Adopted by the City of Newport on
----------2022

City of Newport, Vermont
Local All-Hazards Mitigation Plan Update

City of Newport, Vermont
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Public Assistance Applicant #:
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Prepared by:

City of Newport, Vermont

CERTIFICATE OF LOCAL ADOPTION

City of Newport, Vermont

A Resolution Adopting the Local All-Hazards Mitigation Plan Update

WHEREAS, the City of Newport has worked with its residents and stakeholders to identify hazards, analyze past and potential future losses due to natural and human-caused disasters, and identify strategies for mitigating future losses; and

WHEREAS, the City of Newport Local All-Hazards Mitigation Plan Update contains recommendations, potential actions and future projects to mitigate damage from disasters in the City of Newport; and

WHEREAS, a meeting was held by the City of Newport Selectboard to formally approve and adopt the City of Newport Local All Hazards Mitigation Plan Update. The respective officials identified in the mitigation action plan of the Plan are hereby directed to pursue implementation of the recommended actions assigned to them.

NOW, THEREFORE BE IT RESOLVED that the City of Newport adopts this Local All-Hazards Mitigation Plan Update for the city.

_____ _____

Date Mayor

_____

City Councilman President

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City Councilman

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City Councilman

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City Councilman

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Attested to by City Clerk

Executive Summary

In June 2022, the City of Newport began to develop this All-Hazard Mitigation Plan update from the last approved plan in 2016. This update reflects recent changes in the Vermont State Hazard Mitigation Plan and works to identify the updated profiled hazards and associated mitigation actions for the next planning cycle. The results of this work are contained herein and represent the collaborative efforts of the City of Newport Hazard Mitigation Planning Team, residents, community organizations, neighboring towns and state agencies that contributed to the development of this plan. As hazard mitigation is a sustained effort to permanently reduce or eliminate long-term risks to people and property from the effects of reasonably predictable hazards, the town has communicated its efforts related to developing this plan to its residents and surrounding municipalities, providing a formal opportunity to provide input and review relevant sections of the plan. Along these lines, the town has documented the planning process so that future updates can follow an efficient pattern in addition to capturing this important component as means of establishing institutional memory. In realization that eligibility to receive federal hazard mitigation grants and optimize state-level reimburse or "match" dollars during a federally declared disaster is dependent on a federally approved plan, the city remains committed to sustaining its mitigation efforts and by developing this plan, will have a guide for action that will foster enhanced emphasis on mitigation in the years to come. The city realizes the importance of mitigation inherent to its own resilience as well as a means to establishing strong partnerships with regional support agencies and associations, state government and FEMA. As the city moves towards formally adopting this Local All-Hazards Mitigation Plan update, the purpose of this plan is to:

- Identify specific hazards that impact the City of Newport
- Prioritize hazards for mitigation planning
- Recommend City-level goals and strategies to reduce losses from those hazards
- Establish a coordinated process to implement goals and their associated strategies by taking advantage of available resources and creating achievable action steps

This plan is organized into 5 Sections:

Section 1: Introduction and Purpose explains the purpose, benefits, implications and goals of this plan. This section also describes demographics and characteristics specific to Newport and describes the planning process used in developing this plan.

Section 2: Hazard Identification expands on the hazard identified in the amended Newport City Plan (2020) with specific municipal-level details on selected hazards.

Section 3: Risk Assessment discusses identified hazard areas in the City and reviews previous Federally-declared disasters as a means to identify what risks are likely in the future. This section presents a hazard risk assessment for the municipality, identifying the most significant and most likely hazards which merit mitigation activity. The most significant identified hazards for Newport City are broken with a numerical risk ranking.

Section 4: Vulnerability Assessment discusses buildings, critical facilities and infrastructure in designated hazard areas and estimates potential losses.

Section 5: Mitigation Strategies begins with an overview of goals and policies in the most recent Newport City Plan that support hazard mitigation and utilizes the City's 2015 Capital Improvement Plan to formulate a work plan around major infrastructure projects for the next five years. An analysis of existing municipal actions that support hazard mitigation, such as planning, emergency services and public works are also included. The following all-hazards mitigation goals are summarized below:

- Recognize the characteristics that make the City of Newport unique within Orleans County and incorporate these findings into the hazard mitigation planning
- Reduce at a minimum, and prevent to the maximum extent possible, the loss of life and injury resulting from all hazards.
- Mitigate financial losses and environmental degradation incurred by municipal, educational, residential, commercial, industrial and agricultural establishments due to various hazards.
- Maintain and increase awareness amongst the City's residents and businesses of the damages caused by previous and potential future hazard events as identified specifically in this Local All-Hazards Mitigation Plan.
- Recognize the linkages between the relative frequency and severity of disaster events and the design, development, use and maintenance of infrastructure such as roads, utilities and storm water management and the planning and development of various land uses.
- Maintain existing municipal plans, programs and ordinances that directly or indirectly support hazard mitigation.
- Develop a mechanism for formal incorporation of this Local All-Hazards Mitigation Plan into the municipal comprehensive plan as described in 24 VSA, Section 4403(5). This mechanism will be developed by the Planning Commission, City Council and NVDA and integrate the strategies into the existing City Plan as annexes until the next formal update occurs, where a section devoted to mitigation planning will be integrated into the plan.
- Develop a mechanism for formal incorporation of this Local All-Hazards Mitigation Plan particularly the recommended mitigation actions, into the municipal/town operating and capital plans & programs as they relate to public facilities and infrastructure. With the development of the road erosion site inventory, the town will begin a process that incorporates the budgetary requirements of the defined mitigation strategies into its formal budgeting paradigm. The Planning Commission will review the LHMP and use language/actions from it to inform the integration and update process. Town Meeting Day will serve as the formal time that mitigation strategy budgetary considerations will be approved and incorporated into the City budget.

Section 5 identifies and provides a detailed discussion of the following Mitigation Actions Categories:

Action #1: Reduce vulnerability to flooding by evaluating capabilities of existing road and storm water management infrastructure, public education and through municipal services and regulations

Action #2: Improve resilience to severe winter storms

Action #3: Reduce impact of extreme hot (including drought) and cold temperature durations

Action #4: Raise public awareness of hazards and hazard mitigation actions

Action #5: Reduce risk and impact of pandemic

In conclusion, Section 5 provides an Implementation Matrix to aid the municipality in implementing the outlined mitigation actions with an annual evaluation process to be coordinated and administered by the Planning Commission.

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SECTION 1: INTRODUCTION AND PURPOSE

1.1 Purpose and Scope of this Plan

The purpose of this Local All-Hazards Mitigation Plan is to assist this municipality in identifying all hazards facing the community and in identifying strategies to begin to reduce the impacts of those hazards. The plan also seeks to better integrate and consolidate efforts of this municipality with those outlined in the City Plan as well as efforts of NVDA, Vermont State Agencies, Academic Institutions, FEMA and other Federal Agencies. This document constitutes an All-Hazards Mitigation Plan for the City of Newport, Vermont. Community planning can aid significantly in reducing the impact of expected, but unpredictable natural and human-caused events and the goal of this plan is to provide hazard mitigation strategies to aid the city in creating disaster resilience for itself and by doing so, for communities throughout Orleans County and Vermont as a whole.

1.2 Hazard Mitigation

The 2018 Vermont State All-Hazards Mitigation Plan (SHMP) states:

> *"The impact of anticipated yet unpredictable natural events can be reduced through community planning and implementation of cost effective, preventive mitigation efforts.*
>
> *The State of Vermont understands that it is not only less costly to reduce vulnerability to disasters than to repeatedly repair damage, but that we can also take proactive steps to protect our economy, environment and most vulnerable citizens from inevitable natural hazard events. This Plan recognizes that communities have the opportunity to identify mitigation strategies during all phases of emergency management (preparedness, mitigation, response, and recovery) to more comprehensively address their vulnerability. Though hazards themselves cannot be eliminated, Vermonters can reduce our vulnerability to hazards by improving our understanding of both the natural hazards we face and their potential impacts.*
>
> *The 2018 Vermont State Hazard Mitigation Plan (SHMP) presents the hazard impacts most likely to affect Vermont and a mitigation strategy to reduce or eliminate our most significant vulnerabilities."*

Hazard mitigation strategies and measures can reduce or eliminate the frequency of a specific hazard, lessen the impact of a disasters, modify standards and structures to become more resilient to a hazard, or limit development in identified hazardous areas. This plan aligns and/or benefits from the 5 goals accomplished as a State since 2010 and as referenced in Section 5 of the State's 2013 Hazard Mitigation Plan and as part of the newly created Emergency Relief Assistance Funding (ERAF) requirements. With enhanced emphasis on community resiliency, many state agencies and local organizations have an increased awareness of the importance of mitigation planning and have produced plans and resources that City s can use to support their planning efforts. This plan will reference, when relevant, pertinent tools and resources that can be used to enhance mitigation strategies.

1.3 Hazard Mitigation Planning Required by the Disaster Mitigation Act of 2000

Hazard mitigation planning is the process that analyzes a community's risk from natural hazards, coordinates available resources, and implements actions to reduce risks. According to 44 CFR Part 201, Hazard Mitigation Planning, this planning process establishes criteria for State and

local hazard mitigation planning authorized by Section 322 of the Stafford Act as amended by Section 104 of the *Disaster Mitigation Act of 2000*. Effective November 1, 2003, local governments now must have an approved local mitigation plan prior to the approval of a local mitigation project funded through federal Pre-Disaster Mitigation funds. Furthermore, the State of Vermont is required to adopt a State Pre-Disaster Mitigation Plan in order for Pre-Disaster Mitigation funds or grants to be released for either a state or local mitigation project after November 1, 2004.

There are several implications if the plan is not adopted:

- After November 1, 2004, Flood Mitigation Assistance Grant Program (FMAGP) funds will be available only to communities that have adopted a local Plan
- For disasters declared after November 1, 2004, a community without a plan is not eligible for HMGP project grants but may apply for planning grants under the 7% of HMGP available for planning
- For the Pre-Disaster Mitigation (PDM) program, a community may apply for PDM funding but must have an approved plan in order to receive a PDM project grant
- For disasters declared after October 14th, 2014, a community without a plan will be required to meet a greater state match when public assistance is awarded under the ERAF requirements (Emergency Relief Assistance Funding)

1.4 Benefits

Adoption and maintenance of this Hazard Mitigation Plan will:

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

1.5 All-Hazards Mitigation Plan Goals

This All-Hazards Mitigation Plan establishes the following general goals for the City as a whole and its residents:

- Recognize the characteristics that make the City of Newport unique within Orleans County and incorporate these findings into the hazard mitigation planning process
- Reduce at a minimum, and prevent to the maximum extent possible, the loss of life and injury resulting from all hazards.
- Mitigate financial losses and environmental degradation incurred by municipal, educational, residential, commercial, industrial, and agricultural establishments due to various hazards.

- Maintain and increase awareness amongst the City's residents and businesses of the damages caused by previous and potential future hazard events as identified specifically in this Local All-Hazards Mitigation Plan.
- Recognize the linkages between the relative frequency and severity of disaster events and the design, development, use and maintenance of infrastructure such as roads, utilities and storm water management and the planning and development of various land uses.
- Maintain existing municipal plans, programs and ordinances that directly or indirectly support hazard mitigation.
- Develop a mechanism for formal incorporation of this Local All-Hazards Mitigation Plan into the municipal comprehensive plan as described in 24 VSA, Section 4403(5). This mechanism will be developed by the Planning Commission, City Council, and NVDA and will integrate the strategies into the existing City Plan as annexes until the next formal update occurs, when a section devoted to mitigation planning will be integrated into the plan.
    - Five-Year Capital Investment Plan will incorporate relevant information from the Hazard Mitigation Plan to inform decisions when appropriate for the efficient and financially feasible actions deemed necessary for protecting municipal infrastructure and equipment from profiled natural hazards.
    - Flood-related data and information originating in the Hazard Mitigation Plan will continue to be reviewed and assessed for relevant inclusion in the City Plan Updates specific to flood resilience.

- Develop a mechanism for formal incorporation of this Local All-Hazards Mitigation Plan particularly the recommended mitigation actions, into the municipal operating and capital plans & programs as they relate to public facilities and infrastructure. With the development of the road erosion site inventory, each town will begin a process that incorporates the budgetary requirements of the defined mitigation strategies into its formal budgeting paradigm. The Planning Commission will review the LHMP to inform the integration and update process. Town Meeting Day will serve as the formal time that mitigation strategy budgetary considerations will be approved and incorporated into the City budget.

1.6 City of Newport

Population, History and Characteristics

The City of Newport is in Orleans County and was chartered October 30, 1802, and incorporated March 6, 1917. With 4,981 Acres (7.6 square miles), the city has the smallest land area in the county while having the largest population at 4,455 with a population density of 830 persons per square mile. This unique characteristic brings both advantages and disadvantages specific to mitigation and community resilience. Newport City provides a leadership role in the region as the center for social services and economic, educational, and cultural activities. Accordingly, it is the Orleans County Seat and was incorporated in 1918 which removed its status as a village in

the City of Newport. Newport City has a hospital, fire department, municipal water and sewer, its own police department and ambulance service. There is also a state prison and methadone clinic, an office of local health and several social service agencies. Unfortunately, Orleans County is the unhealthiest county in the state (2022 County Health Rankings). As the COVID-19 pandemic impacted all of the state, the City had its unique challenges mitigating the many health and financial risks resulting from the peak surges of the event between 2020 and 2022. Fortunately, the disaster history for the region has not produced major damage to City infrastructure or private property in comparison to other towns within the county and the state as a whole. The city displayed exceptional resilience to both flood disasters in 2011, which serve as benchmarks for assessing risk and vulnerability to flooding. As the seat of Orleans County, Newport City has a sphere of influence that goes far beyond the municipalities that border it and stretches across the international boundary located just a short distance up Lake Memphremagog. Specifically, the adjacent towns of Newport, Coventry, and Derby, comprise the inner ring of the greater Newport region. The town of Brighton (Island Pond), the largest municipality in Essex County located right over the county line next to Charleston and Morgan, and Orleans County's other towns, from southernmost Greensboro to sparsely populated Holland, are pulled toward the hub of the county. The city is also connected to several area towns through a variety of legal, cultural, governmental and intermunicipal means, especially emergency services. North Country Hospital, which opened in 1974, serves Orleans County and the northern Essex County. Dating to 1920 when Orleans County Hospital was opened in the city's west side, Newport has had a strong commitment to quality medical care *(Source: 2015 Newport City Municipal Plan).*

Newport City has an elevation of 722' and shares a border with the towns of Derby, Coventry and Newport Center to the east, south and west. Newport City is positioned at the southern end of Lake Memphremagog, a 30-mile-long lake that is shared with Canada to the north. Nearly 21% (1.6 sq. mi.) of the City's area is water. The major tributaries draining into Lake Memphremagog are the Clyde River and the Barton River. Access to Newport City is by Vermont Routes 105, 5, and Interstate 91 in Derby where there is the largest international border crossing in New England. The Montreal, Maine and Atlantic/Washington County Railroad traverses through Newport City on its route between Montreal and White River Junction, VT.

1.6.1. Population

In the late 1990s, there was a projected population decrease; however, the city saw a small increase from 4,760 in 1996 to 5,100 in 2008. The population has decreased since then to 4,589 in 2010 and 4,455 in 2020. Orleans County has seen an increase from 26,277 in 2000 to 27,200 in 2008. The population of Orleans County in 2010 was 27,231 and the 2020 population was 26,843.

Table 1-1 City of Newport, selected population characteristics, 2020 Census

Category	Number	%
Total Population	4455	100
Median Age	40	--
Population age 65 years and over	886	19.3
Population under 18 years old	1019	22.2
Population between 18 and 24	367	8.3

Population between 25 and 44	1244	27.1
Population between 45 and 64	1060	23.1

1.6.2. Housing

Sixty-five percent of Newport homes were constructed pre-1940. They are characteristically wood frame with maintenance and repairs typical of older housing. Much of the older housing has been converted into multi-family apartments. New housing construction is increasingly located in the outskirts on land once valued for its agricultural value. Future housing is trending towards higher density multi-family developments. This is resulting in the renovation and outright placement of much of the city's older downtown housing. Accessory apartments attached to single-family residences for senior family members are supported (*2015 Newport City Municipal Plan)*.

Newport City continues to be the place where Orleans County workers live and work. There is some minor job growth for Orleans County, but this is offset by the highest unemployment rate in the state. Salaries within Orleans County continue to be below the state average with Coventry having the county's highest annual wage followed closely by Newport City. The more important trend is that Newport City continues to be the primary place where the county's labor force lives and works (2015 Newport City Municipal Plan).

1.7 Summary of Planning Process

The work to update this 2016 single-jurisdictional plan was led by the planning team made up of municipal officials, school officials, local businesses, service agencies, and the regional planning organization (NVDA). The update project followed a work plan which provided the public and other stakeholders the opportunity for two-way communication. Existing documents were also researched and incorporated into the plan update. Planning team members, for the most part, fulfill multiple roles in the community and represent a broad array of stakeholders. The following table presents the Planning Team members and their title:

Name	Title and Organization
Alison Low	Senior Planner, NVDA
Bruce Melendy	Emergency Planner, NVDA
Christopher Young	Principal, North Country Union Highschool
David Cunningham	Facilities Director, North County Hospital
Fred Saar	Community Member
Jeff Johanson	Executive Director, Newport Ambulance
John Harlamert	Fire Chief, City of Newport

Name	Title and Organization
Laura Dolgin	City Manager, City of Newport
Michelle Faust	Executive Director, NEKLS
Mike Schick	Agent, Border Patrol
Patrick Shattuck	Executive Director, Rural Edge
Rebecca Therrien	Programs Manager, City of Newport
Thomas Bernier	Director, City of Newport
Travis Bingham	Police Chief, City of Newport

There is a current understanding of the need to integrate the content of this update and its goals, actions and reporting into the daily operational structure and awareness of all city officials so that mitigation planning establishes itself as a consistent topic of concern and discussion. The community survey was made available on the city website. Seven responses were received and focused on extreme heat, emergency notification, vulnerable populations, coordination/awareness, and pandemic issues. All neighboring towns were sent notification via email of the plan's development and the subsequent draft and were given an opportunity to provide input through email and/or phone call to the lead consultant hired to update the plan. These include Newport Town, Charleston, Derby, Brownington, and Coventry. No responses were obtained from this solicitation. Following FEMA guidance in Local Mitigation Plan Review Tool Regulation Checklist, the plan was written using data sources that included:

- 2015 Newport City Plan, amended in 2020 (provided current goals and regulations supporting mitigation, recent capital expenditures and infrastructure value helped to drive vulnerability assessment)
- 2020 Newport City Zoning Bylaws (provided basis of current development protocol supporting hazard mitigation)
- 2022 Newport City Capital Improvement Plan (provided specific mitigation actions planned for the next 5 years related to infrastructure as well as provided the platform from which future actions will be formally kept regarding actions of the Public Work Department related to mitigation.
- 2018 Vermont State Hazard Mitigation Plan (provided key guidance language and definitions throughout the plan).
- Vermont Agency of Natural Resources (ANR) and Transportation (VTrans) (Provided key policy recommendations on environmental conservation, high accident locations, climate change and fluvial erosion data).
- Vermont Departments of Health (VDH) and Environmental Conservation (DEC) (provided information related with public health services that could be impacted during a disaster and state support functions designated to both VDH and DEC. DEC also provided river corridor data for mapping purposes. VDH also provided significant data on the health risks and assessment criteria for extreme heat.

- Great Bay Hydro Erosion Monitoring Report (provided current disaster planning policy initiatives and scoping information on dam breech scenarios).
- FEMA Open Source (data.gov) Data for Disaster History and PA funding (provided comprehensive declared disaster by year and type as well as project descriptions and cost per event).
- FEMA P-956: Living with Dams (provides clear guidance on planning and considerations for municipalities with dams).
- FEMA NFIP "Bureau.Net" database (provided detailed information on repetitive loss properties and associated flood insurance claims).
- EPA's Incident Action Checklist for cold weather resilience of municipal water systems (provides a guidance tool for public works to cross-reference actions on the system).

