### Town of Worcester, Vermont

### 2017 Local Hazard Mitigation Plan

Prepared by the Town of Worcester and the Central Vermont Regional Planning Commission

Date of Town Adoption: , 2017

Date of Final Approval by FEMA

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Management and Homeland Security

# Town of Worcester, VT Hazard Mitigation Plan Update February 2017

# Prepared by the Town of Worcester and CVRPC

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#### 1. Introduction

The impact of expected, but unpredictable natural and human-caused events can be reduced through community planning. The goal of this Local Hazard Mitigation Plan is to provide a local mitigation plan that makes the Town of Worcester more disaster resistant.

Hazard mitigation is any sustained action that reduces or eliminates long-term risk to people and property from natural and human-caused hazards and their effects. Based on the results of previous Project Impact efforts, FEMA and State agencies have come to recognize that it is less expensive to prevent disasters than to repeatedly repair damage after a disaster has struck. This Plan recognizes that communities have opportunities to identify mitigation strategies and measures during all of the other phases of emergency management – preparedness, response, and recovery. Hazards cannot be eliminated, but it is possible to determine what the hazards are, where the hazards are most severe, and identify local actions that can be taken to reduce the severity of the hazard.

Hazard mitigation strategies and measures alter the hazard by eliminating or reducing the frequency of occurrence, avert the hazard by redirecting the impact by means of a structure or land treatment, adapt to the hazard by modifying structures or standards, or avoid the hazard by preventing or limiting development.

### 2. Purpose

The purpose of this Local Mitigation Plan is to assist the Town of Worcester in recognizing hazards facing the region and their community and identify strategies to begin reducing risks from acknowledged hazards.

The 2017 Worcester Local Hazard Mitigation Plan is an update of the 2012 plan. The plan underwent review, evaluation, and implementation to reflect changes in development, progress in local mitigation efforts and changes in priorities.

### 3. Community Profile

The Town of Worcester is a small, rural, primarily residential community located in the Northwestern most portion of Washington County. According to the 2010 Census, Worcester has a total population of 891 people living in 413 housing units. The Town's 2008 population was 902, a decrease of about 9% from the 2010 Census. Approximately 17% of Worcester's workforce is employed within the Town, while the remaining 83% work outside of the community.

With over 3,000 feet of topographic relief within its boundaries, Worcester ranks as one of the most rugged communities within Central Vermont. The Worcester Mountain Range dominates the Western third of the town. Vermont Route 12 follows the North Branch River in a North-South direction and provides connection to Montpelier and Morrisville. The Village of Worcester is located along the south eastern section of the town along Vermont Route 12. The Town's limited commercial development is focused primarily within this area, along with its densest residential development. The largest numbers of private residences, however, are widely dispersed throughout the Town's rural lands. This pattern of rural development surrounding a

dense Village is reinforced by the Town Plan. Worcester does not have zoning. As of writing this plan, there are no planned commercial or residential developments for Worcester. In March of 2013 Worcester updated its road standards and follows the Vermont Road and Bridge Standards 2013.

In Worcester, electricity is provided by Green Mountain Power to those residents who are situated along Vermont Route 12. Those in the hills and along other secondary roads are served primarily by the Washington Electric Cooperative. The Worcester community is completely dependent upon groundwater for its domestic water supply and industrial uses, with a storage and distribution system known as Worcester Fire District No. 1 providing service to much of the Village area. Worcester has no public sewage disposal system. The State of Vermont Regional Office issues water/waste water permits for soil based wastewater systems with flows less than 6500 gallons per day, for potable water supplies (water supplies that are not public), and for municipal water and sewer connections.

The Town's fire coverage is provided by the volunteer Worcester Fire Department, which provides support to the inter-municipal Capital Fire Mutual Aid System. During the year of 2015, the Fire Department responded to 18 calls for assistance. Also housed within the Worcester Fire Department is the Worcester Fast Squad, a non-profit corporation which provides medical care under the Vermont Emergency Medical Services system. The Fast Squad works in conjunction with the Montpelier Ambulance Service, which provides emergency transportation within the Town's boundaries. The FAST Squad responded to 21 calls in 2015. In regards to law enforcement, the Vermont State Police provide first response support and the Washington County Sheriff monitors the speed of traffic on Worcester's major thoroughfare.

