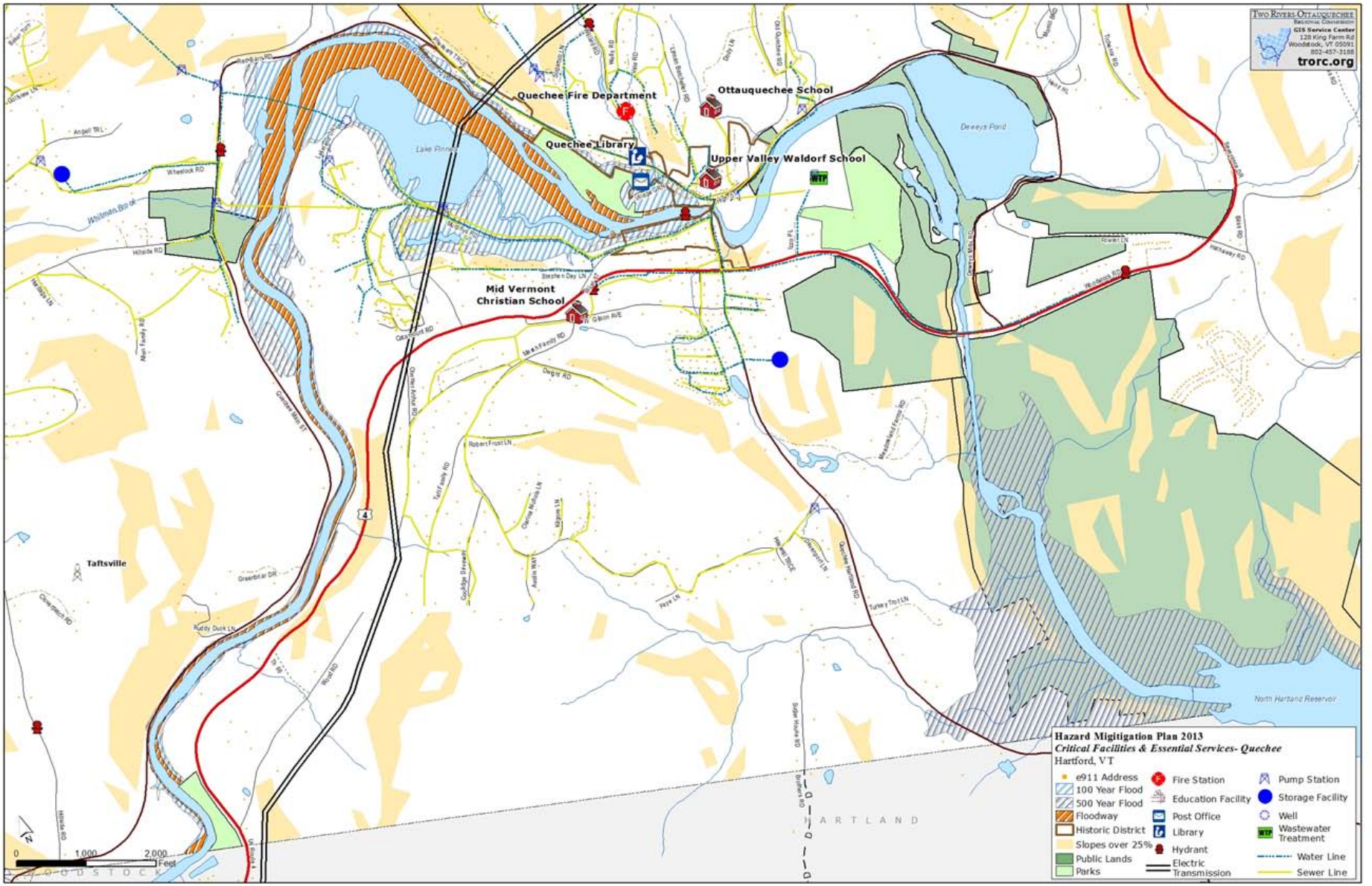
1. Stabilize potential landslides and possible residential buyouts on Jericho Road, Country Lane, and Pomfret Road.