Based on the information obtained, input from city and state officials, the planning team, state and federal databases, local associations and NVDA, the plan was created. While many small communities in Vermont face similar circumstances (e.g. flooding, winter storms and remote residents), each one has unique considerations and opportunities. There was a point made to capture the subtle characteristics of the city, which are many. From this, the specific risks, vulnerabilities and mitigation strategies were developed and applicable, broken down to the specific entity impacted. NVDA's role in assisting the entire region with all facets of planning provided crucial information for this update with an emphasis on extreme heat and drought, a growing concern for the region. The following summary represents the timeline for the planning process:

- 7/5/2022: Planning Team named and introduced to update process. "Kick-off" meeting at warned community (selectboard) meeting with proposal and acceptance of updated hazards. Community survey logistics decided upon. The public was notified and in attendance at this meeting, however, no comments were received.
- 8/10/2022: Meeting with Public Works Director to discuss mitigation projects and progress on 2016 mitigation action items related to infrastructure
- 8/10/2022: Coordination with Extreme Heat working group on draft language for update
- 8/29/2022: Planning team was sent draft sections I and II of update. Comments received focused on extreme heat section and updated information available from VDH.
- 9/2/2022: Community survey launched via survey monkey on city website.
- 9/7/2022: Planning team was sent draft sections I and II of update. Comments received focused on extreme heat section and updated information available from VDH.
- 9/27/2022: Individual meetings with Newport City Fire and Ambulance along with correspondence with Assistant Principal to collect updated information and needs for next planning cycle.
- 10/10/2022: Draft data and narrative received from Newport City Extreme Heat working group
- 10/20/2022: Meetings with Zoning Administrator and Public Works Director to obtain information on progress since last approved plan and level of new development.

- 10/24/2022: Draft Sections III, IV and V sent to planning team for review and comment. Comments collected, assesed and integrated into final draft. Corrections suggested related to dates included in the draft.
- 10/25/2022 All neighboring towns received notice of availability of draft plan for review and comment via the city clerk. No comments were received.

- 11/15/2022: Proposed mitigation goals and actions were discussed at warned community meeting. The public was notified and in attendance at this meeting, however, no comments were received.
- 11/16/2022: Draft plan submitted to VEM for review and approval.
- 12/9/2022 & 12/22/2022: VEM review and request for edits obtained
- 12/27/2022: Plan revisions made and resubmitted to VEM
- 1/5/2023: Final approval pending adoption received
- 1/23/2023: City Council adoption

The draft plan was then revised based on input from planning team. The revised draft was made available for review at the city office and residents were informed via meeting minutes and the city website of the ability to review the draft and additional opportunity for formal comment and suggestions. No additional public comment was received. Minor edits were made to the plan following State recommendations and the final draft was resubmitted to VEM for formal review and approval pending municipal adoption. A resolution of adoption will occur following VEM review and "approval pending adoption" status.

SECTION 2: HAZARD IDENTIFICATION

For this update, the planning team considered the continued inclusion or deletion of the 2016 hazards profiled by developing and researching the natural hazard categories outlined in the state mitigation plan and for each, considered prior history, current trends and available data to estimate risk. Some profiled hazards remain a risk for the city. However, other hazards, due to lack of occurrence frequency, risk and/or vulnerability have been removed in this update. The definitions of each hazard, along with historical occurrence and impact, are described below.

Types of Natural Hazards: weather /climate hazards (drought, hurricane/tornado, high winds, severe winter storm, extreme temperatures, climate change, lightning, hail), flooding, geological hazards (landslide / erosion, earthquake, naturally occurring radiation), and fire hazards.

2022 Updated Profiled Natural Hazards: Severe Winter Storm/Ice, Flooding/fluvial erosion, Extreme Hot and Cold Temperature, Drought, and Pandemic (listed as "Epidemic" in 2016 plan).

2.1 Natural Hazards Overview

The following discussion on natural hazards is based upon information from several sources. General descriptions are based upon the *2018 Vermont State Hazard Mitigation Plan (SHMP).* According to NOAA Storm data, there were over 460 severe weather events from 1995-2016 in Orleans County. From 2017 to 2022, there were 87 severe weather events in the county.

The profiled hazards (severe winter/ice storm, flooding, extreme heat/cold, drought, and pandemic) have been profiled to provide the basis of future mitigation strategies. A profiled hazard can have high to moderate risk. While most profiled hazards are high risk, drought is a moderate risk. However, lower risk natural hazards (tornado, high winds, hail, landslide, earthquake, naturally occurring radiation, hurricanes, invasive species, and fire hazards) are omitted from full profiling because they do not pose enough risk to substantiate mitigation efforts at this time. And while the risk of a hazardous materials incident as outlined remain moderate due to border crossings and the associated vulnerabilities that result, the town will focus on natural hazards and pandemic response for this update. Additionally, impacts from hurricanes are addressed under flooding hazard.

Table 2-1: Summary of Vermont Emergency Declarations

Number	Year	Type
3567	2021	Tropical Storm Henri
3437	2020	Pandemic (COVID-19) national 3/13/20
3338	2011	Hurricane Irene
3167	2001	Snowstorm
3053	1977	Drought

Source: FEMA

Table 2-2: Summary of Vermont Major Disaster Declarations since 1998
(Orleans County: Bold and "" denotes Newport City PA received)*

DN	Date	Disaster Type	Title
160	1964	DR	DROUGHT & IMPENDING FREEZE
164	1964	DR	FLOODING
397	1973	DR	SEVERE STORMS, FLOODING, & LANDSLIDES
518	1976	DR	SEVERE STORMS, HIGH WINDS & FLOODING
1063	1995	DR	EXCESSIVE RAINFALL, FLOODING
1307	2000	DR	TROPICAL STORM FLOYD
1559*	**2004**	**DR**	**SEVERE STORMS AND FLOODING**
1428*	**2002**	**DR**	**SEVERE STORMS AND FLOODING**

1184	1997	DR	EXCESSIVE RAINFALL, HIGH WINDS, AND FLOODING
1101	1996	DR	ICE JAMS AND FLOODING
1228	1998	DR	SEVERE STORMS AND FLOODING
1715	2007	DR	SEVERE STORMS AND FLOODING
3167	2001	EM	SNOW
1995	2011	DR	SEVERE STORMS AND FLOODING
3338	2011	EM	HURRICANE IRENE
4001*	**2011**	**DR**	**SEVERE STORMS AND FLOODING**
4178	2014	DR	SEVERE STORMS AND FLOODING
4207	2015	DR	SEVERE WINTER STORM
4163*	**2014**	**DR**	**SEVERE WINTER STORMS**
4330	2017	DR	SEVERE STORM AND FLOODING
4380	**2018**	**DR**	**SEVERE STORM AND FLOODING**
4022	2011	DR	TROPICAL STORM IRENE
4066	2012	DR	SEVERE STORM, TORNADO, AND FLOODING
4356	**2018**	**DR**	**SEVERE STORM AND FLOODING**
4380	2018	DR	SEVERE STORM AND FLOODING
4140	2013	DR	SEVERE STORMS AND FLOODING
4474	2020	DR	SEVERE STORM AND FLOODING
4445	**2019**	**DR**	**SEVERE STORM AND FLOODING**
4532*	**2020**	**ED**	**COVID-19**
3567	**2021**	**DR**	**SEVERE STORM AND FLOODING**
4621	2021	DR	SEVERE STORM AND FLOODING

Source: [Declared Disasters | FEMA.gov]

2.1.1. Profiled Hazards:

An Introduction to Climate Change:

"Over the past several decades, there has been a marked increase in the frequency and severity of weather-related disasters, both globally and nationally. Most notably, the Earth has experienced a 1°F rise in temperature, which has far-reaching impacts on weather patterns and ecosystems. This statistically significant variation in either the mean state of the climate or in its variability, persisting for an extended period (typically decades or longer), is known as climate change. The Intergovernmental Panel on Climate Change (IPCC) forecasts a temperature rise of 2.5°F to 10°F over the next century, which will affect different regions in various ways over time. Impacts will also directly relate to the ability of different societal and environmental systems to mitigate or adapt to change6. Increasing temperatures are forecasted to have significant impacts on weather-related disasters, which will also increase risk to life, economy and quality of life, critical infrastructure, and natural ecosystems. The IPCC notes that the range of published evidence indicates that the costs associated with net damages of climate change are likely to be significant and will increase over time. It is therefore imperative that recognition of a changing

climate be incorporated into all planning processes when preparing for and responding to weather-related emergencies and disasters. Most of the natural hazards identified in this plan are likely to be exacerbated by changes in climate, either directly or indirectly. The National Aeronautics & Space Administration (NASA) reports that global climate change has already had observable effects on the environment: glaciers are shrinking, sea ice is disappearing, sea level rise is accelerating, heat waves are occurring more frequently and intensely, river and lake ice is breaking up earlier, plant and animal ranges have shifted, and trees are flowering sooner. Though climate change is expected to have global reach, the impacts differ by region. While the southwestern United States is expected to experience increased heat, wildfire, drought and insect outbreaks, the northeastern region is predicted to experience increases in heat waves, downpours and flooding. Accordingly, consideration of climate change was identified as a key guiding principle of the 2018 SHMP, addressed in each of the pertinent hazard profiles and incorporated into all relevant mitigation actions." 2018 SHMP

From 1962 to 2006, each five-year period resulted in 0-6 Major Disaster Declarations in Vermont. From 2007-2020, there were 23. It is commonly accepted that weather extremes are becoming more commonplace in Vermont. Since 2011, record setting snow, rain and cold have been experienced in the state. In recent years, it has become evident that human activities, mostly associated with the combustion of fuel, have added to the natural concentration of greenhouse gases in the atmosphere and are contributing to rapid climate change on a global scale. While projections of the effects of climate change vary, it is generally predicted that Vermont will have warmer temperatures year-round, with wetter winters and drier summers. An increase in the size and frequency of storms is also predicted. Thus, climate change in the next century will likely increase the chance of weather-related hazards occurring. An increase in precipitation may also result in increased flooding and fluvial erosion. Drier summers may increase the chance of drought and wildfire. A warmer climate may also result in the influx of diseases and pests that cold winters previously prevented. The severity of climate change is difficult to predict, though the effects may be mitigated somewhat if greenhouse gas emissions are reduced soon. In 2011, Governor Shumlin formed the *Vermont Climate Cabinet*. The Cabinet, chaired by the Secretary of Natural Resources, is a multidisciplinary approach to enhance collaboration between various state Agencies. Its primary objectives include providing the Governor with advisory information and facilitating climate change policy adoption and implementation. In 2013, the Vermont Agency of Natural Resources (ANR) released the Climate Change Adaptation Framework which addresses climate change exposures, vulnerability-specific elements within each of the natural resource sectors, and ongoing and proposed actions that can be or have been taken to prepare for the expected changes. In line and in conjunction with the ANR report, the primary goal of a VTrans climate change adaptation policy is to minimize long-term societal and economic costs stemming from climate change impacts on transportation infrastructure.

Table 2-3: Newport ,VT Climate Data and Extremes

Climate data for Newport, Vermont (1991–2020 normals, extremes 1930–present) [hide]													
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Record high °F (°C)	64 (18)	68 (20)	83 (28)	87 (31)	94 (34)	95 (35)	98 (37)	95 (35)	96 (36)	84 (29)	74 (23)	66 (19)	98 (37)
Average high °F (°C)	23.4 (−4.8)	27.1 (−2.7)	36.6 (2.6)	50.8 (10.4)	64.8 (18.2)	73.1 (22.8)	77.7 (25.4)	76.2 (24.6)	68.9 (20.5)	54.8 (12.7)	41.1 (5.1)	29.2 (−1.6)	52.0 (11.1)
Daily mean °F (°C)	13.7 (−10.2)	16.0 (−8.9)	25.8 (−3.4)	40.0 (4.4)	53.3 (11.8)	62.3 (16.8)	67.2 (19.6)	65.3 (18.5)	57.8 (14.3)	45.2 (7.3)	33.2 (0.7)	21.3 (−5.9)	41.8 (5.4)
Average low °F (°C)	3.9 (−15.6)	5.0 (−15.0)	14.9 (−9.5)	29.2 (−1.6)	41.9 (5.5)	51.6 (10.9)	56.6 (13.7)	54.5 (12.5)	46.8 (8.2)	35.6 (2.0)	25.3 (−3.7)	13.5 (−10.3)	31.6 (−0.2)
Record low °F (°C)	−38 (−39)	−38 (−39)	−32 (−36)	−2 (−19)	20 (−7)	28 (−2)	36 (2)	32 (0)	23 (−5)	11 (−12)	−7 (−22)	−40 (−40)	−40 (−40)
Average precipitation inches (mm)	2.83 (72)	2.44 (62)	2.83 (72)	3.34 (85)	3.94 (100)	4.52 (115)	4.54 (115)	4.42 (112)	3.93 (100)	4.29 (109)	3.35 (85)	3.40 (86)	43.83 (1,113)
Average snowfall inches (cm)	21.5 (55)	20.2 (51)	18.4 (47)	4.5 (11)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.8 (2.0)	7.0 (18)	25.2 (64)	98.6 (250)

concern across the state are in-line with the City of Newport. Given that the most recent SHMP was before the COVID-19 pandemic, the city has included pandemic (infectious disease) as a hazard due the magnitude of impact the pandemic had across the city. Wind has been left out of this update for the main reason that normal city operations are considered the most viable mitigation strategy for mitigation wind damage and no additional effort is required at this time. As it pertains to city-level assessments, the planning team reviewed the Natural Hazard and Risk Analysis Tool (Table 3-3 on page 42) for changes and additions and feel that while the assessment methodology is distinct from the SHMP Hazard Assessment, there are comparative similarities in scoring relationships.

Table 2-4: 2018 SHMP Hazard Assessment

Table 3: Hazard Assessment							
Hazard Impacts	**Probability**	**Potential Impact**					**Score*:**
		Infrastructure	Life	Economy	Environment	**Average:**	
Fluvial Erosion	4	4	3	4	4	3.75	15
Inundation Flooding	4	4	3	4	2	3.25	13
Ice	3	3	3	3	2	2	8.25
Snow	4	1	3	2	1	1.75	7
Wind	4	2	2	1	1	1.5	6
Heat	3	1	3	2	2	2	6
Cold	3	1	3	2	2	2	6
Drought	3	1	2	2	3	2	6
Landslides	3	3	2	1	2	2	6
Wildfire	2	3	3	3	2	2.75	5.5
Earthquake	2	3	3	3	2	2.75	5.5
Invasive Species	2	1	1	2	3	1.75	3.5
Infectious Disease Outbreak	2	1	3	2	1	1.75	3.5
Hail	3	1	1	1	1	1	3

*Score = Probability x Average Potential Impact

Severe Winter Storm

Winter storms impact the entire planning area and can include snowstorm, cold, blizzard and ice. According to the *2018 Vermont State All-Hazards Mitigation Plan*:

> *"Severe winter storms bring the threat of heavy accumulations of snow, cold/wind chills, strong winds, and power outages that result in high rates of damage and even higher rates of expenditures. A heavy accumulation of snow, especially when accompanied by high winds, causes drifting snow and very low visibility. Sidewalks, streets, and highways can become extremely hazardous to pedestrians and motorists. Severe winter storms develop through the combination of multiple meteorological factors. In Vermont and the northeastern United States, these factors include the moisture content of the air, direction of airflow, collision of warm air*

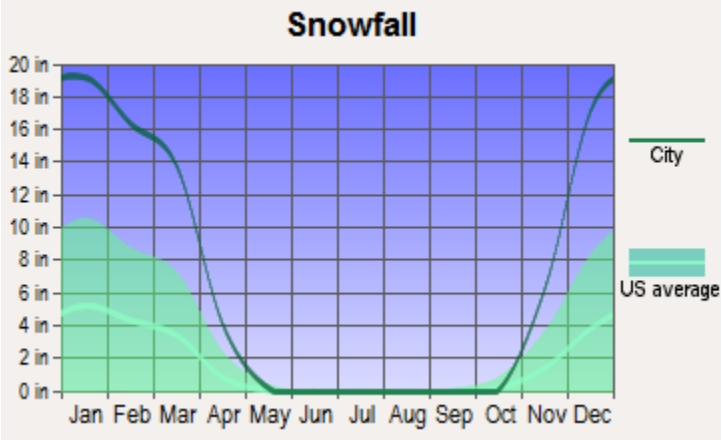
masses coming up from the Gulf Coast, and cold air moving southward from the Arctic. Significant accumulations of ice can cause hazardous conditions for travel, weigh down trees and power lines, and cause power outages. Freezing rain can also be combined with snowfall, hiding ice accumulation and further hindering travel, or with mixed precipitation and potentially ice jams or flooding."

Winter storm frequency and distribution varies from year to year depending on the climatological patterns but snowfall in the region is significantly higher than the national average. The winter of 2010-2011 was the third snowiest on record with a total of 124.3 inches. The record of 145.4 inches was set in 1970-1971. The potential for a major snowstorm that exceeds the capabilities of the city exists every year but with the recent increase in snowfall totals and cold temperature duration, the city realizes that further consideration is required. NOAA's National Centers for Environmental Information is now producing the Regional Snowfall Index (RSI) for significant snowstorms that impact the eastern two thirds of the U.S. The RSI ranks snowstorm impacts on a scale from 1 to 5, similar to the Fujita scale for tornadoes or the Saffir-Simpson scale for hurricanes. NCEI has analyzed and assigned RSI values to over 500 storms going as far back as 1900. As such, RSI puts the regional impacts of snowstorms into a century-scale historical perspective. The index is useful for the media, emergency managers, the public and others who wish to compare regional impacts between different snowstorms. The RSI and Societal Impacts Section allows one to see the regional RSI values for particular storms as well as the area and population of snowfall for those storms. The area and population are cumulative values above regional specific thresholds. For example, the thresholds for the Southeast are 2", 5", 10", and 15" of snowfall while the thresholds for the Northeast are 4", 10", 20", and 30" of snowfall. 2010, 2012 and 2015 have some of the highest rankings for notable storms in Newport City. These rankings are based, in part on the severity of the storm using the following system. Since 2000, there has only been one event that reached a category 4 in the Northeast, five reached Category 3, eight were "significant" and all others were notable.

Table 2-5: NOAA's Regional Snowfall Index (RSI) and Newport City Snowfall vs. U.S. Average

Category	RSI Value	Description
1	1–3	Notable
2	3–6	Significant
3	6–10	Major
4	10–18	Crippling
5	18.0+	Extreme

Newport City Snowfall vs. U.S. Average



The winter of 2010-2011 was the third snowiest on record with a total of 124.3 inches. The city has seen damage from declared snow disasters in the past, primarily dealing with debris removal from downed trees. Additionally, the city received PA funding to assist with snow removal indicating the potential for even a robust public works department becoming overwhelmed to manage a major snowstorm without outside assistance. In any Vermont community, this potential exists every winter. In January of 2015, Newport City received 28'' of snow compared to only 11.3'' in 2014. Historic January snowfall totals fell in 1987 (47.5''), 1978 and 1979 (46.5'', 45.8''). Total average snowfall for Newport City in December is 26.2'', January is 22.6'', February averages are slightly less at 16.9'' and March is 18.3''. February 14th-15th, 2007 saw the greatest 24-hour max snowfall total at 23.5''. The snowfall totals are annual averages based on weather data collected from 1981 to 2010 for the NOAA National Climatic Data Center.

There are no standard loss estimation models or methodologies for the winter storm hazards. Potential losses from winter storms are, in most cases, indirect and therefore difficult to quantify. According to the 2014 National Climate Assessment, there is an observable increase in severity of winter storm frequency and intensity since 1950. While the frequency of heavy snowstorms

has increased over the past century, there has been an observed decline since 2000 and an overall decline in total seasonal snowfall (*2018 SHMP*).

Ice Storm

Major Ice Storms occurred in January 1998 and again in December, 2014. The North American Ice Storm of 1998 was produced by a series of surface low pressure systems between January 5 and January 10, 1998. For more than 80 hours, steady freezing rain and drizzle fell over an area of several thousand square miles of the Northeast, causing ice accumulation upwards of 2'' in some areas. Newport City received less than .5'' of ice. On December 13th, 2013, another ice storm hit portions of Orleans County, resulting in the greatest disruption of electric service since 1998 at 96 hours for some customers within the city.