The Town of Worcester has an approved Local Emergency Operations Plan (LEOP), (formerly known as the Rapid Response Plan), that is updated and adopted annually. The current LEOP was adopted on April 18, 2016 and is due for renewal by May 1, 2017. The town coordinates with the Central Vermont Regional Planning Commission who provides technical support and guidance with the plan update. The town requires the certifying officer to be trained in ICS 402 or ICS 100 at a minimum. It is the policy of the town to have the Chair of the Selectboard serve as the Emergency Management Director (EMD). In conjunction with the LEOP, on May 21, 2012 the town adopted the use of the National Incident Management System (NIMS) as the standard for management and systematic approach involving all threats and hazards, regardless of cause, size, location, or complexity, in order to reduce loss of life, property, and harm to the environment.

The town has a Source Protection Plan for the Worcester Fire District #1 last updated October 2016. In addition to the water supply, there are 8 dry hydrants installed using grant funding from the Rural Resources Water Supply Grant program of the Vermont Association of Conservation Districts. The development of one dry hydrant off the Norton Road is desired to complete the rural water suppression system in the community. Accessing grant funding will be necessary to complete this.

The Doty Memorial School follows the Vermont School Crisis Guide and has an Emergency Evacuation Plan in place. Drills are performed on a regular basis. The current school principal is Matt Young.

The 2007 Town Plan is currently in the process of being updated and revised. The current plan includes a description, discussion, goals, and policies in regards to flooding, groundwater protection, and emergency services. The Town does not have a zoning by-law, but has adopted a Flood Hazard Bylaw (updated in 2010). The town will incorporate the local hazard mitigation plan and flood hazard Bylaw into the Town Plan update. Once the Phase II River Corridor data is released by the State of Vermont, Worcester plans to begin the process of updating the Flood Hazard Bylaw and explore the adoption of a River Corridor Ordinance. The Central Vermont Regional Planning Commission is posed to assist with this effort once the data is released by the state. Worcester participates in the National Flood Insurance Program and enrolled 4/3/1978. There are no repetitive loss properties in Worcester. The current effective map date (FIRM date) is 3/19/2013.

## 4. Planning Process and Maintenance

### 4.1 Planning Process

The Central Vermont Regional Planning Commission (CVRPC) assisted the town with their Worcester Hazard Mitigation Plan update process. In early February of 2016, CVRPC Transportation Planner Steve Gladczuk contacted the Town Select Board Chair, Roger Strobridge, and sent him Town specific mitigation materials for his review. A kick off meeting was held on March 21, 2016 between Transportation Planner Steve Gladczuk and Selectboard Chair Roger Strobridge. After assessing the material, an initial first draft was developed and Mr. Strobridge and CVRPC staff met with members of the Selectboard at a public meeting held on July 18, 2016. Input from the Selectboard members (Roger Strobridge, Ted Lamb, and Cheri Goldstein), Planning Commission Chair Bill Arrand, Road Commissioner Brian Powers, Fire Chief Will Sutton, and Town Clerk Katie Winkeljohn was collected for incorporation into the draft plan update. After the July 18th meeting, notice of the initial draft plan update was made available on the CVRPC blog and copies of the updated draft plan were available at the Worcester Municipal or CVRPC offices for review and comments. NO comments on this initial draft were received. In the summer of 2016, CVRPC GIS Planner Ashley Andrews conducted a Vulnerability Assessment of the roads using computer generated data analysis and then field verified the information, driving all the roads in the community. CVRPC GIS Planner Ashley Andrews consulted with the Worcester Public Works Commissioner Brian Powers and Road Foreman Tim Cane to identify a list of priority roads with under sized culverts and or erosion issues. This information was used in developing the mitigation strategies.

CVRPC experienced significant changes in staffing with the medical leave in late summer 2016 and then passing on January 4, 2017 of Steve Gladczuk, Transportation Planner. CVRPC reached out to the Town