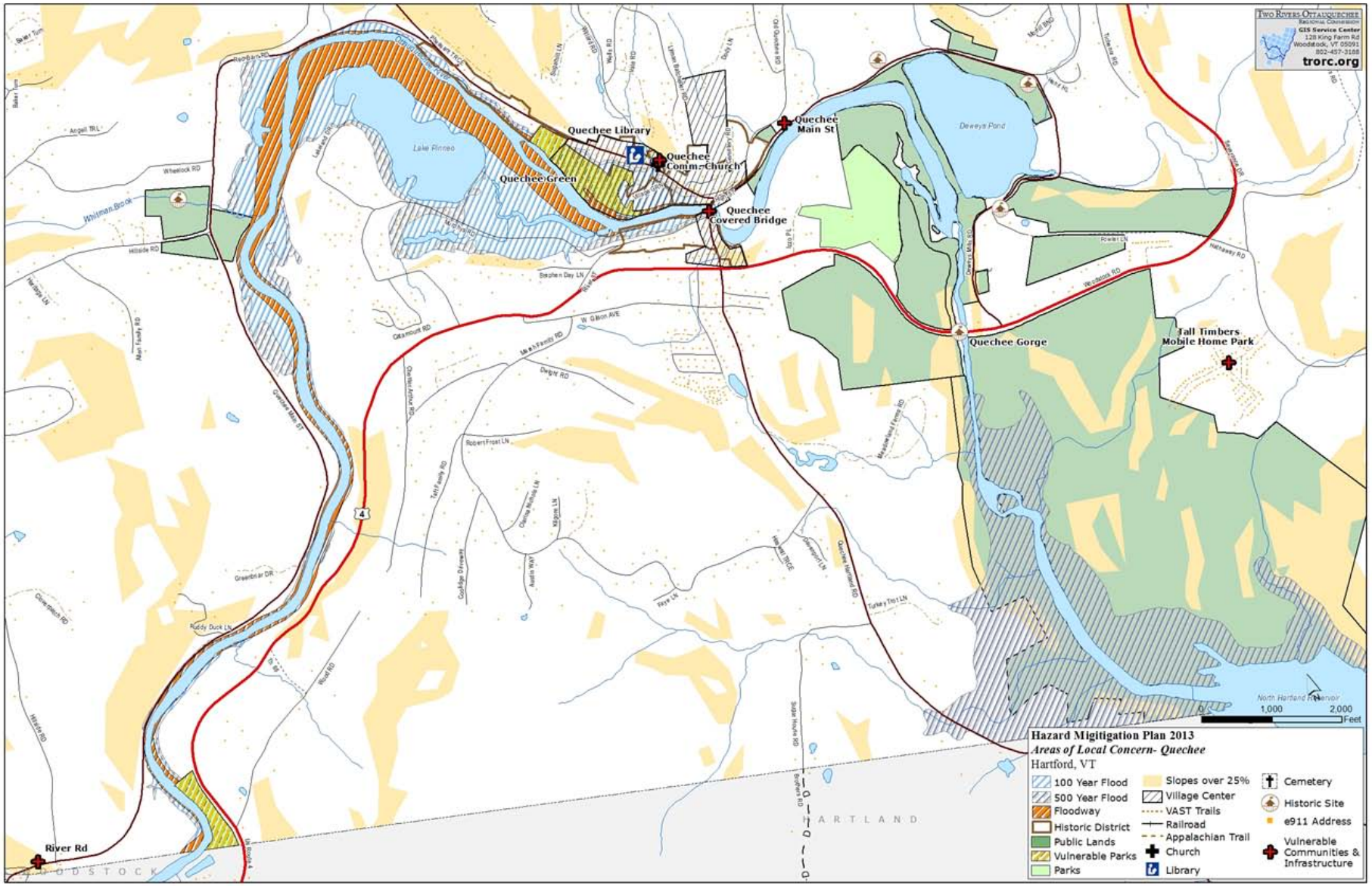
MAPS [Full size maps available from Hartford Planning and Development Department.]