While there is evidence that supports an increase in weather and precipitation severity, the incidence of ice storms remains fairly spaced out. The city expects to have another ice storm but unlike rain and snow events, the occurrence of a major ice storm is not expected every year.

Extreme Temperatures

Temperature extremes are increasing, and this phenomenon is likely to continue. High temperatures can help to create severe storms as the one evidenced on September 11th, 2013, where record heat helped to produce damaging hail and winds in parts of the NEK and other areas of Vermont and NY. Recent extremes in cold temperatures are a concern and impact the entire city and region. 2015 tied the coldest winter (January to March) on record (1923) for Vermont according to the NOAA's National Climatic Data Center whose dataset dates to 1895. The National Weather Service has the following, recent, temperature records for Newport City, Vermont:

- Highest: 95 degrees, August 2001
- Lowest: -38 degrees, February 1933

Cold temperatures are expected in the Northeast, but they can pose a serious threat to health and safety, especially as the severity and duration increases in conjunction with other technological (e.g. power outage, fuel oil delivery disruption) and societal (ability to purchase heating fuel) factors. The winter of 2015 was the coldest anyone could remember with a mean temperature of 7.8 degrees Fahrenheit. However, the January of 1994 had a mean temperature of 2.7 degrees Fahrenheit which is the coldest mean temperature since 1930 and January is the statistically coldest month in all of Vermont. Since 1930, January produced temperatures in the negative 20's and 30's consistently for Orleans County with record cold temperatures occurring in 1957 and 1933 (-38). While the temperatures for the city remain within averages seen in the last 85 years, dangerously cold temperatures are expected every winter. There is no evidence to support concern over increases in high temperatures for the city as it relates to health and human safety at this time.

"Extreme cold temperatures can have significant effects on human health and commercial and agricultural businesses, as well as primary and secondary effects on infrastructure (e.g., burst pipes from ice expansion and power failure). What constitutes "extreme cold" can vary across different areas of the country based on what the population is accustomed to in their respective climates. Exposure to cold temperatures can cause frostbite or hypothermia and even lead to

heart attacks during physically demanding outdoor activities like snow shoveling or winter hiking. When temperatures dip below freezing, incidents of icy conditions increase, which can lead to dangerous driving conditions and pedestrian-related slipping hazards. A large area of low pressure and cold air surrounding the poles, known as a polar vortex, is strengthened in the winter. When these polar vortex winds are distorted, due to cyclical strengthening and weakening or interaction with high-amplitude jet stream patterns, they have the potential to split into two or more patterns, allowing artic air to flow southward along a jet stream1. As this arctic air is able to access more southerly regions, extreme cold conditions can be observed in Vermont, which also have the potential to remain over the region for extended periods" (2018 SHMP).

The NOAA Wind Chill Chart identifies those temperatures and associated wind speeds that may cause frostbite if skin is exposed to the air over a certain period of time:

Table 2-6: NOAA Wind Chill Chart

National Weather Service
Wind Chill Chart

Temperature (°F)

Wind (mph)	Calm	40	35	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45
5	36	31	25	19	13	7	1	-5	-11	-16	-22	-28	-34	-40	-46	-52	-57	-63
10	34	27	21	15	9	3	-4	-10	-16	-22	-28	-35	-41	-47	-53	-59	-66	-72
15	32	25	19	13	6	0	-7	-13	-19	-26	-32	-39	-45	-51	-58	-64	-71	-77
20	30	24	17	11	4	-2	-9	-15	-22	-29	-35	-42	-48	-55	-61	-68	-74	-81
25	29	23	16	9	3	-4	-11	-17	-24	-31	-37	-44	-51	-58	-64	-71	-78	-84
30	28	22	15	8	1	-5	-12	-19	-26	-33	-39	-46	-53	-60	-67	-73	-80	-87
35	28	21	14	7	0	-7	-14	-21	-27	-34	-41	-48	-55	-62	-69	-76	-82	-89
40	27	20	13	6	-1	-8	-15	-22	-29	-36	-43	-50	-57	-64	-71	-78	-84	-91
45	26	19	12	5	-2	-9	-16	-23	-30	-37	-44	-51	-58	-65	-72	-79	-86	-93
50	26	19	12	4	-3	-10	-17	-24	-31	-38	-45	-52	-60	-67	-74	-81	-88	-95
55	25	18	11	4	-3	-11	-18	-25	-32	-39	-46	-54	-61	-68	-75	-82	-89	-97
60	25	17	10	3	-4	-11	-19	-26	-33	-40	-48	-55	-62	-69	-76	-84	-91	-98

Frostbite Times
30 minutes 10 minutes 5 minutes

included as high risk. Vermont has a climate where extreme heat may be less likely than other regions in the country, but observation of temperature increases in the state have resulted in some concern. Heat-related occur in much greater frequency. Extreme maximum temperatures are often observed during drought years, and in many cases, the records that are broken were long-standing and set during previous droughts. It should be noted that a heat wave could be either a boon or a bane depending upon the time of year and the antecedent conditions. For example, the hot conditions of August 1996 followed a cool, wet summer, thereby providing an extra boost for plants. The 2018 Vermont State Hazard Mitigation Plan states the following:

"Extreme hot temperatures can have significant effects on human health and commercial and agricultural businesses, as well as primary and secondary effects on infrastructure (e.g. damage to asphalt roadways from softening). What constitutes "extreme heat" can vary across different areas of the world based on what the population is accustomed to in their respective climates. An example of this difference in acclimatization can be understood when comparing analyses of excess mortality due to heat: in New York City, the data show that the heat index threshold needs to reach at least 95°F to measure a significant rise in heat-related mortality, whereas the threshold in Montreal, Canada, only 400 miles north, is 91°F and did not need to factor in heat index. Similar epidemiological analyses completed by the Vermont Department of Health suggest that the heat threshold in which hospitals in the State see a rise in heat-related emergency room visits is 87°F1 . Temperature fluctuations are a result of several meteorological processes2 . Due to the tilt of Earth's axis, regions of the globe receive varying levels of solar radiation. The delta between these levels produces circulation patterns at the global level, which drive air and storm system movement via air masses. Air masses, as defined by NOAA, are thousands of feet thick and extend across large areas of the earth. Air masses that form over tropical ocean regions will become exceptionally hot and humid, while those masses above high latitude continents will become cool and dry. When these air masses meet, a front is created; fronts can either be cold or warm. In addition to these air mass and front-related impacts humans feel at ground level, movement of narrow bands of strong wind high in the atmosphere, known as jet streams, maneuver weather systems below and transfer heat and moisture across the globe. The speed and intensity of the jet stream will affect the duration and temperature associated with a cold or warm front. Extremely high temperatures can occur when a high-pressure system (under which air is descending toward the Earth's surface) develops and intensifies. Under such conditions, the potential for a heat wave exists. A heat wave is a period of three or more consecutive days during which the maximum temperature meets or exceeds 90°F." 2018 SHMP

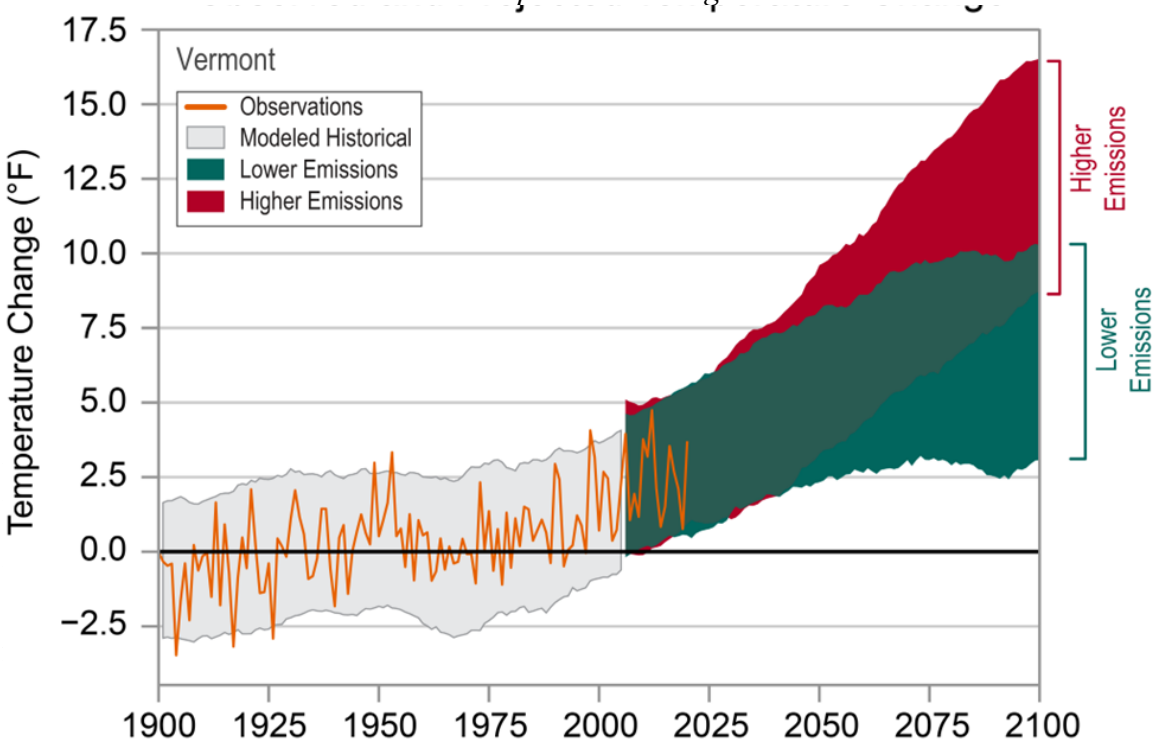
In anticipation of extreme heat events, the National Weather Service (NWS) may issue the following advisories:

- *Excessive Heat Outlook: A period of excessive heat is possible within the next 3 to 5 days.*
- *Heat Advisory – Take Action: A period of excessive heat is expected. The combination of hot temperatures and high humidity will create a situation in which heat related illnesses are possible. Heat Advisories are issued when heat indices are expected to reach at least 95°F*
- *Excessive Heat Watch: A prolonged period of dangerous excessive heat is possible within about 48 hours*
- *Excessive Heat Warning – Take Action: A prolonged period of dangerous excessive heat is expected within about 24 hours. The combination of hot temperatures and high humidity will create a situation in which heat related illnesses are possible. Excessive Heat Warnings are issued when heat indices are expected to reach at least 105°F*

The National Centers for Climate Information show that temperatures in Vermont have risen about 3°F since the beginning of the 20th century. While there are no data trends on the number

of hot days (days with temperatures of 87°F or greater, the past 11 years (2010-2020) was the warmest period in history. Under a higher emissions pathway as shown below, we can expect unprecedented warming to continue through this century, while the intensity of extreme winter cold will drop as well.[1]

Table 2-7: Observed and Historical Temperature Change Scale



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snowfall 40-60% of normal. This combination accounted for snow pack across the region to be largely below normal or even non-existent by mid-March. In Vermont, temperatures climbed into the 70s March 18 and low-80s.

March 19-22, 2012: Record heat was recorded across all of Vermont with maximum temperatures 30-40°F above normal and some daily records being broken by 10°F or more. This event caused an estimated reduction of 30% of maple sugar production, resulting in an estimated impact of nearly $10 million. In addition, there was significant loss of ski industry revenue due to a 25-50% reduction in snow loading.

Dangerously High Summer Heat

Heat is most likely to pose the greatest risk to human health in July, which is typically the hottest month of the year. In July of 1911, Northfield had a 12-day average of 90.75°F. The summer of 1949 was also very hot, with 25 days above 90°F. It is important to note here, however, that hot weather can have health impacts at even lower temperatures, with health risks increasing considerably when temperatures reach the mid-to-upper 80s. Between 2000 and 2017, the number of recorded days per year with a daily temperature high greater than or equal to 85°F peaked during the 2016 summer at 45 days, closely followed by the summer of 2015 at 41 days in Burlington. A heat wave across Vermont in late July 2022 resulted in seven consecutive days

[1] Runkle, J., K.E. Kunkel, S.M. Champion, L.-A. Dupigny-Giroux, and J. Spaccio, 2022: Vermont State Climate Summary 2022. NOAA Technical Report NESDIS 150-VT. NOAA/NESDIS, Silver Spring, MD, 4 pp.

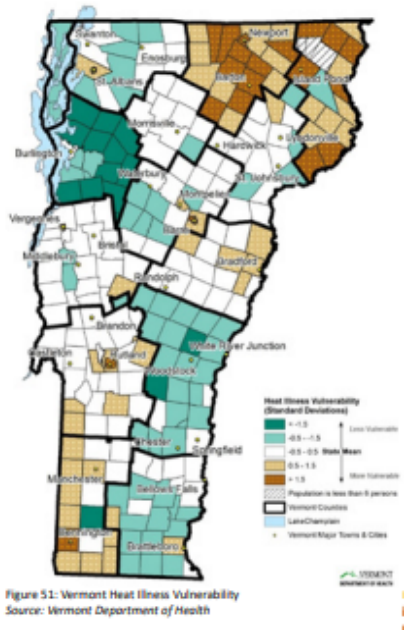
of temperatures above 80°F in Newport from July 20 through July 26. Maximum temperature reached 89°F on July 21st and July 24.

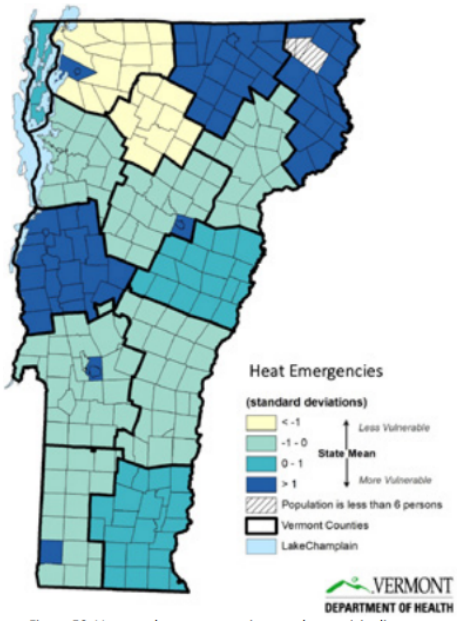
- *August 1-2, 2006: A heat ridge moved into Vermont during the early morning August 1. Temperatures soared into the 90s but significantly more important were dewpoints that reached the middle to upper 70s to produce excessive heat index values of 100°F to 105°F, some of the highest values in nearly a decade.*

- *July 21, 2011: Temperatures across much of southern Vermont warmed into 90s with dew points in the 70s, combined with the hot temperatures and resulted in heat indices of 100°F to 104°F. This was the 2nd day of a 3 to 4-day heat wave across a large portion of Vermont with heat index values of 100°F to 108°F across the Champlain and Connecticut valleys as well as some interior valleys. One death is attributed to this event in Windsor County.*

The Heat Vulnerability in Vermont report suggests that Vermonters are at a greater risk for serious, heat-related illness – potentially even death – when the statewide average temperature reaches or exceeds 87°F. The Health Department's Climate & Health Program has reviewed six heat vulnerability themes (population demographics of a town or city, socioeconomic status, health status of city residents, environmental characteristics, the ability of city residents to acclimate to hot temperatures and emergency room visits for heat illness) and determined a thematic vulnerability for each. In general, those at higher risk during hot weather include older adults and children, people with chronic medical conditions, people active outdoors, people without air conditioning, and people living in more urbanized parts of Vermont. The hot-weather vulnerability maps by theme, and more information regarding the health impacts of increasing temperatures and prolonged periods of hot weather are available at the Department of Health's Climate & Health website: www. healthvermont.gov/environment/climate.
Newport City, along with the northeast portion of Vermont, has the highest concentrated heat illness vulnerability and heat emergency ratings as seen in the maps below.

Table 2-8: Heat Vulnerability and Emergency Mapping





Source:
https://www.healthvermont.gov/sites/default/files/documents/pdf/ENV-CH-hot-weather-planning-guidance.pdf

Vermont data indicate that Vermont residents experience heat-related illnesses at temperatures lower than in many other parts of the country. This is likely related to how infrequently hot weather occurs in Vermont, which has several impacts:
We do not experience enough hot weather for people's bodies to adapt to hotter conditions,
Many homes in Vermont are not adequately weatherized and do not have air conditioning,
At a state and community level, we have not developed plans and policies needed to be prepared for hot weather,
At an individual level, it can be hard to adapt behaviors to stay safe during hot weather, and
Vermont has a large population of older adults, who are at more risk for heat-related illnesses.

The primary impact of extreme heat or prolonged periods of hot weather is to human life. Hot conditions, especially when combined with sun and high humidity, can limit the body's ability to thermoregulate properly. Prolonged exposure to hot conditions can lead to heat cramps, heat exhaustion, heat stroke, or exacerbate other pre-existing medical conditions. Some of these impacts require medical attention and can be fatal if left untreated. Heat kills more people in the US each year than any other type of weather event.
A new guidance report released by the Vermont Department of Health highlights the health risks from extreme heat. The report is informed by the 2021 heat wave in the Northwestern US and Western Canada, an area with a similar summer climate to Vermont. More than 1,400 people died during that event.
Between 2009 and 2019, the Vermont Department of Health reports that there were an average of 104 heat-related emergency department (ED) visits per year and 12 total heat-related deaths across the state. Heat-related ED visits have trended up over that period by more than 2 additional ED visits each year. 2018 was the deadliest year in recent record, with 173 heat-related ED visits and 5 heat-related deaths in total, including 90 ED visits and 4 deaths

during a 6-day heat wave in early July. These numbers only include ED visits and deaths specifically attributed to heat in a hospital or death record. (Data at the Orleans County level is not available.). Heat-related illnesses mainly occur between May and September. It takes time for our bodies to adjust to warmer weather, so unseasonably hot days early in the year can be particularly harmful.

Table 2-8a: Heat Index with ED Visits

	May	June	July	August	September
Average daily high heat index* (°F), Burlington Airport	68°	75°	83°	81°	72°
Heat-related ED visits, statewide total, per month (2009-2019)	14	19	47	17	7

The risk for heat-related illnesses and deaths increases substantially when the heat index reaches 90°F or above in Burlington – which is equivalent to about 85°F in cooler places like Newport. All ED visits and deaths (related to any cause) increase as the heat index rises, as many chronic physical and mental health conditions are worsened by heat exposure.

Table 2-ba: Heat Index Magnitude and Frequency with ED Visits and Deaths

Max heat index (°F), Burlington Airport	Days per year*	Heat-related ED visits, per day*	Heat-related deaths, total*	All ED visits, per day*	All deaths, per day*
Less than 80°	97	0.2	2	742	12.9
80° - 89°	46	1	2	778	13.3
90° - 94°	6	3	2	789	14.1
95° or hotter	3	7	6	795	14.2

* Heat-related data are reported for May-September, 2009-2019. ED visits and deaths are statewide totals.

Vulnerable Populations

Although all Vermonters can be affected by hot weather, there are specific factors that can increase an individual's risk for experiencing heat-related health impacts. The risk for heat illnesses tends to be greater for the following groups of people:

People Living in Urban Areas: Only about one-third of Vermonters live in urban areas as defined by the US Census, but a disproportionate number of heat-related deaths from 2009-2019 (10 of 12) occurred in municipalities that are at least partially urban. Urban heat risk data collected by Health Department volunteers in 2020 were used to estimate that on a hot day, the heat index can be as much as 15°F hotter in the most urban locations in Vermont compared to largely undeveloped and wooded locations. Urban areas also take longer to cool off at night. Newport's urban area, which is depicted on the attached map, includes 3,456 individuals in 1,594 housing units. Slightly more than half of those units (798) are renter occupied.[2]

[2] To qualify as an urban area, the territory must encompass at least 2,500 people, at least 1,500 of which reside outside institutional group quarters. Urban areas are based on the 2010 Census, and 2020 urban area data will not be released until December 2022.