Clerk and arrangements were made to schedule a status meeting with the Selectboard prior to submitting the final draft to DEMHS and FEMA. A status meeting was called and scheduled for a Selectboard meeting on November 21, 2016. Those in attendance were members of the Selectboard (Chair Roger Strobridge, Cheri Goldstein, Ted Lamb), Fire Chief (Mark "Will" Sutton), Town Clerk (Katie Winkeljohn), CVRPC staff (Laura Ranker, EM Planner and Ashely Andrews, GIS Planner) and members of the public. CVRPC was directed to make edits to the plan based on input gathered at this meeting and then present an updated draft of the plan at the February 6, 2017 meeting of the Selectboard. A final draft plan was presented to the Board of Selectmen on February 21, 2017. The Town Clerk then posted the final draft plan at the Worcester Town Offices, on Front Porch Forum, and on the Worcester Town website for public comment. A copy was also sent to Matt Young, Principal of the Doty Memorial School. The Worcester town website is also linked to the CVRPC website increasing the potential for distribution and the draft plan was posted on the CVRCP website. Front Porch Forum and the town website reach over 500 active subscribers. Copies of the plan were also distributed and made available to the town clerks of all the adjoining municipalities, LEPC #5, and the Agency of Natural Resources Certified Flood Plan Manager, Rob Evans. The specific Town Clerks are: Calais- Donna Fitch Calais.townclerk@gmail.com; Elmore-Sharon Draper sdraper@elmorevt.org; East Montpelier-Terri Conti eastmonttct@comcast.net; Middlesex- Sarah Merriman middlesxtwnclrk@comcast.net; Morristown- Mary Ann Wilson mawilson@morristownvt.org; Stowe- Alison Kaiser townclerk@townofstowevermont.org; Waterbury-Carla clawrence@waterburyvt.com; and Woodbury-Peduzzi woodburyclerk@comcast.net. After receiving any public comment, final revisions and edits were made as necessary and incorporated into the final draft for submittal to DEMHS and FEMA on March 7, 2017.

In the future, the plan may also be shared at informal meetings between local, regional and state officials. Comments will be reviewed by the Select Board and CVRPC Planners until the plan is submitted to FEMA for conditional approval. Public comments submitted will be reviewed by the Select Board Chair (and CVRPC Staff dependent on funding) and attached as an appendix. In the future, the draft plan will be made available during Town Meeting Day and local meetings with State and local officials to allow for more public comment and review. Once the plan is conditionally approved by FEMA, the plan will go before the Select Board for adoption.

Prior to formal adoption by the Selectboard, a Public hearing will be warned on a date to be determined, to get public comment on the final plan. Upon FEMA written notice of FEMA Approval Pending Adoption, the Worcester Selectboard will hold a regular warned public Selectboard meeting to approve and adopted the hazard mitigation plan by resolution. Upon adoption, the Selectboard will submit the adopted plan and certification to DEMHS/FEMA for issuance of the final plan approval letter from FEMA. This plan will expire 5 years from the <u>date of final FEMA approval.</u>

Preparation for the plan review meetings included a review of the Worcester Town Plan, Worcester Local Emergency Operations Plan, 2015 Worcester Town Report, Phase 1 Stream

Assessment of the North Branch of the Winooski River, North Branch Corridor Plan, the 2016/2017 Highway Equipment Schedule and the Fire Department Equipment Schedule, the 2008 Worcester Purchasing policy, the 2010 Worcester Flood Hazard Bylaw, and State Forest Management Plan. The Worcester Hazard Mitigation Meetings focused on assessing past mitigation projects and compiling information on its current and future hazard mitigation programs, projects and activities.

Worcester hazard mitigation planning group included the following persons:

- Roger Strobridge, Worcester Select Board Chair
- Cheri Goldstein, Worcester Select Board
- Ted Lamb, Worcester Select Board
- William Arrand, Worcester Planning Commission Chair
- Brian Powers, Worcester Road Commissioner
- Mark "Will" Sutton, Worcester Fire Chief
- Matt Young, Principal Doty Memorial School
- Katie Winkeljohn, Town Clerk
- CVRPC Staff: Steve Gladczuk, Transportation Planner, Laura Ranker, Emergency Management Planner, and Ashley Andrews, GIS Planner.

During the planning process, the town identified its most vulnerable hazards; flash floods, floods and wildfire/forest fire.

# 4.2 Plan Update Process

The Worcester Local Hazard Mitigation Plan was originally adopted by the Town as an Annex to the Central Vermont Regional Local Hazard Mitigation Plan in October 2005 and received FEMA final approval in January 2006. In 2011, Worcester updated its plan as a standalone Local Hazard Mitigation Plan which was adopted by the Selectboard on November 21, 2011 and received FEMA approval on March 12, 2012. This plan is an update to the March 2012 FEMA approved plan.

The entire plan was updated in this update process.

#### **General Updates**

- General reorganization/restructuring of the plan according to future FEMA/VEM checklist
- Update of all data and statistics using the 2015 Town Report and US Census Data
- Reevaluation, identification and analysis of all significant hazards identified from the 2011
   Plan, including flash flooding and forest fires.
- Acknowledgement of implemented mitigation strategies since 2011 see matrix below
- Identification of on-going mitigation projects and strategies see Existing Mitigation Programs, Projects and Activities section
- Identification of new mitigation projects and strategies see Hazard Mitigation Activity matrix in appendix.
- Update of all hazard data and historical records since 2011 to present day.