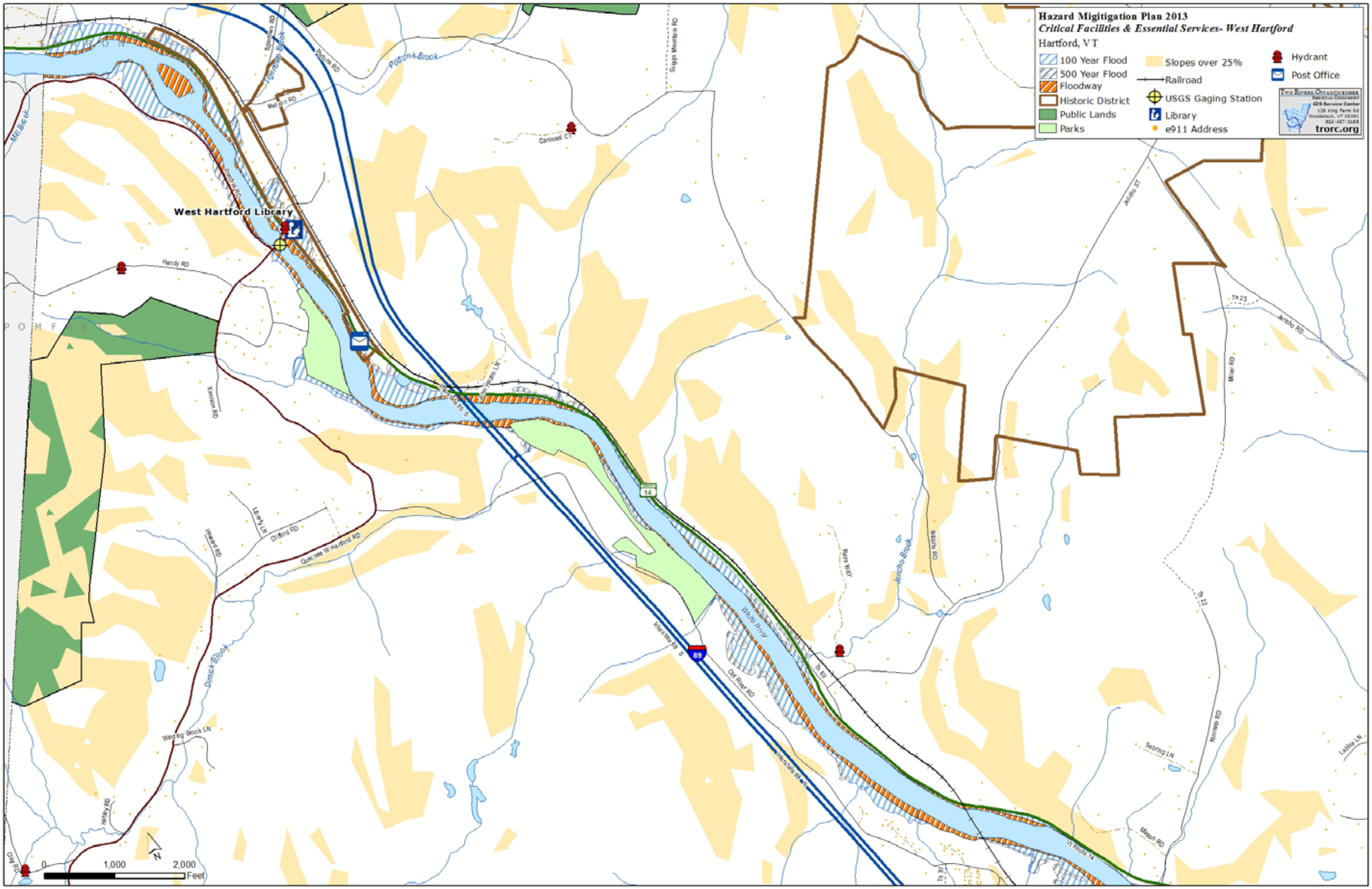


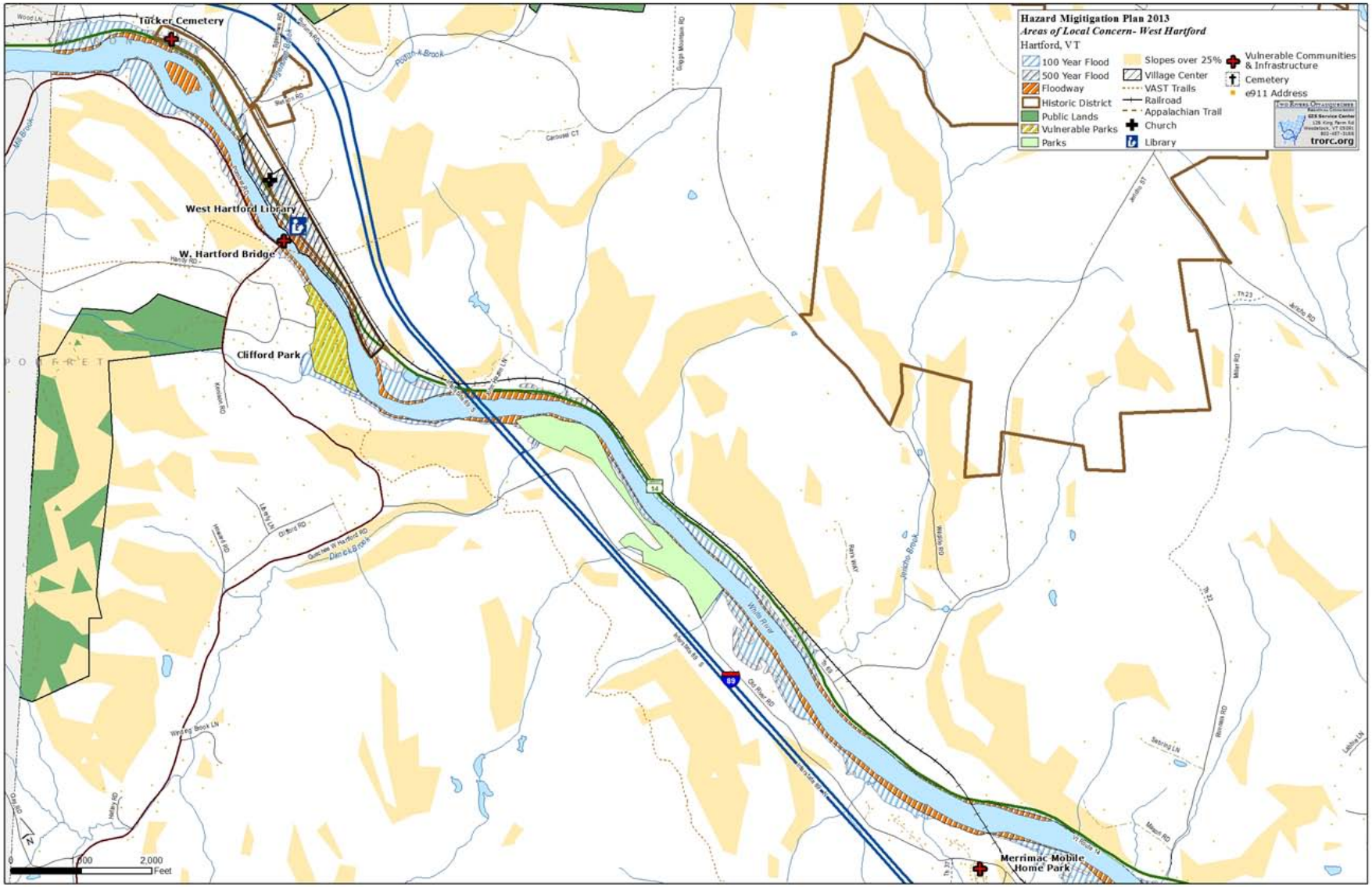

Hazard Mitigation Plan 2013
Critical Facilities & Essential Services-
WRJ, Wilder and Hartford
Hartford, VT
100 Year Flood
500 Year Flood
Floodway
Historic District
Public Lands
Parks
Slopes over 25%
e911 Address
Hospital / Medical Center
Naval Reserve
Railroad Yard
Telecommunications Tower
Post Office
Library
Fire Station
City / Town Office
EMS Station
Education Facility
Emergency Ops. Center
City / Town Hall
Law Enforcement
Bus Station
City / Town Garage
Hydrant
Storage Facility (Water Tank)
Well
Pump Station
Electric Substation
Waste Water Treatment
Water Line
Sewer Line
Electric Transmission
VAST Trails
Railroad
Appalachian Trail
Dothan Brook School
Community College of Vermont
Wilder Club & Library
Hartford High School
Hartford Memorial Middle School
Potter's House School
Hartford Village Library
White River School
Hartford Town Office
WHITE RIVER JUNCTION
Hartford Emergency Services
Hartford Highway Department Garage
Health Center
Hurricane Hill SBA Tower
Greyhound Terminal
Naval Reserve
Dartmouth Office
Hurricane Hill Beacon
trorc.org


Hazard Mitigation Plan 2013
Areas of Local Concern-
WRJ, Wilder and Hartford
Hartford, VT
100 Year Flood
500 Year Flood
Floodway
Historic District
Slopes over 25%
Public Lands
Vulnerable Parks
Parks
Village Center
Designated Growth Center
Downtown
VAST Trails
Railroad
Appalachian Trail
Library
Senior Housing / Living
Hospital / Medical Center
Vulnerable Communities / Infrastructure
Cemetery
Historic Site
Church
e911 Address
Olcott Falls Mobile Home Park
Wilder Club & Library
WILDER
Brookside Nursing Home
The Haven
HARTFORD
Hartford Village Library
Watson Park
Lyman Pt Park
Bugbee Senior Center
WHITE RIVER JUNCTION
Ratcliffe Park
Chambers Mobile Home Park
Nutt Lane Rec. Area
Woodside Mobile Home Park
trorc.org