People Without Adaptation Resources: People with lower incomes may not be able to afford air conditioners. Renters, who typically pay a higher percentage of their incomes on housing, may have less ability to retrofit their home with air conditioning or an open-source heat pump. (RuralEdge clients are typically responsible for their own cooling improvements.) Individuals without access to private transportation and limited transportation options may not be able to get to a store to purchase an air conditioner or even travel to a cooling center. People who live alone are also at greater risk. According to the Dept. of Health guidance, all ten of those heat-related deaths occurred at the decedent's home, and many of the decedents lived alone.
611 households in Newport's urban cluster (38%) are householders who live alone. Nearly half of those single householders (298) are over the age of 60%.
People Who are Unusually Sensitive to Heat Exposure: This category can include anyone not acclimated to hot weather, especially older adults and young children, pregnant women, people that are overweight or have a chronic medical condition, people using drugs, alcohol or some prescription medications, and people who experienced a prior heat illness. The most severe heat-related impacts in Vermont have been experienced by older adults. Ten of the 12 people that died in Vermont from a heat-related cause between 2009 and 2019 were over the age of 50.
22% of the individuals in Newport's urban cluster are 60 years or older, and 10% are at least 75 years old.

People with Greater Exposure to the Elements: Newport has an unhoused population, but it's difficult to quantify. We know that homelessness has increased statewide for two consecutive years – and we've seen a significant increase in the number of unhoused families with children. Much of the increase is likely due to COVID. Statewide, the annual point-in-time (January 26, 2022) count of individuals experiencing homelessness outside of Chittenden County is 2,112[1]. The Northeast Kingdom does not have an emergency homeless shelter for extreme weather emergencies, such as cold snaps or extended heat advisories. There are no private motels that accept state vouchers for emergency housing. Currently the only COVID shelter options for the homeless are in Chittenden or Rutland County.
Homelessness affects a large and diverse segment of the population. Some struggle with mental illness or drug addiction, and some are fleeing domestic violence. Some individuals may be experiencing "chronic" homelessness, which is defined as being homeless more than four times over the past three years.

Additional vulnerabilities related to extreme heat

Vector-born disease
Data suggest that health impacts are also associated with prolonged hot weather and increasing average temperatures. For example, increases in the incidence of vector-borne diseases (e.g. Lyme, West Nile and Eastern equine encephalitis) in Vermont and New England at-large have been observed and are attributed to warming conditions. The increase in average annual temperatures and shortened winters have allowed mosquitos and ticks to become more active earlier in the spring and remain active later in the fall. Because the incidence of Lyme disease in Vermont is higher than the national average at present, lengthening vector seasons is of great concern to the health community in Vermont. People working in the outdoors – loggers and farmers, for example – are most vulnerable to vector-borne illness.

Cyanobacteria blooms: Hot weather can increase thermal stratification in water bodies, where shallow water layers are much warmer and do not readily mix with cooler, deeper water layers. Stratified water layers are most common in late summer and early fall, providing more favorable conditions for development of cyanobacteria blooms in Vermont's lakes and ponds. Some types of cyanobacteria can release natural toxins or poisons (called cyanotoxins) into the water, especially when they die and break down. Swimming or wading in water with cyanobacteria may cause minor skin rashes, sore throats, diarrhea, stomach problems, or occasionally more serious health problems. Children and pets are at higher risk of exposure because they are more likely to play near the shoreline and drink water while swimming10. The rise in average annual temperature and increased occurrence of prolonged hot weather events will also have impacts on infrastructure, the environment and the economy in Vermont.

Drought & Wildfire

As temperatures continue to rise, there is likely to be a heightened consideration for water supplies. Higher temperatures will lead to increased evapotranspiration, soil drying rate and the frequency of short-term droughts, limiting water availability for tree growth. With a changing forest complexion and greater levels of evapotranspiration, extreme heat and prolonged hot weather could also lead to an increase in the occurrence of wildfires in Vermont. Newport has limited forest cover, but a changing forest complexion and greater levels of evapotranspiration, extreme heat and prolonged hot weather could also lead to an increased risk of wildfire.

Forest impacts & invasive species

Native forests and ecosystems are projected to experience negative impacts of these warming trends, as well11. Northern hardwood species like maple, yellow birch and American beech are anticipated to be nearly eliminated in the State, replaced by those tree species that thrive in warmer, drier conditions, like oak and pine. Additionally, the changing climate will allow for greater survival and reproduction of forest pest species, as trees that are stressed due to lower water availability reduce their ability to maintain sufficient defense mechanisms, making them more vulnerable to pest invasion and disease.

Planning Considerations:

There are limited cooling facilities for Newport residents. Community cooling sites can be an essential resource for community members that do not have access to air-conditioning and need extra assistance to stay safe during hot weather. To be most effective, cooling site **locations** should be identified and advertised before hot weather occurs. The Vermont Department of Health maintains a map of known cooling sites at healthvermont.gov/climate/heat. Newport has two sites listed: Prouty Beach and Gardner Park. Outdoor options are not always useful or practical for people with limited mobility or underlying conditions, so City officials should explore arrangements with organizations and businesses with facilities that could be identified as indoor cooling sites. Here are the characteristics of an optimal cooling site:

Table 2-9: Cooling Site Options

Minimum recommendations	Encouraged amenities
Air-conditioned	Public transit or personal transportation assistance
Free entry	Activities available for guests
Convenient for community to access	Separate room for families and children

American Disabilities Act compliant	Access to wi-fi and power for personal devices
Access to restrooms	Food/snacks provided
Access to water	Provisions for pets
Electricity for medical equipment	Back-up generator available
Refrigeration for medications	Extended hours as needed
Seating available for all guests	On-site health and social services
Widely advertised throughout community	Law enforcement or other site safety officer

People are reluctant to leave their homes in a heat emergency. Experience has shown that individuals can be reluctant to leave their homes, even in the event of an emergency. Successful messaging about cooling sites in the event of an extended heat advisory will depend largely on communication with property managers of rental properties, visiting nurses, and other home service providers for Newport's at-risk populations.

Retrofit of Newport's older housing stock is costly. Newport's housing stock is relatively old and probably energy inefficient. According to American Community Survey 5-Year estimates 2020, about 35% of Newport's housing units predate 1940. Such structures are far more likely to be "leaky" and have poor ventilation in the event of a heat emergency. Weatherization, such as improvements to the thermal envelope can help cooling performance. Additional measures such as open-source heat pumps and mini-splits can also provide air conditioning while using substantially less energy than traditional air conditioning window units. Unfortunately, Newport City has a high rate of "energy burden" which is measured as a household's total energy spending as percentage of income. A 2019 report from Efficiency Vermont estimates average statewide energy burden to be about 10%, but in the Northeast Kingdom, the rate trends much higher. The greatest determinant of energy burden is income, not fuel cost. Those who are energy burdened are less likely to pursue weatherization or fuel switching. Even if those measures save money in the long run, they can't afford it. Retrofit is even more challenging in the Northeast Kingdom because labor and supply-chain shortages drive the cost of weatherization upgrades even higher than other parts of the state.

2.1.2. Flooding

There are three main types of flooding that occur in Vermont: flooding from rain or snow melt, flash flooding and urban flooding. While ice jam risk for the city is considered low, these events may result in widespread damage in major river floodplains or localized flash flooding caused by unusually large rainstorms over a small area.

The effects of all types of events can be worsened by ice or debris dams and the failure of infrastructure (especially culverts), private and/or beaver dams. Rainstorms are the cause of most flooding. Winter and spring thaws, occasionally exacerbated by ice jams, are another significant source of flooding, especially when coupled with high rain levels. Much of this flooding is flash flooding, occurring within hours of a rainstorm or other event. Flash flooding, as opposed to flooding with a gradual onset, causes the largest amount of damage to property and infrastructure. Floods cause two major types of damage: water damage from inundation and erosion damage to property and infrastructure. The 2018 Vermont State All-Hazards Mitigation Plan discusses flooding extensively:

"Flooding is the most common recurring hazard event in Vermont. In recent years, flood intensity and severity appear to be increasing. Flood damages are associated with inundation flooding and fluvial erosion. Data indicate that greater than 75% of flood damages in Vermont, measured in dollars, are associated with fluvial erosion, not inundation. These events may result in widespread damage in major rivers' floodplains or localized flash flooding caused by unusually large rainstorms over a small area. The effects of both inundation flooding and fluvial erosion can be exacerbated by ice or debris dams, the failure of infrastructure (often as a result of undersized culverts), the failure of dams, continued encroachments in floodplains and river corridors, and the stream channelization required to protect those encroachments." 2018 SHMP

June 2015 broke records across the state for the wettest on record. Newport City received 7 to 8 inches of rain in June, but flooding did not result. Recent history, including the flooding events of 2011 and the records set in 2015 suggest that increases in total rain fall and severity are to be expected along the lines seen with the records set across the state recently. There are three sources of historical precipitation data for Vermont. The data are reported at the county level: 1) recurrence time intervals for 24-hour rainfall storm depth, 2) annualized daily frequency of rainfall, and 3) rainfall-intensity frequencies. The first source of data is the recurrence time intervals for 24-hour rainfall storm depth. The recurrence depth data describes the expected intensity of major rainfall events with respect to both rainfall depth and frequency of occurrence.

The effects of all types of events can be worsened by ice or debris dams and the failure of infrastructure (especially culverts), private and/or beaver dams. Rainstorms are the cause of most flooding. Winter and spring thaws, occasionally exacerbated by ice jams, are another significant source of flooding, especially when coupled with high rain levels. Much of this flooding is flash flooding, occurring within hours of a rainstorm or other event. Flash flooding, as opposed to flooding with a gradual onset, causes the largest amount of damage to property and infrastructure. Floods cause two major types of damage: water damage from inundation and erosion damage to property and infrastructure. The 2018 Vermont State All-Hazards Mitigation Plan discusses flooding extensively.

The second source of data are the annualized daily frequencies of rainfall, which can be obtained from the National Climatic Data Center (NCDC), Climate Normals program. Here, conventional 30-year normals and 15-year normals for all available variables and statistics are available. Map and text station search and selection capabilities are also available. The Data Access Tool has separate access options for both conventional 30-year (1991–2020) and supplemental 15-year (2006–2020) time periods. The data provides the average number of days per year with measurable precipitation (greater than 0.01 inches) on a county-by-county basis. This data allows for the conversion of the annual probabilities derived from the recurrence time intervals to daily probabilities. The annualized estimated daily frequency of measurable rainfall for Orleans County is 174 days (highest in the state) with 119 days of rain and 55 days of snow. The final source of data are rainfall-intensity frequencies. Hourly precipitation totals throughout the state of Vermont were obtained from the NCDC's Cooperative Observer Program (COOP). Hourly rainfall data were available for 26 COOP locations between 1962 through 2012. Each station is associated with the specific county in which it was located, and the hourly precipitation totals for

each station are aggregated by county to yield a frequency distribution of hourly rainfall intensities.

Tropical cyclones (storms) are officially ranked on one of five tropical cyclone scales, according to their maximum sustained winds and which tropical cyclone basin are located. Only a few scales of classifications are used officially by the meteorological agencies monitoring the tropical cyclones, but some alternative scales also exist, such as Accumulated cyclone energy, the Power Dissipation Index, the Integrated Kinetic Energy Index, and Hurricane Severity Index. Of most recent importance for Vermont was Tropical Storm Irene in 2011. Irene first struck the U.S. as a Category 1 hurricane in eastern North Carolina, then moved northward along the Mid-Atlantic Coast. Wind damage in coastal North Carolina, Virginia, and Maryland was moderate, with considerable damage resulting from falling trees and power lines. Irene made its final landfall as a tropical storm in the New York City area and dropped torrential rainfall in the Northeast that caused widespread flooding. Irene resulted in the worst Vermont flooding in 83 years.

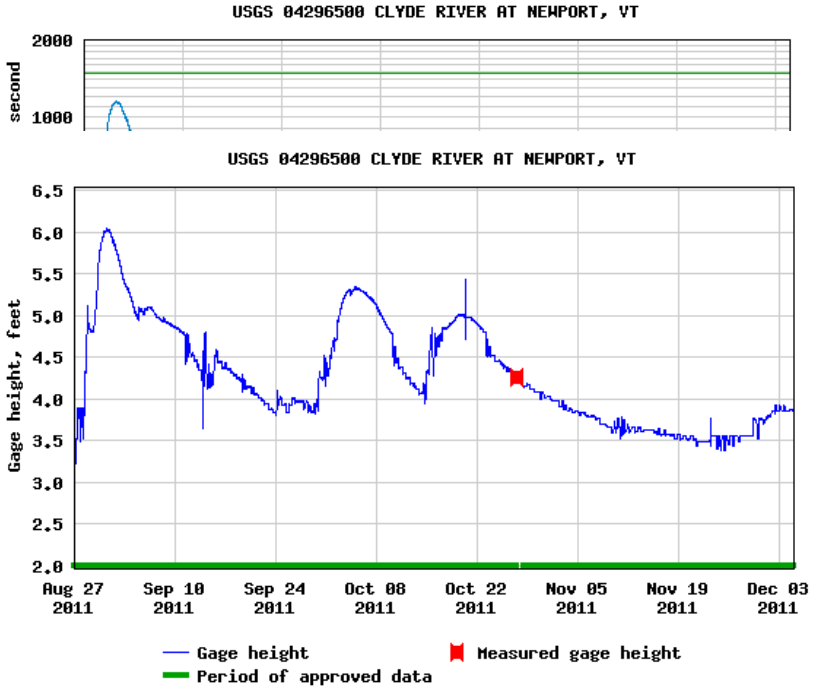
Table 2-10

Tropical Storm Irene Rain and Wind Extremes	
Rainfall	Wind
Mendon, 11.23 inches	Burlington, 51 mph
Walden, 7.60 inches	Morrisville, 40 mph
Randolph Center, 7.15 inches	Springfield, 40 mph

Source: http://www.accuweather.com/en/weather-news/irenes-infamous-top-ten-1/54348

While not classified as a Tropical Storm, the April 2011 rain totals for the NEK reached nearly 7" compared to the normal precipitation for the month at 3". The heaviest rainfall event was associated with thunderstorms during the late afternoon of April 26th into the early morning hours of April 27th, 2011. These storms resulted in record and near record rainfall and flooding across portions of northern Vermont. Newport City received 7" of rain during this period.

Table 2-11: 2011 "Irene" Discharge Rates for Clyde River



damaging flood event for many
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to 5 inches of rain, which
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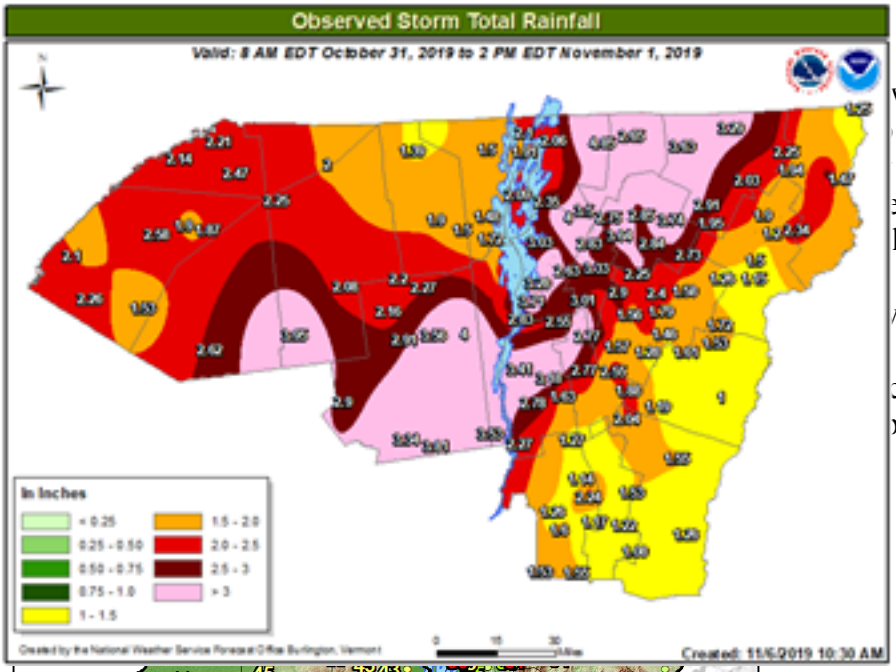
major levels. A new record high level of 14.72 feet was attained at North Troy on the Missisquoi River. Extensive flooding was observed in the following river basins: Missisquoi, Lamoille, Winooski, and Ausable, while flash flooding with very sharp rises of smaller streams and rivers occurred across the higher terrain of the eastern Adirondacks into central and northern Green Mountains of Vermont, including the Champlain Valley. Observed total rainfall recordings were 5.26 inches in East Berkshire, 4.85 inches in Enosburg Falls, 4.80 in Fletcher, 4.32 Westford, and 4.0 inches in Elizabethtown, New York. Table 2-7 below shows the storm total precipitation from 31 October at 8 AM to 1 November 2019 at 2 PM.

Despite nearly $24 million in public assistance funding for the state and Orleans County sustaining the highest level of per capita impact by a very large margin ($27.64) resulting from DR4474, Newport City did not have significant damage. [FEMA-4474-DR-VT]

Table 2-12: Observed storm total rainfall from 8 AM EDT on 31 October to 2 PM EDT on 1 November 2019



winds, which caused
Vermont. The core of the
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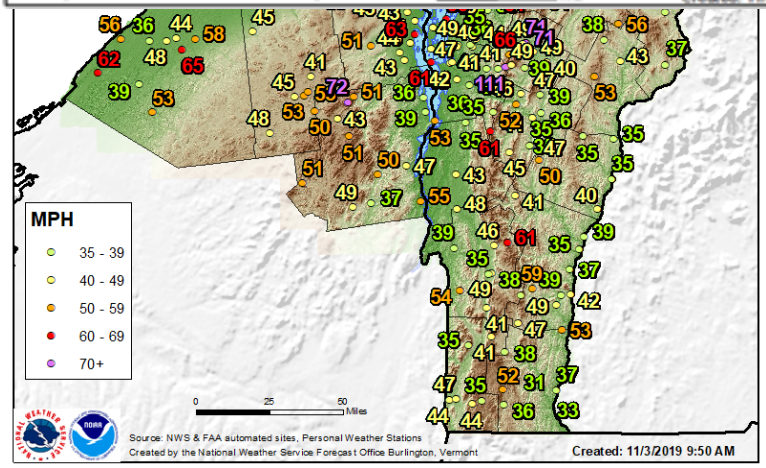
peak wind gusts included
York, while a gust to 71
at Mount Mansfield in
cross the North County on
parison to other areas in the



Flood Vulnerability

Flooding is the most common recurring hazard event in the state of Vermont. There are three main types of flooding that occur in Vermont: flooding from rain or snow melt, flash flooding and urban flooding. Flooding has also been known to occur as a result of ice jams in rivers adjoining developed towns and cities. These events may result in widespread damage in major river floodplains or localized flash flooding caused by unusually large rainstorms over a small area. The effects of all types of events can be worsened by ice or debris dams and the failure of infrastructure (especially culverts), private and/or beaver dams. Rainstorms are the cause of most flooding in Newport City. Winter and spring thaws, occasionally exacerbated by ice jams, are another significant source of flooding, especially when coupled with high rain levels. Much of this flooding is flash flooding, occurring within hours of a rainstorm or other event. Flash flooding, as opposed to flooding with a gradual onset, causes the largest amount of damage to property and infrastructure. Floods cause two major types of damage: water damage from inundation and erosion damage to property and infrastructure. The *2013 Vermont State All-Hazards Mitigation Plan* discusses flooding extensively. While that plan is concerned with all of Vermont, the information on flooding is all relevant to Newport City in that:

"Recent studies have shown that most flooding in Vermont occurs in upland streams and road drainage systems that fail to handle the amount of water they receive. Due to steep gradients, flooding may inundate these areas severely, but only briefly. Flooding in these areas generally has enough force to cause erosion capable of destroying roads and collapsing buildings. These areas are often not mapped as being flood prone and property owners in these areas typically do not have flood insurance (DHCA, 1998). Furthermore, precipitation trend analysis suggests that intense local storms are occurring more frequently. Additionally, irresponsible land use and development will exacerbate the preexisting vulnerability. Urban flooding usually occurs when drainage systems are overwhelmed and damages homes and businesses. This flooding happens in all urban areas, but specifically in Burlington where the area is located at the bottom of a gradient, which adds to the intensity of this localized flooding…

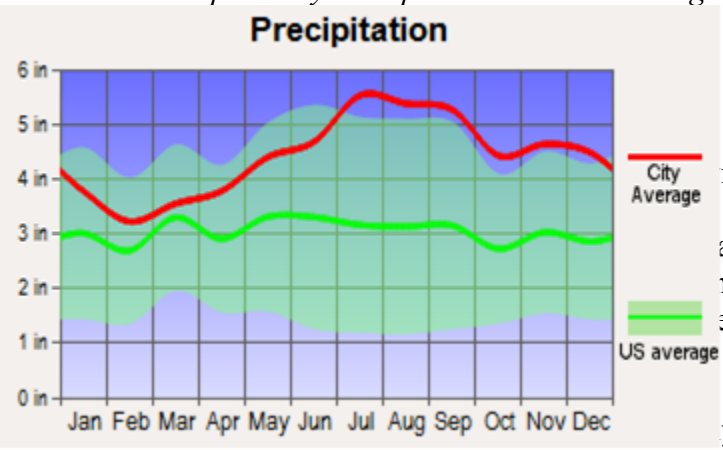
…Over the past two decades, flood damage costs have risen dramatically in Vermont due to increasing occurrences of flooding and increases in vulnerability associated with unwise land use development in flood plains or within stream corridors. The geography and topography are right for a significant localized storm with extreme damage at almost any location in Vermont. Heavy rains with previous ground saturation, which causes runoff, are a significant part of the flooding formula in Vermont. Steep topography and narrow, inhabited, stream and river valleys further increase the dangerous nature of this hazard. Furthermore, precipitation trend analysis suggests that intense, localized storms that can cause flash flooding are occurring with greater frequency. While flooding will continue, planning and other mitigation measures can help minimize damages.