 Consideration of changes in development in the community and in development regulations.

#### **Hazard Analysis Updates**

- New hazards added Forest Fire & Flash Flooding
- Added location/vulnerability/extent/impact/likelihood table for each hazard to summarize hazard description
- Review of current forest map to identify camps and other areas which are at risk of forest fire
- Review of information on State Forest website and 2010 State Forest Management Plan
- Review of Phase I North Branch Assessment, March 31, 2007 new information included in flood/flash flood sections
- Review of North Branch Corridor Plan, 2009, new information included in flood/flash flood and mitigation activities sections
- References to North Branch Corridor Plan 2009 for future flood/flash flood mitigation projects
- Updated federal declarations in flooding/flash flooding occurrences

#### Maps

- Review of 2011 Plan maps added which combines the Hazard Analysis and Areas of Local Concern Maps in the Hazard Analysis Map. The information is still relevant.
- A Transportation Risk Analysis Map (aka Vulnerability Assessment Map).

No changes were made to the section pertaining to School Safety.

2011 Mitigation Action	2016 Status	
Improving drainage within Town and construct controls to prevent contact with water/floating debris	Major fixes on Calais Rd. and Brown Rd. bridges. Major roadwork done on Frazier Rd., Kimball Rd., Norton Rd. 7 others roads have had hydraulic studies and fixes performed. Ditching Program implemented on Hampshire Hill, Norton Road and Gould Hill.	
Develop a post-flood clean up, decontamination, and recovery procedure/plan	Select Board still interested – not yet performed due to lack of funding	
Remove structures from risk nearest to Minister Brook	Strategy outlined in North Branch Corridor Plan  – has not yet been performed due to lack of funding	
Develop and implement an education program for residents and property owners	Made part of 2010 flood hazard bylaws	

of flood risk and mitigation activities/programs	
"Harden" utility services within the town through the replacement/burying of above-grade utility services and strengthening utility poles/conductor fixtures	Ongoing upgrades of utility poles by both Green Mountain Power and Washington Electric Cooperative; Select Board is still interested in project, but has not happened due to lack of funds
Conduct a tree removal/tree trimming program	Taken care of by road crew, but not formally organized. Brush cutting also performed in right-of-ways. Road foreman is still interested in program.
Conduct an engineering study on the Town's wind vulnerability	Will no longer be considered due to lack of interested parties.

#### **Existing Mitigation Programs, Projects and Activities**

The ongoing or recently completed programs, projects and activities are listed by mitigation strategy and were reviewed during the update process.

#### **Community Preparedness Activities**

- Current Local Emergency Operations Plan adopted 4/18/16
- Worcester Fire District #1 Source Protection Plan 10/2016
- Doty Memorial School Emergency Evacuation Plan

#### Hazard Control & Protective Works

- Maintenance Programs (Culvert Survey & Replacement), last completed 2015
- Participant in the Capital Mutual Aid System, ongoing
- Capital Equipment Plan and Replacement Schedule, annually

#### **Insurance Programs**

- Participation in NFIP, enrolled since 4/3/1978, ongoing
- Vermont League of Cities and Towns Liability and Insurance Program, ongoing

#### Land use Planning/Management

- Flood Hazard Bylaw 2010
- Municipal Plan, 2007, currently under review and update process

#### Protection/Retrofit of Infrastructure and Critical Facilities

- Dry Hydrant Program, ongoing dependent upon funding grants (8 completed, 1 more to add)
- Worcester Purchasing Policy adopted 2008 (follows VLCT model)

#### Public Awareness, Training & Education

- Fire safety educational programs for town residents
- CPR & Hazmat Trainings
- School Fire Awareness Week

- FAST Squad
- Town Complex backup generator

#### 4.3 Plan Maintenance

The Worcester Local Hazard Mitigation Plan will be updated and evaluated annually within three months of the Organizational Meeting of the Selectboard. The organizational meeting is typically held on the first Selectboard meeting after Town Meeting Day. Updates and evaluation by the Select Board will also occur within three months after every federal disaster declaration and as updates to town plan/zoning and river corridor plans come into effect. CVRPC will help with updates, or if no funding is available, the Chair of the Select Board will update the plan as needed during the 5 year interim period.