Quechee Fire Department
Ottauquechee School
Quechee Library
Upper Valley Waldorf School
Mid Vermont Christian School
Taftsville
Deweys Pond
North Hartland Reservoir
HARTLAND
WOODSTOCK
Two Rivers-Ottauquechee Regional Commission
GIS Service Center
128 King Farm Rd
Woodstock, VT 05091
802-457-3188
trorc.org
Hazard Migitigation Plan 2013
Critical Facilities & Essential Services- Quechee
Hartford, VT
e911 Address
100 Year Flood
500 Year Flood
Floodway
Historic District
Slopes over 25%
Public Lands
Parks
Fire Station
Education Facility
Post Office
Library
Hydrant
Electric Transmission
Pump Station
Storage Facility
Well
Wastewater Treatment
Water Line
Sewer Line
0
1,000
2,000
Feet


Two Rivers Ottauquechee
GIS Service Center
128 King Farm Rd
Woodstock, VT 05091
802-457-3188
trorc.org
Quechee Library
Quechee Comm. Church
Quechee Main St
Quechee Green
Quechee Covered Bridge
Quechee Gorge
Tall Timbers Mobile Home Park
Lake Pinneo
Deweys Pond
North Hartland Reservoir
River Rd
HARTLAND
WOODSTOCK
0 1,000 2,000 Feet
Hazard Migitigation Plan 2013
Areas of Local Concern- Quechee
Hartford, VT
100 Year Flood
500 Year Flood
Floodway
Historic District
Public Lands
Vulnerable Parks
Parks
Slopes over 25%
Village Center
VAST Trails
Railroad
Appalachian Trail
Church
Library
Cemetery
Historic Site
e911 Address
Vulnerable Communities & Infrastructure


Hazard Migitigation Plan 2013
Critical Facilities & Essential Services- West Hartford
Hartford, VT
100 Year Flood
500 Year Flood
Floodway
Historic District
Public Lands
Parks
Slopes over 25%
Railroad
USGS Gaging Station
Library
e911 Address
Hydrant
Post Office
trorc.org
West Hartford Library
White River
Handy RD
Quechee W Hartford RD
Dimick Brook
Jericho Brook
Pomfret
0
1,000
2,000
Feet


Hazard Migitigation Plan 2013
Areas of Local Concern- West Hartford
Hartford, VT
100 Year Flood
500 Year Flood
Floodway
Historic District
Public Lands
Vulnerable Parks
Parks
Slopes over 25%
Village Center
VAST Trails
Railroad
Appalachian Trail
Church
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Vulnerable Communities & Infrastructure
Cemetery
e911 Address
trorc.org
Tucker Cemetery
West Hartford Library
W. Hartford Bridge
Clifford Park
Merrimac Mobile Home Park
0
2,000
Feet

APPENDICES

A. Hartford Capability Assessment Worksheet

B. Community Assets Worksheet

C. Hazards Rating Worksheet

D. Checklist Summaries from Public Meetings

E. Planning Commission & Selectboard Consolidated Strategies

F. Glossary of Acronyms

Appendix A. Hartford Capability Assessment		
	Yes/No	**Notes [Names, adoption dates, description, etc.]**
Plans		
Comprehensive Municipal Plan	Yes	Adopted in 1959 and updated 1965, 1974, 1980, 1987, 1993, 1998, 2003, 2007 & 2012
Capital Improvement Plan	Yes	Current Year Updated Annually; five-year updated in 2010
Hazard Mitigation Plan	Yes	Adopted in 2008
Emergency Operations Plan	Yes	Updated 2013
River Corridor Management Plan	No	
Other		
Regulations		
Zoning Regulations	Yes	Adopted in 1962 and amended in 1975, 1978, 1981, 1982, 1984, 1988, 1989, 1994, 1995, 1997, 1998, 2001, 2002, 2004, 2005, 2006, 2007 and 2008.
Subdivision Regulations	Yes	Adopted in 1970 and amended in 1972, 1975, 1984 and 1987; update underway with adoption in 2014
Flood Hazard Area Regulations	Yes	Adopted in 1979 and amended 2007
Fluvial Erosion Hazard Area Regulations	No	
Emergency Management Ordinance	Yes	Needs Updating
Stormwater Management Regulations	Yes	In Zoning Regulations
Highway Ordinance/Standards	Yes	Adopted 1990 and updated in 2012
Fire Permits	Yes	Permit Process in place
Public Works Ordinance/Standards	Yes	Adopted 2012
Building Code	No	Fire code – applies to public buildings
Programs		
Open Space/Conservation Fund	Yes	Established in 1993
Right-of-way maintenance	Yes	Ongoing
Administration		

	Yes/No	Notes [Names, adoption dates, description, etc.]
Fire Department	Yes	
Rescue Services	Yes	
Policing Services	Yes	
Emergency Management Services	Yes	
Mutual Aid Agreements	Yes	Member agreement with 35 towns
Planning Commission	Yes	1950s
Zoning/Development Review Board	Yes	1962
Mitigation Planning Committee	No	
Staff		
Emergency Manager	Yes	Delegated by Town Manager to Public Safety Director
Floodplain Administrator (FPA)	Yes	1979, Zoning Administrator
Zoning/Code Administrator	Yes	
Community Planner	Yes	
GIS Services	Yes	
Road Foreman/Commissioner	Yes	
Health Officer	Yes	
Fire Officer	Yes	
Public Works Director	Yes	
Other		
Technical Resources		
E-911	Yes	Region PSAP Center
Warning Systems	Yes	Code Red Mass Notification System
Data, Information	Yes	Town Information Technology Staff
Grant Writing	Yes	
Hazus Analyses	No	
Financial Resources		
Property Tax	Yes	