All of Vermont's major rivers have inhabited flood plains. While residents in mountain valleys are at risk, they may not be aware of the danger or may choose to ignore it. There are many reasons property owners are reluctant to relocate to less flood prone ground, not the least of which is the lack of personal experience of flooding. In addition, many communities originated beside rivers and streams; some of the most attractive property is located in vulnerable areas. Lakeshore property in Vermont is vulnerable to flooding from high water levels, either by

surface water erosion or flooding. Occasionally, water-saturated ground and high water tables cause flooding to basements and other low lying areas. Lakeshore property is highly desirable and valuable, making the development of lakeshore areas very likely, even with the high potential for flooding. Restrictions on lakeshore property development have significant negative economic and tax revenue impacts that must be carefully weighed against the gains in personal safety and protection of property."

Vermont experienced major floods long before Federal disaster assistance became available. The most destructive recorded event was in November of 1927. In the month before the flood, rains more than 150% of normal precipitation fell after the ground had frozen. The flood itself was precipitated by 10 inches of rain falling over the course of a few days. The flood inundated parts of many towns and damaged or destroyed numerous bridges in the county. As the history of the flooding cited above bears out, the geography and topography are right for a significant localized storm with extreme damage at almost any location in Vermont. Numerous floods have resulted in Presidentially declared disasters and an influx of Federal disaster assistance. Of these disasters, 1973 flood inflicted widespread damage across the state and the residual rains of Hurricane Belle in 1976 resulted in substantial federal disaster assistance in Vermont. The greatest 24-hour rainfall record for the city occurred in late August 2011 at 4.01". The greatest level of precipitation in any month for the city occurred in August 2011 at 11.12". Previous experiences have proven to the city that flooding is the greatest risk, and another flood event is probable by the time this plan requires an update. With this conviction, the need to complete viable mitigation actions to city infrastructure becomes incredibly important and the city remains aware of this. The estimated Capacity-Disruption Levels Given a Measured Rainfall Event can be interpreted as the conditional probability that a particular roadway capacity disruption occurs, given that a rainfall event occurs. For Orleans County, the probability that the intensity of a rain event will result in approximately a 2%, 7.5%, or 13.5% roadway capacity reduction are 7.35%, 23.96%, or 1.3%, respectively *(Source: A Risk-Based Flood-Planning Strategy for Vermont's Roadway Network, 2015).*

Table 2-14: Newport City Precipitation vs. U.S. Average



n as the floodplain. During high water across its floodplain. FEMA defines the ance flood as the Special Flood Hazard nce Program (NFIP) floodplain e mandatory purchase of flood insurance

y occurs slowly, over an extended period but can spread out over a large area of land. Due to the slower onset of inundation flooding on larger rivers, there is time for emergency management planning (e.g., evacuations, electricity shut-off considerations, etc.) to take place. Though the inundation floodwaters are slower to hit, they often take time to recede as well, and exposure to water for an extended period can result in

significant property damage. U.S. Geological Survey's (USGS) National Water Information System monitors real-time streamflow gaging stations in Vermont.

Inundation and fluvial erosion may both increase in rate and intensity because of human alterations to a river, floodplain, or watershed. For instance, when a dam fails there may be significant, rapid inundation which can occur without warning. Public and private structures and infrastructure become vulnerable when they are located on lands susceptible to inundation and fluvial erosion.

Newport City is located at the southern end of Lake Memphremagog and is entirely within the Lake Memphremagog Watershed, which encompasses a total of 647 square miles of which 489 square miles are in Vermont and 198 square miles of which are in the Province of Quebec in Canada. The City of Newport encompasses approximately six square miles. Three main rivers, the Clyde, the Barton and the Black flow into Lake Memphremagog at the southern end of the lake. The Barton and Black rivers flow into South Bay and the Clyde River enters in the center of the city at Railroad Square. A 1909 treaty established between Newport City and Canada allows for the City, under defined circumstances, to request a lowering of the lake. While Gardner Park floods almost yearly in the spring, the magnitude does not pose a historical risk for the water system. Regarding flood inundation issues, the *2018 Vermont State All-Hazards Mitigation Plan* states:

"Recent studies have shown that most flooding in Vermont occurs in upland streams and road drainage systems that fail to handle the amount of water they receive. Due to steep gradients, flooding may inundate these areas severely, but only briefly. Flooding in these areas generally has enough force to cause erosion capable of destroying roads and collapsing buildings. These areas are often not mapped as being flood prone and property owners in these areas typically do not have flood insurance (DHCA, 1998). Furthermore, precipitation trend analysis suggests that intense local storms are occurring more frequently. Additionally, irresponsible land use and development will exacerbate the preexisting vulnerability. Urban flooding usually occurs when drainage systems are overwhelmed and damages homes and businesses. This flooding happens in all urban areas, but specifically in Burlington where the area is located at the bottom of a gradient, which adds to the intensity of this localized flooding…

…Over the past two decades, flood damage costs have risen dramatically in Vermont due to increasing occurrences of flooding and increases in vulnerability associated with unwise land use development in flood plains or within stream corridors. The geography and topography are right for a significant localized storm with extreme damage at almost any location in Vermont. Heavy rains with previous ground saturation, which causes runoff, are a significant part of the flooding formula in Vermont. Steep topography and narrow, inhabited, stream and river valleys further increase the dangerous nature of this hazard. Furthermore, precipitation trend analysis suggests that intense, localized storms that can cause flash flooding are occurring with greater frequency. While flooding will continue, planning and other mitigation measures can help minimize damages.

All of Vermont's major rivers have inhabited flood plains. While residents in mountain valleys are at risk, they may not be aware of the danger or may choose to ignore it. There are many reasons property owners are reluctant to relocate to less flood prone ground, not the least of which is the lack of personal experience of flooding. In addition, many communities originated

beside rivers and streams, some of the most attractive property is located in vulnerable areas. Lakeshore property in Vermont is vulnerable to flooding from high water levels, either by surface water erosion or flooding. Occasionally, water-saturated ground and high-water tables cause flooding to basements and other low-lying areas. Lakeshore property is highly desirable and valuable, making the development of lakeshore areas very likely, even with the high potential for flooding. Restrictions on lakeshore property development have significant negative economic and tax revenue impacts that must be carefully weighed against the gains in personal safety and protection of property." 2018 SHMP

In general, floods in the area are caused by heavy rains. Springtime rains are often associated with snowmelt. A winter thaw, accompanied by rain often leads to ice jams which also cause riverine flooding. Hurricanes traveling up the east coast of the country produce occasional flooding situations. Much of the land immediately surrounding Lake Memphremagog is susceptible to periodic flooding. The Magog River presents a constriction to flows through Magog, Quebec. Thus, the river effectively controls lake level flooding. The level of Lake Memphremagog is controlled by a dam at Magog, Quebec. The normal operating range of the lake is maintained in accordance with the Boundary Water Treaty of 1909 and agreed upon by an exchange of notes between the Governments of the United States and Canada in 1935. The operating ranges agreed to are as follows: Upper Limit: 683.00' MSL; Lower Limit: 679.28' MSL. Also, during times of flooding, the sluiceways of the dam shall be sufficiently opened to ensure that the outflow from the lake shall be unobstructed by the dam, the flood water drawn off and the water level in the lake reduced to the normal regulated level as rapidly as possible. Low lying areas of Newport City are subject to periodic flooding caused by overflows of the Black River and Clyde River and their tributaries. The city is also subject to lacustrine flooding by Lake Memphremagog. The most frequent flooding occurs in early spring because of snowmelt and heavy rains, but flooding has historically occurred in every season. Flooding has also occurred due to debris collection and ice jams. Notable floods in this area have occurred in several years. Most of the damage from these storms was caused by the storm and not directly related to flooding from the river corridors or the lake. The lake water level from the one-hundred-year storm is 686' which is three feet above the upper limit of the normal lake level. This level of increase encroaches on areas such as Gardner Park, several yards and basements on Glen Road and wetlands along Lake Street. Based on State of Vermont Highway Map 163 contouring and Community-Panels from National Insurance program, the one-hundred-year storm water level increase will affect structures along the lakes edge throughout Newport City as noted above. However, other properties could be affected by secondary issues, such as windblown ice flows or high wind wave damage. The Clyde River flooding depth varies with distance back from the mouth of the river. There are several homes in the area of Tributary Number 1 entering the Clyde River near Cross Section L that are in danger of flooding (*2015 Newport City Municipal Plan*).

All the planning area has the potential to be affected by flooding. Although, comparatively, the city has remained insulated from the catastrophic flood damage that the state has seen in the last ten years, the community continues to have concerns about impacts of future flooding.

Fluvial Erosion

Erosion occurs on a consistent, but small-scale, basis within the riparian corridor of the City s

streams and rivers. This is a part of normal natural processes and as such is necessary for the proper functioning of the ecosystem of these waterways. However, fluvial erosion on a large scale can damage stream banks and undercut infrastructure such as roads, bridges and culverts as well as agricultural land and structures, causing severe damage. Fluvial erosion on a large scale can cause stream bank collapses, which are generally classified as landslides. Most flood damage is associated with fluvial erosion rather than inundation. The *2018 Vermont State All-Hazards Mitigation Plan* contains the following discussion of fluvial erosion:

> *"In Vermont, most flood-related damage is due to fluvial erosion. Erosion occurs when the power of the flood (i.e. the depth and slope of the flow) exceeds the natural resistance of the river's bed and banks. Rivers that have been overly straightened or deepened may become highly erosive during floods, especially when the banks lack woody vegetation, or when the course river bed sediments have been removed. In areas where rivers are confined due to human activity and development, they have become steeper, straighter, and disconnected from their floodplains. The more trapped the river is, the greater power it will gain, which eventually results in a greater degree of damage to critical public infrastructure such as roads and stream crossings, as well as homes, businesses, community buildings and other man-made structures built near rivers. Fluvial erosion is also increased downstream when all the eroded materials (i.e. sediment and debris) come to rest in a lower gradient reach, clog the channel, and cause the river to flow outside its banks. When severe enough, fluvial erosion can also be the cause of Landslides (see: Landslides). The land area that a river accesses to meander and overtop its banks to release flood energy without excessive erosion is known as the River Corridor. A river corridor includes the meander belt of a stream or river and a buffer of 50'. The River Corridor, as defined in Vermont statute, is: the land area adjacent to a river that is required to accommodate the dimensions, slope, planform, and buffer of the naturally stable channel and that is necessary for the natural maintenance or natural restoration of a dynamic equilibrium condition, as that term is defined in section 1422 of this title, and for minimization of fluvial erosion hazards, as delineated by the Agency of Natural Resources in accordance with river corridor protection procedures."*

The Vermont Agency of Transportation (VTrans) applies the term "scour critical" to stream crossing structures especially vulnerable to streambed scour—the undermining of bridge supports by water action and erosion. A spreadsheet database is maintained by VTrans and continually updated by the Bridge Inspection Program. Structures inspected are only those of 20 ft. or longer owned by a municipality or the state. The scour critical rating is based on the structure itself, and does not consider debris jams, outflanking, channel change, or other issues commonly associated with fluvial erosion. Water supply source and distribution systems are also endangered by fluvial erosion. Many water distribution systems involve buried pipes that cross streams, which are vulnerable to fluvial erosion. In December 2014 the Vermont Department of Environmental Conservation (DEC) released the "Flood Hazard Area and River Corridor Protection Procedures" guide, outlining specific actions and considerations. While fluvial erosion potential has not been addressed as of yet, new data is constantly becoming available, such as the recently released River Corridors Base Map by the Agency of Natural Resources. While Newport City's exposure is limited by the length and character of the rivers within the city, the potential for significant property damage under unique circumstances is a concern. Therefore, new river corridor data will be evaluated as it becomes available to identify any potential

problem areas and any measures that will minimize or eliminate the impact of fluvial erosion shall be implemented.

High Hazard Dams

The Clyde River Hydroelectric Project, owned and operated by Great Bay Hydro Corporation includes four facilities, one of which; the Newport City Power Plant, is in the City of Newport. The plant houses three hydroelectric generators with a combined output capacity of 4.0 MW. Two penstocks extending from the Newport dam feed the Newport plant hydroelectric generators. The Newport dam is located in the town of Derby at the outlet of Clyde Pond. The water discharge from the Newport plant feeds the Clyde River that empties into Lake Memphremagog approximately one mile downstream from the plant. The hydroelectric project is licensed by the Federal Energy Regulatory Commission. There was a fifth facility, also located in the city but this dam, located at river mile 1.5, failed in 1994 and is no longer operating. According to the *2013 Vermont State All-Hazards Mitigation Plan*, "*The VT Agency of Natural Resources (ANR) Dam Safety Program maintains an inventory of 1205 dams (including 85 ANR owned dams) with impoundments greater than 500,000 cubic feet*". Failure of any of these dams could result in significant downstream flooding. A dam breech remains the biggest threat to the municipal sewer system. There have been no recent or historically relevant flooding events associated with the failure of any dam in *Vermont.* However, as stated in FEMA Guide P-956 "Living with Dams: Know Your Risks" (2013): *"Although dam failures are infrequent, the impacts can be catastrophic, often far exceeding typical stream or river flood events."* The Emergency Action Plan (EAP) for the Newport Dam describes risk for two scenarios:

1. **Fair Weather Dam Break**

   Based on mapping and tabular information for this break, the lake level will not be significantly affected. Areas including Clyde Street, the Fire Station and the Treatment Facility will see flooding and flow will continue through Gardner Park. The flooding will require local evacuation within these areas and result in flooded roads.

2. **Flood Failure Dam Break**

   Based on mapping and tabular information for this break, the lake level at the mouth of the Clyde will be significantly higher. The flood will now have an impact on structures on the west side of Hill Street, and the north side of Lake Street. It will now inundate areas of the Lakeshore Plaza and East Side Restaurant. Lower Main Street in the area of the railroad crossing may see flooding. The flooding will require local evacuation within these areas and result in flooded roads.

The total inundation area follows the Clyde River from Clyde Pond to the Lake, bulging northward between Hill St. and Western Ave. and where Upper Clyde St. meets Hill Street.

Pandemic

Pandemic planning in Vermont appears to ebb and flow. Following the H1N1 Virus Outbreak in 2009-2010, increased emphasis on pandemic planning was seen across the state. From 2010 to 2019 however, without another major U.S. event, emphasis on pandemic planning diminished.

While Vermont, due to its rural nature, has some level of protection from national infection rates during a pandemic, the financial implications experienced during the COVID-19 pandemic in 2020 hit the state extremely hard.

COVID-19 is a new disease, caused by a virus not previously seen in humans. COVID-19 is highly contagious and people with COVID-19 who do not have any symptoms can spread the virus to other people. On March 13, 2020, President Trump declared a nationwide emergency pursuant to Sec. 501(b) of Stafford Act to avoid governors needing to request individual emergency declarations. All 50 states, the District of Columbia, and 4 territories have been approved for major disaster declarations to assist with additional needs identified under the nationwide emergency declaration for COVID-19. Additionally, 32 tribes are working directly with FEMA under the emergency declaration. FEMA announced that federal emergency aid has been made available for the state of Vermont to supplement the state and local recovery efforts in the areas affected by the Coronavirus Disease 2019 (COVID-19) pandemic beginning on January 20, 2020 and continuing. Public Assistance federal funding was made available to the state and eligible local governments and certain private nonprofit organizations on a cost-sharing basis for emergency protective measures (Category B), including direct federal assistance under Public Assistance, for all areas in the state of Vermont affected by COVID-19 at a federal cost share of 75 percent.

In early 2020, there was a quick return to the tenets of effective pandemic planning. Preparing for hospital surge, high death rates and the medical equipment necessary for both patients and health care workers are examples of the state's early focus. Public information and guidance on safety, isolation, travel and quarantine also became extremely important while mitigating the pervasive economic consequences of reducing work forces, sending students home and closing businesses. Additionally, Vermont had to consider the implication of, and work to control, the immigration of people from other states. Both infection risk and taxing of local resources were the main concerns associated with this real consequence of the pandemic.

While the Northeast Kingdom remained insulated from infection rates (and subsequent deaths) seen elsewhere in the state (e.g., Burlington), issues of border closure, implementing safety protocol and procedures and economic resilience were experienced in every community, including Newport City. The city has received public assistance for the COVID-19 disaster 4532. As of December 2nd, 2020, there have been 5015 cases, 79 deaths and 2951 recovered in the state. Given the density of population, correction facility, and hospital, Newport City has increased vulnerability to an infectious disease event and has an increased planning burden related to mitigating spread while maintaining critical operations during an event. *(https://www.healthvermont.gov/response/coronavirus-covid-19/current-activity-vermont#town*

SECTION 3: RISK ASSESSMENT

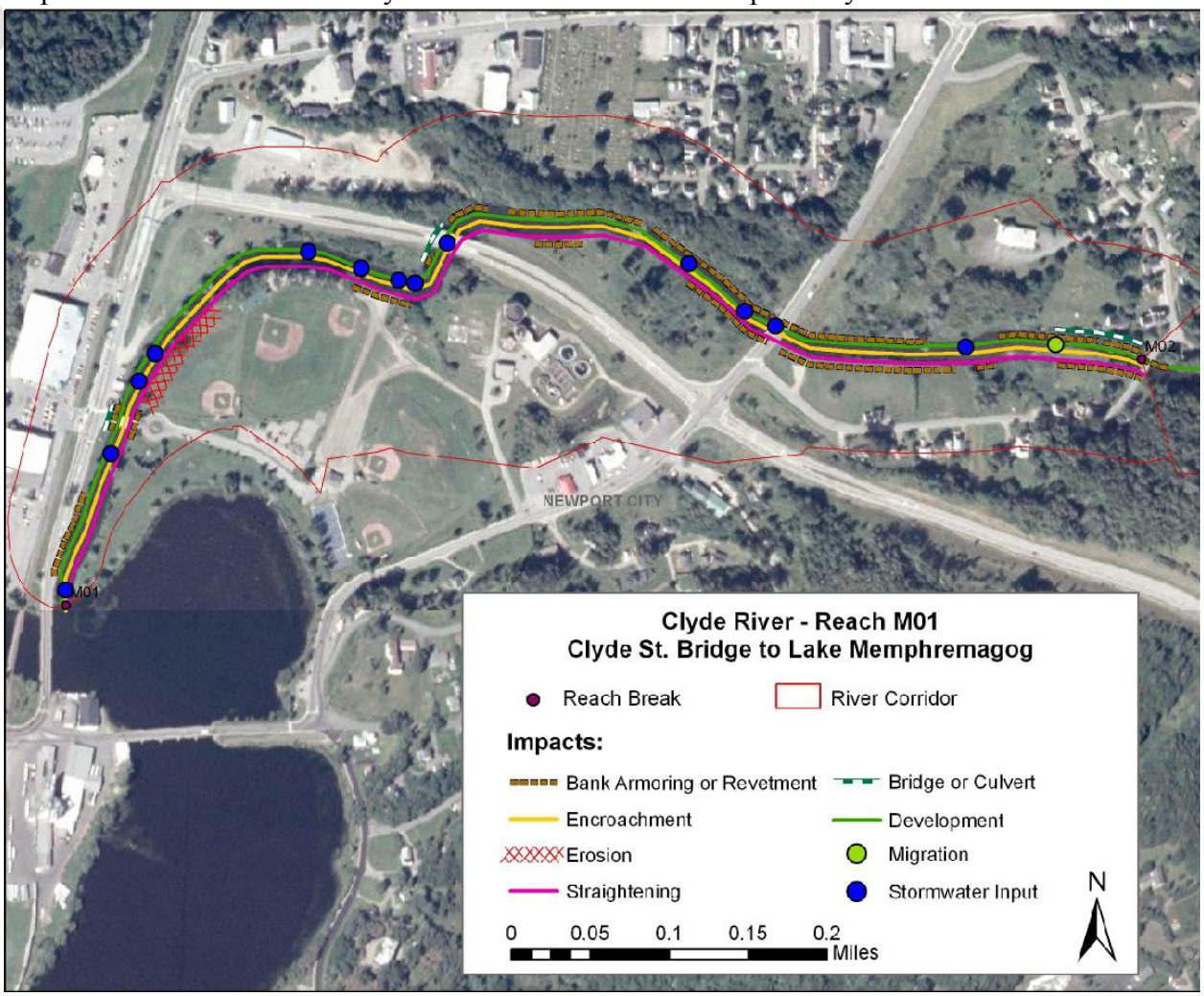
3.1 Designated Hazard Areas

Flood Hazard Areas
According to the latest NFIP insurance report, Newport City has no properties in the A or V-Zones. During times of flood the sluiceways of the dam shall be sufficiently opened to ensure that the outflow from the lake shall be unobstructed by the dam, the flood water drawn off and the water level in the lake reduced to the normal regulated level as rapidly as possible.