The process of evaluating and updating the plan will include continued public participation through public notices posted on the municipal website, Front Porch Forum, town newsletter and CVRPC newsletter inviting the public to the scheduled Select Board (or specially scheduled) meeting(s). These efforts will be coordinated by the Chair of the Select Board and Town Clerk.

Updates may include changes in community mitigation strategies; new town bylaws and updates to existing bylaws, land use and planning strategies; progress of implementation of initiatives and projects; effectiveness of implemented projects or initiatives; and evaluation of challenges and opportunities. If new actions are identified in the 5 year interim period, the plan can be amended without formal re-adoption during regularly scheduled Select Board meetings.

Worcester shall also consider incorporation of mitigation planning into their long term land use and development planning documents. It is recommended the Town review and incorporate elements of the Local Hazard Mitigation Plan when updating the municipal plan and flood hazard/FEH bylaws. The incorporation of the Local Hazard Mitigation Plan into the municipal plan and flood hazard/FEH bylaws will also be considered after declared or local disasters. The Town shall also consider reviewing future North Branch Corridor planning documents for ideas on future mitigation projects and hazard areas pertaining to the Town of Worcester.

#### 5. Risk Assessment

## 5.1 Hazard Identification and Analysis

The following natural disasters were discussed and the worst threat hazards were identified based upon the likelihood of the event and the community's vulnerability to the event. Hazards not identified as a "worst threat" may still occur. Greater explanations and mitigation strategies of non "worst threat" hazards can be found in the State of Vermont's Hazard Mitigation Plan.

#### Hazard Identification Table.

Hazard	Likelihood 1	Community Vulnerability <sup>2</sup>	Worst Threat
Avalanche/ Landslide	Low	No	X
Dam Failures	Low	No	X
Drought	Low	No	Χ
Earthquake	Low	No	X
Extreme Cold/Winter Storm/Ice Storm	Med	No	X
Flash Flood	Med	Yes	<b>✓</b>
Flood/Fluvial Erosion	Med	Yes	<b>✓</b>
High Wind	Low	No	X
Ice Jam	Low	No	X
Hurricane	Low	No	X
Structure Fire	Med	No	X
Tornado	Low	No	X
Water Supply Contamination	Low	No	Х
Wildfire/Forest Fire	Med	Yes	✓
Other – School Safety	Low	Yes	✓

The Town of Worcester identified the following disasters as presenting the worst threat to the community:

- Flooding
- Flash Flooding
- Wildfire/Forest Fire
- School Safety Issues

The Town is interested in focusing a majority of mitigation efforts into reducing impacts from floods and flash floods, as the events occur most frequently, severely and cause the most damage to public and private infrastructure.

<sup>&</sup>lt;sup>1</sup> High likelihood of happening: Near 100% probability in the next year.

Medium likelihood of happening: 10% to 100% probability in the next year or at least once in the next 10 years.

Low likelihood of happening: 1% to 10% probability in the next year or at least once in the next 100 years.

<sup>&</sup>lt;sup>2</sup> Does the hazard present the threat of disaster (Yes)? Or is it just a routine emergency (No)?

Non worst threat hazards include:

- Extreme Cold/Winter Storm/Ice Storm
- Structure Fire

Other Hazards with Low Likelihood, and No Community Vulnerability considered are:

- Terrorism
- Nuclear Power Plant
- Infectious Disease
- Severe Thunder Storms
- Hail
- Drought
- Rockcuts
- Invasive Species
- Extreme Temperatures
- Expansive Soils
- Lightning
- Sea Level Rise
- Storm Surge
- Subsidence
- Tsunami

A discussion of each significant hazard is included in the proceeding subsections and a map identifying the location of each hazard is attached (See map titled Hazard Analysis.) Each subsection includes a list of past occurrences based upon County-wide FEMA Disaster Declarations (DR-#) if available, plus information from local records, a narrative description of the hazard and a hazard matrix containing the following overview information:

Hazard	Location	Vulnerability	Extent	Impact	Likelihood
Type of	General	Types of	Minimal: Limited and scattered	Dollar value	High: 10% to 100%
hazard	areas within	structures	property damage; no damage to	or	probability within the
	municipality	impacted	public infrastructure contained	percentage	next year or at least
	which are		geographic area (i.e., 1 or 2	of	once in the next 10
	vulnerable		communities); essential services	damages.	years.
	to the		(utilities, hospitals, schools, etc.)		Medium: less than 10%
	identified		not interrupted; no injuries or		to 100% probability
	hazard.		fatalities.		within the within the
			Moderate: Scattered major		next year or less than
			property damage (more than 50%		once in the next 10
			destroyed); some minor		years.
			infrastructure damage; wider		
			geographic area (several		
			communities) essential services		
			are briefly interrupted; some		
			injuries and/or fatalities.		
			Severe: Consistent major		
			property damage; major damage		
			to public infrastructure (up to		

	several days for repairs); essential services are interrupted from	
	several hours to several days;	
	many injuries and fatalities.	