Reserve Funds	Yes	

Appendix B. Hartford Community Assets Worksheet

	Facility	Location	Description/Notes
Critical Facilities			
Public Safety	Hartford Emergency Services Building	812 VA Cutoff Road, White River Junction	
Town Office	Hartford Municipal Building	171 Bridge Street, White River Junction	Located within the 100-year flood zone
Town Garage	DPW Facility	173 Airport Road, White River Junction	
Schools	Dothan Brook School	2300 Christian Street, Wilder	
	White River School	102 Pine Street, White River Junction	
	Ottauquechee School	304 Dody Lane, Quechee	
	Hartford High School	37 Highland Avenue, White River Junction	
	Hartford Memorial Middle School	245 Highland Avenue, White River Junction	
	Hartford Area Career Technology Center	1 Gifford Road, White River Junction	
	Regional Alternatives Program	160 Norwich Avenue, Wilder	
	Upper Valley Waldorf School	80 Bluff Road, Quechee	
	Mid-Vermont Christian School	399 West Gilson Avenue, Quechee	
	Mid-Vermont Christian High School	39 West Gilson Avenue, Quechee	
	Potter's House School	1615 Maple Street, Hartford Village	
	Community College of Vermont	145 Billings Farm Road, Wilder	
	Center for Cartoon Studies	92 South Main Street, White River Junction	
Medical Facilities	VA Medical Center (Hospital)	163 North Hartland Road, White River Junction	
	Good Neighbor Health Clinic	70 North Main Street, White River Junction	

	Upper Valley Haven (Homeless Shelter)	713 Hartford Avenue, White River Junction	
	Facility	**Location**	**Description/Notes**
Water Supply/ Fire	Wilder Well	200 Cranberry Lane, Wilder	
	Quechee Well	367 Lakeland Drive, Quechee	Located within the 100-year flood zone
Wastewater	White River Junction Sewage Treatment Plant	319 Latham Works Lane, White River Junction	Located within the 100-year flood zone
	Quechee Sewage Treatment Plant	142 Izzo Place, Quechee	
Dams	Wilder Dam	351 Wilder Dam Road, Wilder	
	Wright Reservoir Dam	Wright Reservoir Road, White River Junction	
Substations		288 Gillette Street, Wilder	
		2393 Hartford Avenue, Wilder	
		2430 Hartford Avenue, Wilder	
Transmission Lines		Taftsville to Wilder	
		Wilder to Norwich	
Waste Disposal	Hartford Transfer Station/Recycling Center	2590 North Hartland Road, White River Junction	
Transportation	Advance Transit	120 Billings Farm Rd, Wilder	
	White River Jct Train Station (incl. AMTRAK)	102 Railroad Row	
	Greyhound Bus Station	44 Sykes Avenue	
	VTrans District Operations Office	221 Beswick Drive	
Cultural Facilities			
Historic Districts/	White River Junction Historic District	Downtown White River Junction	Some buildings in the 100-year flood zone

Sites	Quechee Historic Mill District	Quechee Village	Some buildings in the 100-year flood zone
	Hartford Village Historic District	Hartford Village	
	Wilder Village Historic District	Wilder Village	
	Facility	**Location**	**Description/Notes**
Historic Districts/ Sites	Christian Street Rural Historic District	Wilder	
	West Hartford Village Historic District	West Hartford Village	Some buildings in the 100-year flood zone
	Jericho Rural Historic District	Jericho	
	Terraces Historic District	White River Junction	
	Theron Boyd Homestead Historic Site	11 Hillside Road, Quechee	
Libraries	Hartford Town Library	5133 Route 14, West Hartford Village	Located within the 100-year flood zone
	Quechee Library	1957 Quechee Main Street, Quechee	
	Hartford Village Library	1587 Maple Street, Hartford Village	
	Wilder Club and Library	78 Norwich Avenue, Wilder Village	
Parks and Recreational Facilities	George Ratcliffe Park	75 Latham Works Lane, White River Junction	Located within the 100-year flood zone
	Watson Memorial Park	1120 Maple Street, Hartford Village	Located within the 100-year flood zone
	Lyman Point Park	167 Maple Street, White River Junction	Located within the 100-year flood zone
	Dewey's Landing	Quechee Main Street, Quechee	Located within the 100-year flood zone
	Quechee Green Park	70 Village Green Circle, Quechee	Located within the 100-year flood zone
	Erwin Clifford Park	100 Recreation Drive, West Hartford	Located within the 100-year flood zone
	Kilowatt Park North	321 Gillette Street, Wilder	

	Kilowatt Park South	61 Passumpsic Avenue, Wilder	Site of the Wilder Dam
	Frost Park	130 South Street, Wilder Village	
	Meetinghouse Common	520 Center of Town Road, Hartford	
	Maxfield Athletic Fields	120 Lesle Drive, White River Junction	
	Facility	**Location**	**Description/Notes**
Parks and Recreational Facilities	Hurricane Forest Wildlife Refuge	270 Wright Reservoir Road, White River Junction	Site of the Wright Reservoir Dam
	Fred Briggs Park	6 South Main Street, White River Junction	
	Veterans Memorial Park	12 Railroad Row, White River Junction	
	Sherman Manning Pool	43 Highland Avenue, White River Junction	
	Wendell Barwood Arena	45 Highland Avenue, White River Junction	
	Maanawaka Conservation Area	2333 Hartford Avenue, Wilder	
	Hartford Town Forest	Reservoir Road, Hartford	
	David Chang Conservation Area	Route 4, Quechee	
Churches	St. Paul's Episcopal Church	749 Hartford Avenue, White River Junction	
	St. Anthony's Catholic Church	41 Church St. White River Junction	
	Valley Bible Church	851 Fairview Terrace, White River Junction	
	United Methodist Church of White River Junction	106 Gates Street, White River Junction	
	Advent Christian Church	150 Advent Lane, White River Junction	
	Greater Hartford United Church of Christ	1721 Maple St. Hartford Village	
	Praise Chapel	1615 Maple Street, Hartford Village	
	Church of Christ	4330 Woodstock Road, Quechee	
	Quechee Community Church	1905 Quechee Main Street, Quechee	
	Alodium Church	1450 Route 14, West Hartford	
	Revival Connections	1613 Route 14, West Hartford	