Low lying areas of Newport are subject to periodic flooding caused by overflows of the Black River and Clyde River and their tributaries. The city is also subject to lacustrine flooding by Lake Memphremagog. The most frequent flooding occurs in early spring as a result of snowmelt and heavy rains, but flooding has historically occurred in every season. Flooding has also occurred due to debris collection and ice jams. Notable floods in this area have occurred in several years. These storms brought significant damage to infrastructure including roads, culverts and bridges. The majority of damage from these storms was caused by the storm and not directly related to flooding from the river corridors or the lake. The lake water level from the one-hundred-year storm is 686' which is three feet above the upper limit of the normal lake level. This level of increase encroaches on areas such as Gardner Park, several yards and basements on Glen Road and wetlands along Lake Street. Based on State of Vermont Highway Map 163 contouring and Community-Panels from National Insurance program, the one-hundred-year storm water level increase will affect structures along the lakes edge throughout Newport City as noted above. However, other properties could be affected by secondary issues, such as windblown ice flows or high wind wave damage. The Clyde River flooding depth varies with distance back from the mouth of the river. There are several homes in the area of Tributary Number 1 entering the Clyde River near Cross Section L that are in danger of flooding *(2015 Newport City Plan)*. The Appendix A map shows the designated flood hazard areas and the river corridor with associated structures.

Fluvial Erosion Hazard Areas
The Clyde River drains an area of 144 mi2 extending from the river's headwaters in the towns of Brighton and Morgan to its mouth at the City of Newport. The watershed includes several large tributary watersheds, most notably the Pherrins River and Echo and Seymour Lake Outlets. Numerous large lakes are found within the watershed, including Seymour Lake (1777 acres), Lake Salem (788 acres), and Island Pond (608 acres). Nearly 69% of the Clyde River Watershed is forested, however, the lower watershed contains a higher population density; agricultural land use occurs heavily throughout this region and urban land use is very concentrated in Derby and Newport City as well as West Charleston and around Lake Salem. These land uses impact the Clyde River and tributaries by decreasing soil infiltration, increasing sediment inputs, and increasing peak flood levels. East of Route 5 in Gardner Park has seen erosion damage as is noted in the Phase 2 assessment summary map below.

Map 3-1: Phase 2 results for Clyde River Reach M01 in Newport City



The Black River travels for 4.6 miles (Sections M02-M01) through floodplain forest before draining into Lake Memphremagog. While extensive work on stream geomorphology has been accomplished for the Black River with many areas having had Phase 2 assessments completed, the small portion of the river through Newport City has not received a Phase 2 assessment. The M01 area has an "E-Type" Stream Reference designation with a channel width of 113', channel slope of less than 2%, 1.52 sinuosity rating, a very broad valley, sand streambed substrate and Dune-Ripple bedform (*source: https://anrweb.vt.gov/DEC/SGA/finalReports.aspx)*.

Repetitive Loss Properties

There are a total of 6 policies in force amounting to a total coverage of $2,800,000. There have been four claims since 1978 with a total amount paid of $44,551.00. All four have been "BCX Claims" (outside the designated flood hazard area). No further information was available on the repetitive loss property.

3.3 Previous FEMA-Declared and Non-declared Disasters

Using PA funding as an indicator for the magnitude of damage the City has sustained during declared disasters, Newport City has remained insulated from major disaster events that have resulted in drastically more damage and financial requirements for other parts of state, even neighboring towns. In the June of 2008, severe weather resulted in FEMA Declaration 1778 for areas east of Orleans County. At various locations in Newport City, repairs were necessary in 8 separate road and street locations totaling $41,267 for equipment, labor and materials.

Table 3-1 City of Newport, FEMA-declared disasters and snow emergencies, 2001-2022

DR	Date	Type
1428	07/12/2002	Severe Storm
1995	06/15/2011	Severe Storm
3167	04/10/2001	Snow
4022	09/01/2011	Hurricane
4165	01/29/2014	Severe Winter Storm
4532	03/13/2020	Pandemic

Table 3-2: City of Newport, FEMA-declared disasters and snow emergencies, 2004-2022

Disaster Number	Application Title	Applicant ID	Damage Category Code	Project Amount	Federal Share Obligated	Total Obligated
3167	EMERGENCY PROTECTIVE MEASURES (SNOW REMOVAL ASSISTANCE)	019-48850-00	B - Protective Measures	$10,220.77	$7,665.58	$8,131.64
4163	NEWPA01 city Wide Debris Removal	019-48850-00	A - Debris Removal	$37,498.08	$28,123.56	$28,123.56
1428	ROADS AND CULVERTS	019-48850-00	C - Roads & Bridges	$10,537.24	$7,902.93	$8,383.43
1428	EMBANKMENT REPAIR	019-48850-00	C - Roads & Bridges	$7,417.16	$5,562.87	$5,901.08
1559	GRAVEL ROAD REPAIR	019-48850-00	C - Roads & Bridges	$9,805.88	$7,354.41	$7,801.56
1559	ROAD AND SHOULDER REPAIR	019-48850-00	C - Roads & Bridges	$2,839.00	$2,129.25	$2,258.71

Sources: City Records, Project Worksheets, financial report forms and award letters.

3.3 Future Events

Although estimating the risk of future events is far from an exact science, the Planning Team used best available data and best professional judgment to conduct an updated Hazards Risk Estimate analysis, which was subsequently reviewed and revised by City officials in 2014. This analysis assigns numerical values to a hazard's affected area, expected consequences, and probability. This quantification allows direct comparison of very different kinds of hazards and their effect on the City and serves as a method of identifying which hazards hold the greatest risk based on prior experience and best available data. The following scoring system was used in this assessment.

Area Impacted, scored from 0-4, rates how much of the municipality's developed area would be impacted.

Consequences consists of the sum of estimated damages or severity for four items, each of which are scored on a scale of 0-3:

- Health and Safety Consequences
- Property Damage
- Environmental Damage
- Economic Disruption

Probability of Occurrence (scored 1-5) estimates an anticipated frequency of occurrence.

To arrive at the overall risk value, the sum of the Area and Consequence ratings was multiplied by the Probability rating. The highest possible risk score is 80.

Natural Hazards

According to the updated Hazard and Risk Estimation for Newport City, the following natural hazards received the highest risk ratings out of a possible high score of 80:

- Severe Winter Storm (40)
- Extreme Cold (36)
- Flooding (48)
- Extreme Heat (36)
- Drought (36)
- Pandemic (33)

While flooding is likely to have a significant impact over a smaller area, severe winter storms tend to affect the entire City and are more common, hence the higher rating. While Newport has minimal fluvial erosion hazard areas along stream banks, high winds are more likely to result in property damage on the lake shoreline. While the June 4th, 1995 fire did not impact City property, it did provide a benchmark on the magnitude of damage and cost associated with a multi-structure fire. In association, high winds would greatly exacerbate the spread of fire. For this update, technological and societal hazards have been removed from the plan. This is in line with FEMA guidance on best practices to maintain focus on natural hazards.

Table 3-3: Natural hazards risk estimation matrix

Newport City Hazard & Risk Analysis: NATURAL HAZARDS		Drought	Flooding	High Winds	Landslide	Lightning	Extreme Cold	Pandemic	Winter Storm	Extreme Heat
Area Impacted										
Key:	0 = No developed area impacted									
	1 = Less than 25% of developed area impacted									
	2 = Less than 50% of developed area impacted									
	3 = Less than 75% of developed area impacted									
	4 = Over 75% of developed area impacted	2	4	1	1	1	1	4	4	3	4
Consequences										
Health & Safety Consequences										
Key:	0 = No health and safety impact									
	1 = Few injuries or illnesses									
	2 = Few fatalities or illnesses									
	3 = Numerous fatalities	1	1	1	0	1	1	1	3	1	2
Property Damage										
Key:	0 = No property damage									
	1 = Few properties destroyed or damaged									
	2 = Few destroyed but many damaged									
	3 = Few damaged but many destroyed									
	4 = Many properties destroyed and damaged	2	2	1	1	1	1	1	1	1	1
Environmental Damage										
Key:	0 = Little or no environmental damage									
	1 = Resources damaged with short-term recovery									
	2 = Resources damaged with long-term recovery									
	3 = Resource damaged beyond recovery	2	2	1	2	1	1	2	1	1	1
Economic Disruption										
Key:	0 = No economic impact									
	1 = Low direct and/or indirect costs									
	2 = High direct and low indirect costs									
	2 = Low direct and high indirect costs									
	3 = High direct and high indirect costs	2	3	1	1	1	1	1	2	2	1
Sum of Area & Consequence Scores		9	12	5	5	5	5	9	11	8	9
Probability of Occurrence										
Key:	1 = Unknown but rare occurrence									
	2 = Unknown but anticipate an occurrence									
	3 = 100 years or less occurrence									
	4 = 25 years or less occurrence									
	5 = Once a year or more occurrence	4	4	4	4	1	2	4	3	5	4
TOTAL RISK RATING										
	Total Risk Rating = Sum of Area & Consequence Scores x Probability of Occurrence	**36**	**48**	**20**	**20**	**5**	**10**	**36**	**33**	**40**	**36**

3.4 Hazard Summary

In comparison to other areas of the NEK and state, Newport City remains relatively insulated from the previous natural disasters than have impacted Vermont as a whole. While the opportunity for a major transportation incident to isolate parts of the city from rescue and healthcare services, there is no prior event to estimate the likelihood of an occurrence. With the increase in crime rates, unemployment level and other state-wide trends, addressing the unique relationship that exists between the economic resilience of the community, crime, social services, employment opportunities and their influence on natural disaster mitigation, response and recovery remains a challenge and priority for Newport City. Additionally, the impact of the COVID-19 pandemic and climate change have created new concerns and opportunities for the city to support resilience through actionable strategy during the next planning cycle.

SECTION 4: VULNERABILITY ASSESSMENT

Vulnerability refers to the potential impact of a specific loss related to an identified risk. While the loss of any one facility would cause a disruption in city services and operations, the overall vulnerability is low. There are roads, bridges and culverts vulnerable to flooding and those are identified below. Loss of equipment function for the highway department is a vulnerability for the city but the risk is not due or predicted to be a result of a disaster, merely, the required maintenance expected of highway-related machinery. For this section of the plan, the planning team looked at prior history and worst-case scenarios. The primary vulnerability for the entire planning area remains transportation-related infrastructure damage due to flooding.

Of the profiled hazards, the following vulnerability rating (high, moderate, low) is given below. This vulnerability rating is based on the disaster case history for the city and when the greatest financial impact was seen due to the disaster. The specific vulnerability to the population as a whole or any specific sub-population (e.g., elderly) is subjective because there is no historical data to rank vulnerability to health and safety of residents, workers or travelers.

Severe winter/ice storm: Moderate
Summary: While snow and ice events are distinct hazards, the likelihood of these two hazards occurring at a level of concern is considered equal. While a major ice event can have catastrophic consequences for the entire planning area, these events are rare. While all structures are vulnerable to major snow loads, there is little evidence to support concern over structure failure due to snow loads on roofs, ice on gutters, etc. City snow removal equipment is vulnerable to damage with greater use, especially during emergency situations as well as road damage from plowing. Populations caught outdoors, commuting or working outside during a serve winter storm are more vulnerable to cold-related injury and/or snow related accidents but winter comes every year and residents, and the city are accustomed to making intelligent decisions regarding safety and protection of infrastructure. Special populations (e.g. aging, disabled, etc.) are more vulnerable in terms of mitigating structure loads, hazardous travel and relocating to safety.

Extreme temperature and drought Moderate
Summary: Recent evidence shows that greater extremes in temperature and overall weather fluctuation are occurring with increased frequency. A long-duration cold snap can cause significant damage to structures due to bursting pipes and the residential health and safety considerations include factors related to financial resources, fuel supply, sheltering, provisions and employment. Extreme heat is a risk for the city because of the health and environmental variables associated with this growing threat. Drought is an additional concern that can create financial, environmental, and health risks for the planning area.

Flooding: Moderate
Summary: The risk of a severe flood event for the region is likely but the city, despite the lake and rivers, critical dam, and municipal water/sewer has not experienced the level of flood-related damage during severe events as other areas in the county. Flooding impacts the planning area by inundation damage to structures, which are considered well-below the FEMA flood hazard elevation and roadway drainage structures. Most of the damage is to road surfaces, drainage structures (culverts, ditching) and driveways. Roadways are also an issue for municipal road crews in each jurisdiction when they become inundated and cut off traffic.

Pandemic: High
Summary: Not only is the COVID-19 current during the drafting of this plan but it will likely remain active, at very least, over the 2022-2023 flu season. While Vermont has remained relatively insulated from the worst-case scenarios already seen in other states in regard to infection rates, there have been significant financial impacts for the region and state. There are several important considerations for the city. Issues such as continuity of operations for critical functions should an infection rate compromise staffing, tax revenue reductions from failure to pay on a large scale to how a major storm event could compromise pandemic response (e.g., sheltering operations and resource allocation).

Table 4-1: Vulnerability Summary Table

Hazard	Vulnerability	Extent (Storm Data from most severe event)	Impact (economic/health and safety consequence)	Probability
Flood	Culverts, bridges, road infrastructure, sewer, and water. Newport City has no properties in the A or V-Zones	The greatest 24-hour rainfall record for immediate region occurred in late October 31st, 2019 at 3’’. The greatest level of precipitation in any month occurred in August 2011 at 11’’ No detailed data was	DR 4163 was the most costly at nearly $40,000. No extent data as available for this event	Moderate

		available for fluvial erosion damage in the city in terms of numbers of acres lost during each event.		
Extreme Cold/ Snow/Ice Storm	The entire planning area is vulnerable, including road infrastructure, city and privately-owned buildings, utility infrastructure	Snowfall has varied, from a few inches to over a foot or more. Heavy snow and wind may down trees and power lines. Snow/ice contributes to hazardous driving conditions.	For roof collapse: monetary damages will depend on each structure but, collapse of barn roof is often a total loss. This does not include the loss of livestock. Collapse of a house roof may be at a 50% loss. For car crashes due to poor driving conditions: minimal damage to vehicle to totaled vehicle and operator injury. Health impacts could vary significantly. Loss of energy or communication capabilities may occur and impede recovery.	High
Pandemic	The entire planning area is vulnerable in both health and financial stability	COVID-19 has far-exceeded severity of 2009-2010 HINI Pandemic	2020 COVID-19 has resulted in the greatest infectious disease-related financial consequence for the planning area in history	High

Extreme heat/drought	The entire planning area is vulnerable in both human/environmental health and financial stability	Newport City, along with the northeast portion of Vermont, has the highest concentrated heat illness vulnerability and heat emergency ratings	Between 2000 and 2017, the number of recorded days per year with a daily temperature high greater than or equal to 85°F peaked during the 2016 summer at 45 days, closely followed by the summer of 2015 at 41 days in Burlington. A heat wave across Vermont in late July 2022 resulted in seven consecutive days of temperatures above 80°F in Newport from July 20 through July 26. Maximum temperature reached 89°F on July 21st and July 24. At the time of this plan's update, **52.36%** of Orleans County is in abnormally dry conditions. Crop growth is stunted; planting is delayed. Fire danger is elevated when this occurs.	

4.1 Critical Facilities

The City of Newport owns 39 parcels of land and associated buildings. The Center for Disaster Management and Humanitarian Assistance defines critical facilities as: "Those structures critical to the operation of a community and the key installations of the economic sector." Table 4-1 identifies critical facilities in Newport City along with total properties owned with estimated dollar value (some values may not consider the most recent changes).

*Table 4-2: Critical facilities (**in bold**) and other property owned by the City of Newport (floodplain areas in italics)*

Facility Type	Location	Acreage	Dollar Value
City Garage	Union St.	5.52	1,127,800
Sewer Pump Station	Union St.	1.55	24,600
Sewer Pump Station	Bluff Rd.	19	12,100
Prouty Beach	Prouty Beach Rd.	29.00	956,800
City Water Reservoir	East Main St.	2.8	246,800

City School	Sias Ave.	7.67	3,861,200
Cemetery	East Main St.	5.80	79,300
City Dock and Gateway	Fyfe Drive	.97	801,500
City Park	Railroad Square	.74	22,500
Gardner Park	Gardner Park Rd.	20.00	1,602,400
City Sewer Plant	TP Lane	7.00	2,146,000
Fire Station	Western Ave.	1.00	440,400
City Hall	Main St	1.4	740,200
Library	Main St	.25	388,900
City Parking Lot	Coventry St.	.25	86,100
City Parking Lot	Central St.	.22	28,100
City Parking Lot	Central St.	.21	28,600
City Forrest	Highland Ave.	9.90	15,600
City Water Tower	Mountain View Drive	2.21	621,500
Recycling Ctr.	Coventry St.	28.51	67,600
City Wells (2)	Coventry St.	8.74	53,600
State Boat Launch **	Coventry St.	.41	27,200
TOTAL LAND VALUES 13,614,600 (Vacant Land not included in this table)	(Source: Newport City 2013/14 Tax Book)		
** Leased to the State of Vermont			

Based on FEMA PA funding for Newport City, the above Critical Facilities and property owned or leased by the city does not seem to be at high, or even moderate risk to the profiled hazards. As mentioned, the city remains insulated from property damage during a declared disaster. This has continued through the last planning phase. Evidence does not suggest that property in or near the mapped floodplain are at any higher risk of flooding or flood-related damage during declared or non-declared disasters. While the city has waterfront property, there are no repetitive losses from flood damage and while there are erosion concerns and economic vulnerability inherent to the management and zoning regulations along waterfront areas, the city does not consider its lakefront property a vulnerability as much as an opportunity for reaching economic and social goals to support the overall resilience of the city. Using the flooding events of 2011 as a benchmark, the city did not sustain flood damage to property to an extent to be classified as a high vulnerability along its waterfront or in other areas. While areas of the park do, consistently retain standing water, there is no resulting structural damage. The lake serves the city more as protective basin during high levels and rain than an area of threat. Unique to the region, the city does have municipal water and sewer systems and as with any municipal service, protecting these systems from all hazards remains a priority.

4.2 Infrastructure

4.2.1. City Highways

The following is a statistical overview of roads in the City of Newport. These tables show the range of road types within the city, from highways to unpaved roads. The different road types

have different hazard vulnerabilities. Unpaved roads are more vulnerable to being washed out in a flood or heavy storm, while traffic incidents are more likely to occur on large, arterial roads.