#### 5.2 Worst Threat Hazards

### A. FLOODING/FLUVIAL EROSION & FLASH FLOODING

History of Occurrences (within Central Vermont, town specific data not available):

Date	Event	Location	Extent
2/25/2016	Flood/Ice Jam	Middlesex	2-2.5" of rain, 1-3" of ice pack melted, resulted in 2-4' of water on US 2
6/11/2014	Flooding	Washington County	Montpelier flood gauge at N.A.
8/2/2013	Flooding	Washington County	Montpelier flood gauge at 4.23
11/8/2011	Flooding	Washington County	Montpelier flood gauge at 4.05  DR 4043
8/28/2011	Flood/Tropical Storm	Statewide	Winooski Flood gauge knocked out – above 423.3 feet (flood stage is 419 feet) – DR 4022
5/27/2011	Flood	Washington County	Winooski flood gauge at 423.3 feet DR 4001
4/11/2011	Flood	Washington County	2-4" of rain and heavy snowmelt, Winooski flood gauge at 421.0 feet DR 1995
8/2/2008	Flash Flood	Washington County	3-5" of rain, not a historical crest in Montpelier
7/11/2007	Flash Flood	Washington County	3-6" of rain in 2 hrs – DR 1715, not a historical crest in Montpelier
6/26/2006	Flood	Washington County	3-4" of rain, not a historical crest in Montpelier
9/16/1999	Tropical Storm Floyd	County Wide	Montpelier flood gauge at 9.30 feet, 5-7" rain county wide DR 1307

6/17/1998	Flash Flood	County Wide	3-6" of rain over 2 day period - DR 1228, not a historical crest in Montpelier
8/5/1976	Flood	County Wide	Montpelier flood gauge at 12.31 feet – DR 518
6/30/1973	Flood	County Wide	Montpelier gauge at 17.55 ft DR 397
9/22/1938	Flood/Hurricane	County Wide	Montpelier flood gauge at 14.11 feet
11/03/1927	Flood	County Wide	Montpelier flood gauge at 27.10 feet

The most prominent body of water within Worcester is the North Branch of the Winooski River, which originates in Elmore and flows in a southerly direction along Vermont Route 12, finally converging with the Winooski in the City of Montpelier. Several streams originating in Worcester's upland areas converge with the North Branch in the Worcester Valley. Flowing east from the Worcester Range are Minister, Hancock and Catamount Brooks. From the eastern hills flow the Hardwood, Worcester and Russ Pond Brooks.

Two studies have been conducted on the North Branch of the Winooski River and associated tributaries (Minister Brook, Worcester Brook, Hancock Brook, Catamount Brook and Harwood Brook) located in Worcester. The first study is a Phase I Stream Geomorphic Assessment done in 2009. The second 2009 study is the North Branch Corridor Plan which evaluates the condition of the North Branch and larger tributaries and identifies and prioritizes 92 projects to remediate the river. Of these 92 projects, more than half are recommended along the stretches in Worcester. The Corridor Report identifies numerous stretches of the river that are in fair and poor condition due to road or field encroachment on floodplains or banks, highly incised reaches, and increased loads and flows due to surrounding land use activities. Table 33 of the North Branch Corridor Report summarizes all potential projects and their benefits. It would be advisable for the Town of Worcester to begin performing some of the high priority projects in Worcester's stretch of the river corridor to restore the river's health and prevent future flooding events and reduce fluvial erosion. However, implementation is dependent upon identifying viable funding sources and grant awards. In addition, many identified projects involve private property and will require the cooperation and commitment of the private landowner. A matrix of prioritized projects and related maps are attached as an appendix for the Town to reference and to help guide, direct and prioritize future mitigation projects.

The roads and fields most impacted by these waters are the Minister Brook Road, Jim Dawson's field, Downs Road, and "the ledges" and field along Route 12 near the southern loop of the North Branch (see Areas of Local Concern map.) Additional maps of impacted areas and potential future restoration projects can be found in the North Branch Corridor Study.