	West Hartford United Church of Christ	5275 Route 14, West Hartford	
Cemeteries	Hartford Cemetery	Maple Street, White River Junction	
	South End Cemetery	469 South Main Street, White River Junction	
	Mount Olivet Cemetery	1149 Hartford Avenue, White River Junction	
	Russtown Cemetery	North Hartland Road, White River Junction	
	Facility	**Location**	**Description/Notes**
Cemeteries	Christian Street Cemetery	Christian Street, Wilder	
	Center of Town Cemetery	Center of Town	
	Quechee Cemetery	Old Quechee Road, Quechee	
	Simond Cemetery	Old Town Farm Road, Quechee	
	West Hartford Cemetery	Route 14, West Hartford	
	Tucker Cemetery	Route 14, West Hartford	
	Delano Savage Cemetery	Route 14, West Hartford	
Senior Housing	Graystone Apartments	471 Dewitt Drive, White River Junction	
	Village Apartments	151 Gates Street, White River Junction	
	Windsor Hollow Apartments	45 Hollow Drive, Wilder	
	Colodny Apartments	92 South Main Street, White River Junction	
	Valley Terrace Assisted Living	2820 Christian Street, Wilder	
	Brookside Nursing Home	1200 Christian Street, Wilder	
Mobile Home Parks	Chambers Mobile Home Park	Walsh Avenue, White River Junction	
	Merrimac Mobile Home Park	Old River Road, Hartford	
	Olcott Falls Mobile Home Park	Walnut Street, Wilder	
	Tall Timbers Mobile Home Park	Tall Timbers Drive, Quechee	
	Woodside Manor Mobile Home Park	Blake Drive, White River Junction	

Appendix C. Hartford Hazards Rating Worksheet

Hazard	Rating			Scoring				Community Priority	Information Sources
	Geographic Extent	Probability	Impact	Geographic Extent	Probability	Impact	Total		
NATURAL HAZARDS									
Dam Failure	Local	Unlikely	Moderate	2	1	3	6	Medium	VANR, USACE
Drought	Regional	Likely	Minor	1	3	2	6	Medium	NOAA, USDA
Earthquake	Regional	Likely	Negligible	1	3	1	5	Low	USGS, VANR
Extreme Temperature	Regional	Likely	Negligible	1	3	1	5	Low	NOAA, SHELDUS
Flash Flooding	Local	Highly Likely	Moderate	2	4	3	9	High	NOAA, FEMA, VANR
Flooding	Regional	Likely	Major	1	3	4	8	High	FEMA, NOAA, SHELDUS, VANR
Fluvial Erosion	Local	Highly Likely	Moderate	2	4	3	9	High	VANR
Hail	Local	Highly Likely	Negligible	2	4	1	7	Medium	NOAA, SHELDUS
Ice Jam	Local	Highly Likely	Moderate	2	4	3	9	High	NOAA, USACE CRREL
Invasive Species	Regional	Likely	Negligible	1	3	1	5	Low	VANR. VEM
Hurricane/Tropical Storm	Regional	Likely	Major	1	3	4	8	High	NOAA, SHELDUS, FEMA
Landslide/Rockslide	Local	Likely	Minor	2	3	2	7	Medium	VANR, VEM, VTRANS
Lightning	Local	Highly Likely	Negligible	2	4	1	7	Medium	NOAA, SHELDUS
Severe Thunderstorm	Regional	Highly Likely	Minor	1	4	2	7	Medium	NOAA, SHELDUS
Severe Winter Storm	Regional	Highly Likely	Moderate	1	4	3	8	High	NOAA, SHELDUS
Tornado	Local	Unlikely	Minor	2	1	2	5	Low	NOAA, SHELDUS
Brush Fire	Local	Highly Likely	Negligible	2	4	2	7	Medium	Fire Department
TECHNICAL HAZARDS									
Hazardous Materials Storage	Local	Likely	Minor	2	3	2	7	Medium	VANR, VEM
Infectious Disease	Regional	Likely	Moderate	1	3	3	7	Medium	VEM, VDH
Structural Fire	Local	Highly Likely	Minor	2	4	2	8	High	Fire Department
Terrorism	Regional	Unlikely	Moderate	1	1	3	5	Low	VEM
Transportation (Spills)	Local	Likely	Moderate	2	3	3	8	High	VANR, VTrans

Hazard Ratings: Scoring*		
Geographic Extent (Extent of area likely to be affected)		
Regional	1	Regional coordination, planning required
Local	2	Local/community planning, response (rated higher for purposes of local mitigation planning)
Probability:		
Unlikely	1	<1% per year (less than one occurrence in one hundred years)
Occasionally	2	1-10% per year (one to ten occurrences in one hundred years)
Likely	3	10-90% per year (10 to 90 occurrences in one hundred years)
Highly Likely	4	90-100% per year (annual occurrence)
Impact:		
Negligible	1	Isolated occurrences of minor property damage, minor disruption of critical facilities and infrastructure, potential for minor injuries
Minor	2	Isolated occurrences of moderate to severe property damage, brief disruption of critical facilities and infrastructure, potential for injuries
Moderate	3	Severe property damage on a neighborhood scale, temporary shutdown of critical facilities, potential for injuries and/or fatalities
Major	4	Severe property damage on a regional scale, shutdown of critical facilities, potential for multiple injuries and/or fatalities
Community Priority:		
High	Total score 8-9 points	
Medium	Total score 6-7 points	
Low	Total score 4-5 points	