Table 4-3: City highway mileage by class, City of Newport

Class 1	Class 2	Class 3	State Hwy	Fed Hwy	Interstate	Total 1, 2, 3, State Hwy
6.637	6.640	23.03	1.289	0	0	37.596

Source: data derived from VTrans TransRDS GIS data

4.2.2. Bridges, Culverts, and Dams

Bridges:
There are six bridges maintained by the City Public Works Department and one maintained by the railroad. Two of which connect two parts of the city, the former village of Newport with the former village of West Derby. Those two are the bridges on Route 5 (Causeway), and the Long Bridge (Veteran Memorial) connecting Route 5 to Mt. Vernon Street. The other three are the Gardner Park Bridge, Western Ave. Bridge, Clyde Street Bridge and the Crawford Farm Bridge. The Long Bridge was completely replaced in 2013 and the city was responsible for 10% of the cost and the Western Ave. was completely repainted in 2015. Below are the bridges in Newport City.

Table 4-3a: Bridge Identification with year built

Bridge #2: City Class 2 State Highway #8 - Western Avenue Bridge, built in 1970.
Bridge #6: Crawford Farm Road Bridge at Clyde Pond Dam, built in 1988
Bridge #7: Clyde Street Bridge at intersection with Hill Street, built in 1956.
Bridge #8: Bluff Road Multi-plate pipe arch structure "The Tube", built in 1969
Bridge #9: City Class 2 State Highway #11- Mount Vernon Street Bridge "Long Bridge" built in 2013
Bridge #11: Gardner Park Road Bridge built in 1950
Bridge #00175: City Class 2 State Highway #1 - The Causeway Bridge built in 1981

Culverts:
Culverts rated with most importance are located on Lake Rd., Coventry Rd., Western Ave., and East Main Street. There are 148 Culverts in Newport City. 58 of these are rated in poor condition with many on Glen Rd. (15) and Lake Rd. (14). 17 are rated critical on Billings Pt. (2), Clyde St. (2), Coventry St. (4), Glen Rd. (5), Indian Point, Memphremagog VWS, Mosher Dr. and Union St. all have 1. 8 are critical with 6 on Clyde St., 1 on Bluff and 1 on Lake Rd. VT Culverts offers an interactive mapping service and specific details on the specific locations of each culvert (https://vtculverts.org/).

Dams:
The Clyde River Hydroelectric Project, owned and operated by Great Bay Hydro Corporation includes four facilities, one of which; the Newport City Power Plant, is located in the City of Newport but Great Bay Hydro is responsible for the facility.

4.2.3. Water, Wastewater and Natural Gas Service Areas

Water:
Newport has the great fortune of having a clean and abundant water supply. Public water is supplied by two wells on Coventry Street, both from the same aquifer. The idea of two wells came about when the need for cleaning our then only well took longer than expected and the water reserve was nearly depleted. The second well was drilled and online in 2004. Both wells have the capacity to supply approximately 1.4 million gallons per day (gpd). The current average use per day is 600,000 gpd, with the highs of 900,000 gpd. The water is chlorinated and fluorinated at the wellsite. The city has a source protection plan, better known as the Wellhead Protection Area (WHPA) which was written and designed in 1996 and is updated and provided to the State of Vermont for their approval every five years. The city feels that with the two wells it does not need to look at alternative sites for another water supply. In 1999 the city connected to the town of Derby's water line along the Newport Derby Road. This was done to enable the City Center Industrial Park to have enough water pressure for sprinkler systems and it gave the city an emergency backup water supply. For non-emergency situations we have a water allocation of 10,000 gpd with the Village of Derby Center.

The city's Water Department has seen some major improvements in recent years. The city's water reservoir was completely cleaned in 2018. This is done approximately every ten years. In 2004 the wetted area of the water tower was completely cleaned and painted. The water tower was painted during 2018. The biggest improvement was that in 2007 the city Water Treatment Plant was finished and went online. This plant was federally mandated because the allowable arsenic levels were lowered nationally. Newport's levels were at 18 parts per billion (ppb) and now are at or below the mandated 10 parts per billion (ppb). In August 2019 the plant tested at 7 parts per billion. The plant was built at the current well site location. The cost of this project was approximately 2.5 million dollars and is being paid for by the city.

Wastewater:
Ensuring the City's water and sewer capacity is adequate and kept up-to-date with commercial and residential use standards is of utmost importance. The city has continued to invest in upgrades to its water treatment and reservoirs to assure it remains so. The city's wastewater system is similarly well maintained and operates at just over 50% of its design capacity – a considerable margin to support more growth. The city has also separated its stormwater management system from the sewer system, supporting better water quality for the lake and further reducing wastewater demands. Recent wastewater upgrades at Prouty beach improve recreational facilities and heighten stewardship of the lake. More upgrades are planned. Installing sewer lines along some of the significant streets not presently served by sewers may become necessary to facilitate development. The Palin Farm parcels, for example, will need to be served by off-site water. This is a $4.9 million infrastructure investment, and the City is exploring funding mechanisms, including the use of ARPA funds. There are also some outlying areas on the Bluffs that will require a pump station. Both infrastructure upgrades would be developer-funded.

Newport has separated 99% of their storm drains from the sewage lines and this has resulted in a significant reduction of flow to the plant during storms. Approximately 50% of the city's sewer lines have been replaced as part of the ongoing street reconstruction program. During fiscal year 2009 the city installed additional sewer lines at the Prouty Beach Campground. All fifty-two camping sites have on-site sewer availability. In 2011 we replaced 260 feet of sewer line that was seventeen feet deep along the Clyde River on Upper Clyde Street. During 2012 the city designed and installed an entire sewer system on Spring Street and Indian Point Street to change the direction of wastewater flow. This enabled elimination of a sewer overflow adjacent to the Clyde River along with the elimination of a sewer line across the Clyde River. The city's Wastewater Treatment Plant with its excellent operation record stands ready to handle what the foreseeable future brings it.

Natural Gas:
There are propane service providers in the city but they are not affiliated with the City.

4.2.4. Electric Power Transmission Lines and Telecommunications Land Lines

Vermont Electric Cooperative of Johnson, Vermont provides electric distribution services to the City of Newport. Vermont Electric Cooperative (VEC) is Vermont's second largest utility serving over 35,000 customers, primarily located in Northern Vermont, extending along the Quebec border, from the New Hampshire border and to the Lake Champlain Islands in the west. Vermont Electric Company (VELCO) headquartered in Rutland, Vermont is responsible for providing high voltage (120 kV or larger) transmission service to the entire state of Vermont. The transmission system that provides service to Newport is an integral part of the statewide transmission grid. However, the northern Vermont territory has the unique capability of interconnecting with the Hydro-Quebec system, which is not synchronized with the New England power grid (NEPOOL). This capability of switching between the New England and Quebec bulk power delivery systems gives VEC the ability to negotiate favorable purchase power agreements on both sides of the U.S./Canadian border, as well as increasing the reliability of a continuous supply of power. The unique ability to interconnect the northern Vermont transmission system to either the Hydro-Quebec system or the New England Power grid allows VEC to provide power to its customers with a significantly higher level of reliability than its counterparts to either the north or south. When system disturbances occur on either the Hydro-Quebec system or the New England power grid, VEC is able to switch its source of power supply to the unaffected power grid without loss of power to customers. Consequently, power outages due to transmission system disturbances are rare for VEC's northern Vermont customers (*2015 Newport City Plan*).

4.3 Estimating Potential Losses in Designated Hazard Areas

According to the latest NFIP insurance report (2015), Newport City has no properties in the A or V-Zones. The Median Housing Value (MHV) for Newport City is $134,600. The Equalized Value for all properties in Newport City is approximately $307,107,000. If 1/10th of one percent of all structures were to be damaged by future flooding or other hazards, the value of the damage would be approximately more than $307,107. There have been 4 repetitive loss claims for the

same location since 1978 but all claims have been “BCX Claims” and out of the designated hazard area. Additional information concerning the four historic claims were attempted during the planning process but no further information was available.

4.4 Land Use and Development Trends Related to Mitigation

The City of Newport Bylaw contains Section 433B Flood Hazard Area Regulation - 433.01 Lands to Which This Bylaw Applies:

> *“This bylaw shall apply for development in all areas in the City of Newport identified as areas of special flood hazard on the current National Flood Insurance Program maps that are hereby adopted by reference and declared to be part of these regulations. Also included are 433.02 permit requirements, 433.03 base flood elevations, 433.04 review process, 433.05 development standards, 433.06 administrative duties, 433.07 variance process and 433.08 liability warning. Additionally, to determine what kinds of developments the city should plan for, it is first necessary to determine what overall benefits the city is looking for from development. The following three broad objectives summarize the city’s goals:*
>
> *1. Maximize the availability of good paying jobs.*
> *2)Enhance and improve real estate values while expanding the tax base and thereby minimizing individual property tax increases.*
> *3. Minimize adverse environmental impacts.”*

4.4.1. Future Development and Housing

The current Zoning Bylaws hold to the recommended practices under the NFIP and all continued compliance and participatory requirements are managed by the Zoning Administrator. As a participating community in the NFIP, the following graph represents the currently available information regarding properties with Flood Insurance (three residential, single family properties one 2-4 family property and 5 non-residential properties). There is one repetitive loss property in the city. The effective date for the city’s Flood Insurance Rate Map is 12/13/1977. The last claim was in the spring of 2011. The Administrative Officer (AO) enforces the flood hazard regulations, which are integrated with the City's zoning regulations. The AO receives and reviews permit applications and forwards for board review as appropriate. In accordance with FEMA requirements, the AO maintains records of all permits issued for development in areas of special flood hazard; elevations, in relation to mean sea level, of the lowest floor, including basement, of all new or substantially improved buildings; elevations, in relation to mean sea level, to which buildings have been flood proofed; flood proofing certifications; and all variance actions, including justification for their issuance.

The city was recently awarded a Bylaw Modernization Grant in the amount of $25,000.00 with a $2500.00 cash match. The ongoing efforts of the city to complete its Municipal Plan Update have uncovered the need for a more rigorous review of the current zoning and subdivision bylaws. Last adopted in early 2019, the current zoning bylaws include a host of regulatory provisions related to urban development and with the 2018 Waterfront and Downtown Master Plan which serves as a document for the revitalization of several neighborhoods and areas of the city, the opportunity for planning and mitigation efforts to align are planned for.

Table 4-4: NFIP Policies in Newport City

Community:	NEWPORT, CITY OF	**State:**	VERMONT
County:	ORLEANS COUNTY	**CID:**	500086

Overview | Occupancy | Zone | Pre/Post FIRM

	Policies in Force	Premium	Insurance in Force	Number of Closed Paid Losses	$ of Closed Paid Losses	Adjustment Expense
Single Family	3	$1,490	$567,000	0	$0.00	$0.00
2-4 Family	1	$62	$8,000	0	$0.00	$0.00
All Other Residential	0	$0	$0	0	$0.00	$0.00
Non Residential	5	$11,189	$2,050,000	4	$44,550.92	$2,055.00
Total	9	$12,741	$2,625,000	4	$44,550.00	$2,055.00

	Policies in Force	Premium	Insurance in Force	Number of Closed Paid Losses	$ of Closed Paid Losses	Adjustment Expense
Condo	1	$62	$8,000	0	$0.00	$0.00
Non Condo	8	$12,679	$2,617,000	4	$44,550.92	$2,055.00
Total	9	$12,741	$2,625,000	4	$44,550.00	$2,055.00

The City of Newport is one of Vermont's smallest communities in terms of area, however, the population density is one of the heaviest in the state. As such, it is important to plan for growth not only in terms of housing and other development with the remaining open land within the city's boundaries but include redevelopment of older existing regions. Industrial development continues to be a goal of the city. Union Street north of the Bluff Road continues to be an area of industrial and commercial development. The city's only heavy industry, Columbia Forest Products, a veneer mill, is located in this area. The city garage recently located in that area alongside the Newport Ambulance facility. Identification of major traffic arteries is important in planning future growth. The heavily traveled streets will need extra attention with respect to infrastructure. On the east side, these streets are Bluff Road, Union Street, Prouty Drive, Sias Avenue, Indian Point Street, Elm Street, East Main Street, Western Avenue, Clyde/Hill Streets, Mount Vernon St, Glen Road, the Causeway and the I91 access road. Crawford Farm Road could be included in this group. On the west side, the heavily traveled streets are: Main Street, Coventry Street, Third Street, Pleasant Street, Highland Avenue, West Main Street, Prospect Street, Lake Road and Airport Road. Attention to traffic flow is also important as residential development planned for the city progresses. At least three major developments are planned which will add to the tax rolls but will also increase demand for municipal services such as water and sewer. In the near term, the development that continues from Estates Drive will provide additional middle-income homes. Municipal hookups are already available. Alongside the Bogner building off the Lake Road, there are plans for additional senior housing on modestly sized lots. From 2002-2006, a rapid acceleration in property values seemed to have spurred renewed interest in many of these older apartment buildings. Many of the building owners renovated and improved the looks of these homes on both the inside and outside. As a result, the appearance of the older neighborhoods has improved over the past five years. The downtown area and development of the waterfront is a Designated Downtown the 2015 City Plan addresses the advantages associated with this designation.

<u>Housing</u>

The purpose for considering housing in planning is to evaluate the needs of the community today and into the future. Housing is an integral part of a healthy community. Safe, sound and affordable housing is a prerequisite for economic stability and growth. Housing must be judged both qualitatively and quantitatively. Newport City seeks to attract all housing types, especially affordable housing that will connect safely with schools, play areas, bicycle and pedestrian routes, and public transportation. 65% of Newport homes were constructed pre-1940. They are

characteristically wood frame with maintenance and repairs typical of older housing. Much of the older housing has been converted into multi-family apartments. New housing construction is increasingly located in the outskirts on land once valued for its agricultural value. Future housing is trending towards higher density multi-family
developments. This is resulting in the renovation and outright placement of much of the city's older downtown housing. Accessory apartments attached to single-family residences for senior family members are supported. Newport does a periodic review of its housing to ensure a sufficient stock for residents of all incomes and to be informed on the quality of that housing. Details on the housing count are available through the census data.

Development since the last approved has been minimal in terms of new structures and current zoning requirements related to flood resilience protects from increased risk for new structures. The city has seen an increase in property sales and change of use but this does not equate to a significant change in vulnerability to hazards.

SECTION 5: MITIGATION STRATEGY

The greatest advancement in mitigation planning the city has achieved is from the dedicated efforts of city officials and departments in assuring that operational and planning initiatives are robust, malleable, and ready to meet challenges. Experiences in responding to, and recovering from, the major disasters that have impacted the city supplements this advance. These disasters, have, to a large extent, redefined how the entire state views and approaches mitigation. Prior to 2020, several severe storms, including Irene, redefined emergency response, recovery, and mitigation. The COVID-19 pandemic proved how far reaching an infectious disease event can permeate into a community and the experience affords greater awareness of opportunity, vulnerability, and needs. The collective experiences resulting from these events has advanced mitigation planning to a great extent. The work of state agencies, including those devoted to health, community development, transportation, planning and emergency management have also changed and the opportunity for collaborative exchange and assistance remains an important facet of assuring optimal resilience. This plan update allows for a continuation of the systematic documentation of mitigation efforts in the next planning cycle. We feel that the implementation matrix captures specific progress in certain areas but more importantly, gives the town a guide from which all future action and updates can be based on.

5.1 **Newport City Goals and Policies that support Hazard Mitigation**

5.1.1. Flood Resilience and Community Goals

a. Continue operating standards for municipal water and sewer services.

b. Work with residents, NVDA, rescue services, Vermont EMS and the VEM to enhance efficiency and emergency operations.

c. Mitigate flood hazards in the most cost-effective manner possible.

d. Minimize the risk exposure and associated expense to taxpayers.

e. Ensure the city and its facilities are prepared to meet the demands of the next flood.

f. Ensure the city can receive the maximum outside assistance in the event of the next Federally declared disaster.

g. Identify and protect natural flood protection assets, including floodplains, river corridors, other lands adjacent to streams, wetlands, and upland forested cover.

h. Review and evaluate river corridor information to protect property and natural flood protection measures.

i. Consider adopting regulations that will protect erosion prone areas for additional development and encroachment.

5.1.2. Capital Improvement Goals

a. Provide services and facilities deemed necessary for the orderly and rational development of the city.

b. Continue to use the Newport City Capital Improvement Program. This five-year improvement program is a tool for the integration of financial and physical planning over a long span of time. The annual operating budget provides for the expenditures and revenues for a one-year period and should be closely integrated with the five-year capital budget. The capital improvement program is a detailed guide subject to changing conditions and needs. It is the basis to improve management control, identify capital needs, establish priorities, stabilize public expense for improvements, and assist city officials in acting timely.

c. Assure that the Public Works Department has enough funding to fulfill the goals of the following year and in adjunct, increase awareness on eligibility requirements for infrastructure projects under the Hazard Mitigation Grant Program (HMGP).

d. Continue to meet or exceed the VTrans Road and Bridge standards. Participate in regional Newport City trainings and Transportation Advisory Committee meetings to stay abreast of flood resilience measures for the city's roads and bridges.

e. Continue to update the city's transportation infrastructure information in the Vermont Online Bridge and Culvert Inventory Tool (vtculverts.org).

f. Replace undersized and failing culverts.

5.1.3. Public Participation Goals

a. Continue to solicit input regarding planning issues from city residents and from other entities which can help to offer solutions and insight into the problems the city faces both now and in the future via formal meetings and advertised opportunities for input.

5.1.4. Regulatory Devices Goals

a. Continue to use the Newport City Zoning Bylaw. The bylaws have been established to conform to, and be in harmony with, the Vermont Municipal and Regional Planning and Development Act. Any conflicts that are identified between the two documents will defer to Title 24 VSA, Chapter 117 as the prevailing authority.

b. Maintain and continue a Capital Expense Budget and Program for the purpose of ensuring that Newport's rate of growth does not outstrip the city's ability to pay for the associated necessary services such as roads, schools, police and fire protection, solid waste, etc. The City's capital expense budget is for roads and maintaining City property, departments and the water/sewer system.

c. Continue participation in the National Flood Insurance Program (NFIP) and reflect or exceed recommendations for best practices accordingly in Zoning Bylaws.