Appendix D: Checklist Summary from Public Meetings re Hazard History and Community Vulnerability

*Please note "**possible**" below means if the hazard is **possible but not all that likely to occur** in town, and "**likely**" means if there is a **likely risk** for this hazard in all or part of town. In the following columns, if you have memories of damage in the town from historic events, please provide notes on that.*

Hartford Hazards Checklist

Natural Hazard	How Likely?	Where, When, Level of Loss
Dam failure	Possible	Wilder dam, Taftsville, Simon Pearce dam, upland beaver dams and private ponds, town can control height of reservoir, and has scheduled decommissioning of dams that were part of reservoir system. Lake Mitchell of MacIntosh Pond could affect W. Hartford if dams failed. Wrights and Simonds still need to be dealt with. Town doesn't require permits for private ponds
Drought/Wildfire	Becoming more likely	Brushfires a concern with drier conditions; last year several acre fire off Rte 5 south, and off Joe Ranger Rd – concern re seasonal homes in woods having bonfires. Appalachian Trail campers
Earthquake	Possible	Major damage not likely
Flood	Not if, but when!	1927, 2011 – Driveway runoff a problem for roads and neighbors (working on new standards). West Hartford bridge acted like a dam. Ice jam potential is scary. Sediment build-up behind dams is a problem.
Hailstorm	Possible	Not bad
Hurricane	Likely	1938
Ice storm	Likely, (esp above 500')	1998 loss of power, icy roads, fog, but not much damage or loss. Affected upper elevations of Jericho. Precipitation tends to change at the RR trestle on RTe 14 – from there north it turns solid.
Landslide/ Land subsidence	Likely	Joe Ranger Rd at Pomfret line and Rte 14 just beyond bank in Hartford;, Jericho Rd, Country Lane. Two houses above Quechee Covered Bridge being bought out, Mill Rd along White River. Waterman Rd. West bank upstream of I-89 bridge is unstable.

Natural Hazard	How Likely?	Where, When, Level of Loss
Severe Winter Storm/extended	Likely	Power Outage. Senior Center will check in with WRJ senior home and pick them up during and extended event. See below.
Windstorm/Tornado	Likely	Micro-bursts, several local events, becoming more frequent, one in Quechee 2007/8, Maple Row Farm lost barn in 2008, flattened trees in Watson Park and behind ski hill. 1995 Town Forest affected.
Invasive species	Likely	New pests (fruit flies, new biting flies after Sandy, loss of species)

Manmade Hazard	How Likely?	Where, When, Level of Loss
Nuclear	Possible	Within range; need information on how to prepare.
Hazardous Materials	Possible	Evacuated section of Quechee Village during Irene because of Dead River – tanks floating down river. All large tanks located in bunkers, diked. Young's propane on Rte 5. Concern re RR cars running through backyards, some concern re separation – need to know where they are. What Public Safety Director to have information re what's there. Also concerns re meth labs, and creosote runoff from discarded RR ties on the riverbank
Major bridge, water system, road or other infrastructure failure	Interstate: not as likely, but big problem if failure State bridges: more likely– Ledyard, Stateline Sports	Major concern re bridges, unusual dependence on them – could cut off access to hospitals. Three bridges over White River of higher likelihood. West Hartford's is too short and too low for channel. Other two were bad too – Rte 5, Bridge St and VA/Hartford; undersized culvert between Club House on Quechee Main Street.
Large transportation incident (Chemical spill)	Trucks more likely than RR	Concern re heavier trucks on Rtes 14 and 5 and through villages, Interstate intersection is confusing, RR a chief concern –.signals and rails improved, NE Central a good operation. Stage tanker cars in WRJ for extended periods.
Large structural fire	Possible	Downtown's been lucky–escaped occurrence for many years now, except for the Wrap Block. A Street Industrial Park is a concern. Hotel Coolidge burned twice.
Infectious Disease Epidemic	Low possibility	

General comments/notes from three meetings:

- *Loss of Power for Extended Periods – Utilities calculate the pole loss/year that they can tolerate and stay in the black. After Irene, now looking at metal, concrete poles, line burials. Concern for those that could be without heat or have medical issues, seniors.*
- *Hartford has unique issues as a transportation hub for rail and interstates, also confluence of two rivers.*
- *VA Hospital mainly a nursing home now – no emergency facilities or operating rooms.*
- *Groundwater contamination: Quechee Main blow-out; also concern that groundwater this is a slowly evolving hazard (check brownfield sites).*

Appendix E: Planning Commission & Selectboard Consolidated Strategies

Draft Strategies for Hartford's 5-Year Hazard Mitigation Plan

(Highlighted items are state or federal requirements;
Green items added by PC or SB since 9/3/13 SB meeting)

A. All Hazards

Tier 1 – Items that will be addressed during the next five years

4. Develop and implement a multi-hazard public awareness program, including providing information on the town's website, annual report and at town libraries regarding emergency preparedness and emergency services, "hazard vulnerability checklists" for local residents and businesses, and information on preparing home emergency kits.

5. Maintain partnerships with the Two Rivers-Ottauquechee Regional Commission, White River Partnership, neighboring towns and state officials to stay up-to-date on hazard data and the most at-risk critical facilities and potential mitigation techniques. In year four of this Plan, revisit the Town's risk assessment based on new data.

6. Integrate hazard mitigation into local decision-making by completing this Plan update, and consider hazard mitigation issues when adopting Town policies and land use regulations.

Tier 2 – Items that will be researched during the next five years

3. Consider establishing a local reserve fund within the Capital Improvements Program for future mitigation projects and matching funds for grants.

4. Research issues surrounding extended interruptions in food supply, power, fuel, and communications networks; who are the public and non-public partners that should be involved; what are within local control; and what are regional conversations.

Tier 3 – Items that are for future consideration, but not in the next five years

1. Fund a dedicated staff position for hazard mitigation and risk assessment at the town or regional level that can provide services to the Town.

B. Flooding and Erosion

Tier 1 – Items that will be addressed during the next five years

13. Update the Hartford Flood Hazard Area Regulations to clarify existing requirements for all development in known flood hazard areas, such as tying down propane tanks in flood hazard areas, and elevation certificates or surveys showing elevations for new construction. Integrate lessons learned from the Irene Flood.

14. Work with propane vendors to tie down tanks in flood hazard areas.

15. Incorporate flood resilience, flood mitigation and floodplain management in local planning, and as a separate element of the town plan (new statutory requirement by July 1, 2014).

16. Develop policies and recommendations to reduce exposure and risk within known flood hazard areas, especially for critical facilities and infrastructure.

17. Identify off-site, low-risk storage locations for copies of critical public records.

18. Develop policies to protect natural resource areas that provide floodplain protection, riparian buffers, and other ecosystem services that mitigate flooding (e.g., riverbanks, wetlands, riparian buffers, farm, forest and other open land).

19. Address erosion (including fluvial erosion) by updating stormwater management, sediment and erosion control regulations, to include regulations for development in areas of steep slope and stream buffers.

20. Identify locations in town where properties have experienced flooding due to overflowing storm sewer systems, culverts, etc., and determine causes.

21. Regularly inspect and maintain town bridges and culverts and schedule to replace undersized culverts as determined by field inspection.

22. Inventory and track repetitive loss properties. Encourage property owners to document damage from flood events, including repair costs, photographs and high water level.

Tier 2 – Items that will be researched during the next five years

8. Research what is required to organize and promote activities to increase local flood risk awareness. This should include:
   - Encourage homeowners to purchase flood insurance.
   - Distribute flood protection safety information to the owners of flood-prone property.
   - Educate citizens about safety during flood conditions, including not driving on flooded roads.
   - Educate property owners regarding options for mitigating their properties from flooding
   - Educate property owners about the benefits of stabilizing stream banks with vegetation
   - Educate the public about securing debris, propane tanks, yard items, or stored objects that may be swept away, damaged, or pose a hazard if washed away by floodwaters.

9. Consider community participation in the National Flood Insurance Program (NFIP) and consider upgrading to membership in the Community Rating System (CRS) to gain lower NFIP rates for property owners.

10. Consider a program to promote the retrofit of historic properties within known flood hazard areas.

11. Consider developing and implementing stormwater and erosion control management plans for public buildings.

12. Collect, map and address accurate fluvial geomorphic data for the river corridors.

13. Consider the establishment of an annual “Clean our culverts” day during a “Hazards Awareness Week”, or fold into Green Up Day, to encourage residents to keep their culverts clear.

14. Consider adopting a “zero discharge policy” for stormwater in subdivision and site design.

C. Hazardous Materials Transportation Accidents (Chemicals)

Tier 1 – Items that will be addressed during the next five years

2. Conduct an emergency response exercise every two years with the Railroad companies, VTrans and fuel dealers.

Tier 2 – Items that will be researched during the next five years

2. Consider development of public information materials on how the Town will respond, what residents should do in such an emergency, and where or how they can get information in an event.

D. Severe Wind

Tier 1 – Items that will be addressed during the next five years

2. Encourage burial of utility lines serving new development.

2. Work with utility companies to identify options to secure above ground utility poles.

3. Develop a public awareness campaign to encourage protecting and securing residential properties from severe wind events.

E. Severe Winter Weather

Tier 1 – Items that will be addressed during the next five years

5. Continue to insulate public buildings and facilities to provide shelter during extreme weather events.

Tier 2 – Items that will be researched during the next five years

1. Consider assisting residents vulnerable to severe winter hazards, including freezing temperatures and power outages by planning for and organizing outreach and assistance, and providing community shelter(s), especially during major power outages.

2. Consider development of public awareness program regarding severe winter storms which includes distributing information about:
   - Common winter hazards, family and traveler emergency preparedness, and winter driving safety tips.
   - The installation of carbon monoxide monitors and alarms, and the safe use of heaters.
   - Services available to vulnerable residents.
   - Advice on use of electric vehicles as generators, if the appropriate switch is in place.

F. Fire Hazards

Tier 1 – Items that will be addressed during the next five years

2. Provide educational materials and outreach to residents regarding benefits of residential fire sprinklers.

Tier 2 – Items that will be researched during the next five years

2. Consider requiring all new development meets industry standards for fire protection including installation of fire sprinklers.

Tier 3 – Items that are for future consideration, but not in the next five years

2. Install and maintain dry hydrants in strategic locations around town.

G. Landslides

Tier 3 – Items that are for future consideration, but not in the next five years

1. Stabilize potential landslides and possible residential buyouts on Jericho Road, Country Lane, and Pomfret Road.

Appendix F: Glossary of Acronyms

CERT:	Community Emergency Response Team
CRS:	Community Rating System
HM:	Hazard Mitigation
HMGP:	Hazard Mitigation Grant Program
HUD:	U.S. Department of Housing and Urban Development
LEPC:	Local Emergency Planning Committee
PDM:	Pre-Disaster Mitigation
SFHA:	Special Flood Hazard Area
TRORC:	Two Rivers-Ottauquechee Regional Commission
VA or VAMC:	Veterans Administration Medical Center
VANR:	Vermont Agency of Natural Resources
VAST:	Vermont Association of Snow Travelers
VT DEC:	Vermont Department of Environmental Conservation
VEM:	Vermont Emergency Management
VHMP:	Vermont Hazard Mitigation Plan
VLCT:	Vermont League of Cities & Towns
VTrans:	Vermont Agency of Transportation
VRC:	Vermont River Conservancy
WRP:	White River Partnership