5.2. Land Use

5.2.1. Development Goals

a. Avoid and minimize the loss of life and property, the disruption of commerce, the impairment of the tax base, and extraordinary public expenditures and demands on public services that result from flooding related inundation and erosion

b. Ensure that the selection, design, creation, and use of development in hazard areas is reasonably safe and accomplished in a manner that is consistent with the public wellbeing, does not impair stream equilibrium, flood plain services, or stream corridor

c. Creation of a five-year Strategic Economic Development Plan in collaboration with a group of businesses, independent businesses, city representatives and regional development organizations.

d. Continued creation of new strategic initiatives through the focus and work of volunteers on the four committees working in unison to drive Newport into the future.

e. Manage all designated Special Flood Hazard Areas pursuant to 10 V.S.A. Chapter 32 Section 753, and the Municipal Hazard Mitigation Plan, such that the City of Newport, its Citizens, and businesses are eligible for Federal Flood Insurance, federal disaster recovery funds, and hazard mitigation funds as may be available

5.2.2. Natural Resources Goals

a. Ensure that public works and city planners are aware of DEC water quality initiatives, including Tactical Basin Planning and TMDLs and that actions are in line with maintaining protection of both surface and groundwater supplies.

b. Ensure that permits issued for development near sensitive areas, such as steep slopes, high elevations, wetlands, scenic vistas and wildlife habitats, contain conditions assuring conformance to the goals set forth in this plan and zoning bylaws.

c. The Planning Commission should work with the NVDA to continue the process of identifying the city's land conservation priorities and to the degree possible, link them to broader regional conservation work.

d. The Planning Commission shall also be an active participant in the local management plans for Newport City's natural areas.

e. With recent FEMA guidance on Climate Resilient Mitigation Actions funded under the HMA program, the city will incorporate recommendations accordingly. In line with the VTrans mission statement regarding climate change, the city remains committed to:

- Ensure that there are viable alternative routes around vulnerable infrastructure such as bridges and roadways
- Make safety a critical component in the development, implementation, operation and maintenance of the transportation system
- Develop contingency plans for a wide-variety of climate impacts to be implemented as data/information becomes available
- Utilize information technology to inform the public during times of emergency
- Educate of the public on the threats posed by climate change and fluvial erosion hazards
- Increase inspection of infrastructure if warranted by climate change indicators
- Apply a decision-making framework to incorporate cost-benefit analyses into adaptive plans and policy
- Work to protect essential ecosystem functions that mitigate the risks associated with climate change
- Educate individuals within the city to use best-practices during recovery periods to avoid ecological damage that may further exacerbate risk
- Recognize the interconnected nature of our built environment with ecological processes
- Protect the state's investment in its transportation system and adapting transportation infrastructure to the future impacts of climate change

f. In line with DEC's best practices regarding fluvial erosion, work to:

- Slowing, Spreading, and Infiltrating Runoff (The State Surface Water Management Strategy is found at: http://www.watershedmanagement.vt.gov/swms.html and http://www.watershedmanagement.vt.gov/stormwater.htm)
- Avoiding and Removing Encroachments. http://www.watershedmanagement.vt.gov/rivers/htm/rv_floodhazard.htm http://www.watershedmanagement.vt.gov/rivers/docs/rv_RiverCorridorEasementGuide.pdf
- River and Riparian Management: DEC has prepared a compendium of *Standard River Management Principles and Practices* to support more effective flood recovery implementation; improve the practice of river management; and codify best river management practices in Vermont. The document compiles the most current river management practices based on the best available science and engineering methods to create consistent practice and language for risk reduction while

maintaining river and floodplain function. Best practices are established to address common flood damages, including:

- Erosion of banks adjacent to houses and infrastructure
- Erosion of road embankments
- Channel movement across the river corridor
- Riverbed down-cutting that destabilizes banks, undermines structure foundations, exposes utility crossings, and vertically disconnects rivers from adjacent floodplains
- Bridge and culvert failure

(Source: http://www.watershedmanagement.vt.gov/permits/htm/pm_streamcrossing.htm)

5.3.2 Policies

a. Through both city and state-level management, work to:

- Encourage and maintain naturally vegetated shorelines, buffers and setbacks for all rivers, ponds, and streams.
- Allow higher density or cluster development in existing and designated settlement areas and low-density development in the remaining areas.
- Reduce flood hazard and repetitive road and driveway washout through continued updates and adherence to zoning bylaws.
- Identify and manage pollution, flooding and fluvial erosion hazards along rivers and streams as they arise.

5.3 Transportation

5.3.1. Transportation Goals

In adjunct to city -specific planning, the city is committed to continually subscribing to all current state standards related to:

a. Maintaining safe operating conditions on the present system of City roads through design to keep traffic at appropriate speeds and timely maintenance, including consideration of additional paving (though only on portions of roads prone to damage) should state funding become available.

b. Protection of existing City roads from flood damage and uncontrolled storm water runoff.

c. Preserving the capacity of City roads and maintain adequate traffic flows and safety.

d. Support the road maintenance crew through City -provided training sessions.

e. Ensuring that owners and managers of recreational areas provide and maintain adequate and safe parking facilities.

f. Continuing long term access opportunities to gravel and sand deposits for future road maintenance use.

g. Consider implementation of a formal tracking mechanism by-which all infrastructure work is accounted for on a site-by-site basis. The purpose of this is to open funding possibilities under the HMGP.

h. Continue to enhance understanding of the Incident Command Structure (ICS) as means to achieving enhanced communications during a response phase where significant increases in highway department responsibilities are required.

i. Using ICS as a foundation, develop a Standard Operating Procedure for enhanced Public Works functionality (snow and/or flood related) that details the relationship and responsibilities of the Road Commission, Public Works Director and employees that is based on best practices and needs through a collaborative effort.

5.4 Utilities and Facilities Plan

5.4.1. Utilities and Facilities Goals

a. Maintain and develop current city departments to meet the needs of the City and residents through adherence and modification to the Capital Improvement Program and City Plan.

5.5 Educational Facilities

5.5.1. Educational Goals

a. The School Board should work with the City Council and the Newport Volunteer Fire Department to ensure that the necessary equipment exists at the school for use as a shelter

b. Increase emergency planning cohesion between school and City EOPs through mutual participation and presentation at scheduled meetings and City and/or school meetings.

5.6 Existing City of Newport Actions that Support Hazard Mitigation

The City has done an excellent job at monitoring and addressing transportation issues and engaging in a documented and systematic approach to mitigation actions. The City Council has successfully pursued funding to address needs. Using Better Back Roads, Structures Grants and a capital budget program, the city has been able to enhance its transportation resilience and overall preparedness. By and large, road improvement projects remain the primary focus for the City and the areas identified are selected based on the condition of culverts and ditches and focus on runoff issues. In many cases, culverts properly sized for normal rain events are overwhelmed by the severe ones. The city will seek local, state and federal grants to address the sites. Reduce the loss of life and injury resulting from all hazards. The city has adopted a zoning ordinance that includes the designation of a Flood Hazard Area and associated regulations. Newport City is in the National Flood Insurance Program (NFIP). A Local Emergency Operations Plan (LEOP) has

been updated and adopted by the city. All culverts are upgraded to meet the State Highway Standards and the State Highway Standards policy has been adopted for all new construction. The City was issued a Certificate of Compliance for meeting or exceeding current Municipal Road and Bridge Standards on 4/6/15. New downtown buildings have installed sprinkler systems and firewalls. The city and regional emergency responders and planners conduct emergency drills involving all elements of the community. Backup power is available for water and sewer needs, shelter locations and emergency services. The Five Year Capitol Investment Plan serves as a long-range guide for targeting areas of the city requiring upgrade, repair, and/or replacement.

Table 5-1 Existing municipal actions that support hazard mitigation, City of Newport

Type of Existing Protection	Description /Details/Comments	Issues or Concerns	Responsible Party
Emergency Response			
Police Services	Newport City Police Department, Vermont State Police, Orleans County Sherriff	Assuring adequate City Police force and funding.	Newport City Police
Fire Services	Newport City Fire Dept.	Logistics of getting cut off from areas due to bridge or rail problem. Historic downtown Newport City fires and a hospital fire are the main concerns of the fire department Review and study the need for additional capacity and capability in the Fire Department to minimize the impact of a HAZMAT incident. Ensure that all emergency response and management personnel receive HAZMAT Awareness training as a minimum	Newport City Fire
Fire Department Personnel	1 Full time and 25 part-time.	Recruiting.	See above
Fire Department Mutual Aid Agreements	Northeast International Mutual Aid (19 participants)	None at this time	See above
EMS Services	Newport	Staffing is predominate issue	Newport City Ambulance
Other Municipal Services			
Highway Services	Public Works Operates by an adopted Standards and Specifications Program that fully details protocol and procedure.	None at this time	Public works
Highway personnel	Full time and fully staff	None at this time	See above
Water / Sewer Department	There are two municipal wells on lower Coventry Street right near each other. A covered reservoir is located on Poulin Farm. There is one large water tower on Route 105 that is supplied by 2 wells. The city is tied into the Derby water system and is gravity feed. The wastewater treatment facility is behind fire department and aggregate to I91. There are pumps for sewer forced main. There are back-up generators for both the water and sewer systems.	Even though the municipal water system is checked daily and secured, there is always a contamination concern because the entire City is served by it.	Public Works
Planning and Zoning personnel	Yes	None at this time	ZA/City Manager

Residential Building Code / Inspection	Yes	None at this time	ZA/City Manager
Emergency Plans			
Local Emergency Operations Plan (LEOP)	2022	Assure sheltering plans and contact information is up to date and vulnerable populations addressed.	Newport City Fire
School Emergency/Evacuation Plan(s)	2022	Increased collaboration (with City staff, LEPC, NVDA), knowledge of roles and drills are next step.	Newport City Fire
Municipal HAZMAT Plan	None	Not required but enhanced knowledge via HMEP funded transportation study through LEPC would benefit City. Review and study the need for additional capacity and capability in the Fire Department to minimize the impact of a HAZMAT incident. Ensure that all emergency response and management personnel receive HAZMAT Awareness training as a minimum	State HAZMAT/Newport City Fire
Dam Emergency Plans	Great Bay Hydro has shared its comprehensive Emergency Response Plan with the City.	Assure understanding of risk and associated protocol for residents and impacted City infrastructure.	Great Bay Hydro
Shelter, Primary	NCUHS	Include volunteer staff in planning communication and schedule drills to test efficacy.	School, Fire and Police
Replacement Power, backup generator	Yes, all key locations have generators.	None at this time	See above
Shelter, Secondary:	Municipal Building	Assure continued communication lines are open and contacts are correct	See above
Replacement Power, backup generator	Yes	Assure maintenance program.	See above
Municipal Plans			
City / Municipal Comprehensive Plan	2015 (2020 amendment)	None at this time	City Manager
City of Newport Road Capital Budget Plan	2022	Update as required and track all work expenditures	See above
Public Works Standards and Specifications	2005	Update required with development of "Road Tracking Methodology" designed to capture prior damage history.	See above
Hazard Specific Zoning (slope, wetland, conservation, industrial, etc.)	Yes	None at this time	See above
Highway Access (curb cut) Policy	Application process, review with final approval by City Council	None at this time	Public Works
Participation in National Flood Insurance Program (NFIP) and Floodplain/Flood Hazard Area Ordinance	Yes	Increase understanding of tenets of "No Adverse Impact" planning.	ZA
Culvert and bridge Inventory	2022	https://vtculverts.org/map Bridge information needs to be updated in VTculverts. City of Newport Road Inventory and Capital Budget Plan (2022)	Public Works

5.7 City of Newport All-Hazards Mitigation Goals

The following goals were developed by the planning team, vetted during a warned community meeting and approved during the development of this plan:

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- Recognize the characteristics that make the City of Newport unique within Orleans County and incorporate these findings into the hazard mitigation planning
- Reduce at a minimum, and prevent to the maximum extent possible, the loss of life and injury resulting from all hazards.
- Mitigate financial losses and environmental degradation incurred by municipal, educational, residential, commercial, industrial and agricultural establishments due to various hazards.
- Maintain and increase awareness amongst the City's residents and businesses of the damages caused by previous and potential future hazard events as identified specifically in this Local All-Hazards Mitigation Plan.
- Recognize the linkages between the relative frequency and severity of disaster events and the design, development, use and maintenance of infrastructure such as roads, utilities and storm water management and the planning and development of various land uses.
- Maintain existing municipal plans, programs and ordinances that directly or indirectly support hazard mitigation.
- Develop a mechanism for formal incorporation of this Local All-Hazards Mitigation Plan into the municipal comprehensive plan as described in 24 VSA, Section 4403(5). This mechanism will be developed by the Planning Commission, City Council and NVDA and integrate the strategies into the existing City Plan as annexes until the next formal update occurs, where a section devoted to mitigation planning will be integrated into the plan.
- Develop a mechanism for formal incorporation of this Local All-Hazards Mitigation Plan particularly the recommended mitigation actions, into the municipal operating and capital plans & programs as they relate to public facilities and infrastructure. With the development of the road erosion site inventory, the city will begin a process that incorporates the budgetary requirements of the defined mitigation strategies into its formal budgeting paradigm. The Planning Commission will review the LHMP and use language/actions from it to inform the integration and update process. Town Meeting Day will serve as the formal time that mitigation strategy budgetary considerations will be approved and incorporated into the city budget.

5.8 Mitigation Actions

Current Capabilities and Need for Mitigation Actions

While the city has seen little change in demographics and/or population, community impact and subsequent needs resulting from the pandemic provided new challenges and insights. Given this new awareness of the social vulnerabilities (e.g., loss of income, aging population, and access to health care) seen with the pandemic in addition to the health risks and that the town has continued to make progress in mitigated risk to the natural hazards, there is an opportunity to shift focus on addressing some lower priority items that serve enhance community resilience in a

wholistic manner. In following FEMA guidance, the following mitigation action categories form the basis of the city's future mitigation actions. For each mitigation action to follow, an indication of group will be given with the abbreviations listed below:

Mitigation Action Groups:

(P) Local Planning and Regulations: Government administrative or regulatory actions or processes that influence the way land and buildings are developed and built. These actions also include public activities to reduce hazard losses. Examples include planning and zoning, building codes, capital improvement programs, open space preservation, and storm water management regulations.

(SIP) Structure and Infrastructure Projects: Actions that involve the modification of existing buildings or infrastructure to protect them from a hazard, or removal from the hazard area. Examples include acquisition, elevation, relocation, structural retrofits, flood proofing, storm shutters, and shatter-resistant glass. Actions that involve the construction of structures to reduce the impact of a hazard. Such structures include storm water controls (e.g., culverts), floodwalls, seawalls, retaining walls, and safe rooms

(PEA) Public Education & Awareness: Actions to inform and educate citizens, elected officials, and property owners about potential risks from hazards and potential ways to mitigate them. Such actions include outreach projects, real estate disclosure, hazard information centers, and school-age and adult education programs.

(NRP) Natural Resource Protection: Actions that, in addition to minimizing hazard losses also preserve or restore the functions of natural systems. These actions include sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.

Current Capabilities, Progress and Need for Mitigation Actions

The City Plan's goals and policies that support hazard mitigation and the existing mitigation actions demonstrate the variety of policies and actions forming the foundation of this All-Hazards Mitigation Plan Update. Generally, the city considers its existing capabilities are adequate to address the identified priority hazards in this update. As with most areas in the state, mitigating flood-prone areas is a continuous effort that sees increased attention following a major event. The city is fortunate to not have the damage history related to declared flood disasters but has significant vulnerability to extreme heat. The city remains aware and diligent in keeping up with mitigation actions for all municipal systems. There exists a collaborative spirit that not only is valued but serves to enhance efficiency of action what needs to be done. The city regards its current hazard mitigation efforts carried out by the public works department as adequate to address winter storm impacts to local roads, however temporary road closure due to winter storms may isolate parts of the city. Winter storms are often the cause of the power loss and telecommunications failure. Tree trimming and vegetation management coupled with maintaining adequate repair vehicles and personnel are the primary means of mitigation. However, the city can incorporate the use of public information to support community resilience during a power outage. As part of the strategies defined in this plan, the city will develop a plan

for mass communication and, if telecommunication lines are down, a method for alerting residents of the alternate means of information dissemination and/or protocol (e.g., shelter logistics). Major infrastructure that has seen repeated damage due to flooding is a concern for the city and remaining active in identifying priorities, working with State Transportation and Natural Resource Agencies as means to increasing infrastructure resilience is a priority.

Progress in Mitigation Efforts

The table below provides status updates on the mitigation actions specific to infrastructure projects listed in the last approved plan. Actions from the previous plan not addressed below have been determined to be low priorities for the city. A low priority action from 2016 is defined by one or more of the following attributes:

- An action that is no longer considered a necessary strategy to mitigate risk by respective experts at the city, state, and or regional level
- An action that is not feasible or required to maintain daily operations and/or protection systems
- An action that is not associated with reducing risk to a natural hazard with an acceptable cost-benefit ratio

Table 5-2: Summary of Infrastructure Project Status:

Action #1: Continue fluvial geomorphology assessments in collaboration with DEC and develop strategies in response to identified risks**.** No action taken based on resources and capacity. However, the state-led road erosion assessment has started for communities in the county and while distinct from river geomorphology, a necessary and functional mitigation action. Action #2: Evaluate capabilities of existing road and storm water management infrastructure. Continue and improve highway, culvert and bridge maintenance programs Projects Identified in last 5 Year Capital Investment Plan have maintained a schedule of completion and includes narrative on actions in annual City Report. A new waterline and sewer line was installed and the city continues an operational protocol that succeeds at maintaining quality of assessment, planning, and address of identified problems. Action #3: Enhance cold weather resiliency of the city by maintaining and improving current Programs for residents No action taken aside from standard sources of information regarding protecting pipes from freezing and financial assistance through state and federal programs. Action #4: Reduce vulnerability to high wind events with accepted best practices The city has not modified its approach to this hazard. Public Works and the electric companies provide the necessary level of attention to reducing tree-limb caused outages.

Action #5: Raise public awareness of hazards, hazard mitigation and disaster preparedness:

The school and fire department maintain a regular schedule of drills related to evacuation and fire. However, sheltering plans were not addressed or modified in the planning period. Especially following COVID-19.

Action #6: Reduce vulnerability to severe winter storms

Maintaining snow and debris removal capabilities is ongoing and meets the needs of the city.

5.8.1. Prioritization of Mitigation Strategies

Descriptions of specific projects, where available, are listed in Table 5-3 below. Because of the difficulties in quantifying benefits and costs, it was necessary to utilize a simple "*Action Evaluation and Prioritization Matrix*" to affect a simple prioritization of the mitigation actions identified by the jurisdiction. The following list identifies the nine questions (criteria) considered in the matrix to establish an order of priority. Each of the following criteria was rated according to a numeric score of "1" (indicating poor), "2" (indicating below average or unknown), "3" (indicating good), "4" (indicating above average), or "5" (excellent).

Criteria List:

1. *Does the action respond to a significant (i.e., likely, or high risk) hazard?*
2. *What is the likelihood of securing funding for the action?*
3. *Does the action protect threatened infrastructure?*
4. *Can the action be implemented quickly?*
5. *Is the action socially and politically acceptable?*
6. *Is the action technically feasible?*
7. *Is the action administratively realistic given capabilities of responsible parties?*
8. *Does the action offer reasonable benefit compared to its cost of implementation?*
9. *Is the action environmentally sound and/or improve ecological functions?*

The ranking of these criteria is largely based on best available information and best judgment, as many projects are not fully scoped out at this time. The highest possible score is 45. It is anticipated that, as the city begins to implement the goals and actions of their Mitigation Strategies, they will undertake their own analysis to determine whether or not the benefits justify the cost of the project. Also, most proposed FEMA mitigation projects will undergo a benefit-cost analysis using a FEMA BCA template and approved methodology.

Table 5-1: Newport City Action Evaluation and Prioritization Matrix

Rank	Mitigation Action	Responds to high hazard	Funding potential	Protection value	Time to implement	Social and Political acceptance	Technical feasibility	Admin feasibility	Benefit to Cost	Environmental advantage	TOTAL
2	Reduce vulnerability to flooding by evaluating capabilities of existing road and storm water management infrastructure, public education and through municipal services and regulations.	5	4	5	2	5	3	3	4	4	35
5	Protect infrastructure and population from extreme temperature/drought	4	2	4	2	3	2	3	3	2	25
4	Reduce vulnerability to pandemic	3	4	5	2	5	3	3	5	1	27
1	Raise public awareness of hazards, hazard mitigation and disaster preparedness	4	5	5	5	5	5	5	5	1	40
3	Improve resilience to severe winter storms	4	3	3	2	4	3	4	3	3	29

Scoring: 1=Poor 2=Below Average or unknown 3=Average 4=Above Average 5=Excellent

5.8.2. Specific Mitigation Actions

With emphasis on nature-based solutions (i.e., "green-engineering), several specific actions described below fall into the nature-based solution category. These sustainable planning, design, environmental management and engineering practices integrate natural features or processes into the built environment to promote adaptation and resilience. When an action is a nature-based solution, "NBS" will be included to denote the association.

Action #1: Reduce vulnerability to flooding by evaluating capabilities of existing road and storm water management infrastructure, public education and through municipal services and regulations.

Lead Responsible Entity: City of Newport Public Works
Potential Partner Entities: Vermont Agency of Natural Resources; Vermont Agency of Transportation; NVDA, DEMHS, FEMA and the Agency of Commerce and Community Development

Timeframe: 2022 – 2027

Funding Requirements and Sources: FEMA or other hazard mitigation grants; FHWA grants; VAOT grants; Municipal Operating and Capital budgets.

Progress: The city continually monitors road and storm water management capabilities. All bridges and culverts have been electronically accounted for and the city is diligent in maintaining a comprehensive understanding that serves to guide action by identifying areas of road erosion, estimated costs of repair and future needs. Within these programs, the city will make advancements that are detailed below.

Specific Identified Tasks:

1) Infrastructure planning for enhanced stormwater resilience – The city will use opportunities to assure the implementation of a procedural protocol that serves to understand and implement, to the greatest degree possible, flood resilience measures in the design and construction of these structures as means to increasing awareness and implementation of flood protection measures to municipal water and sewer systems. Additionally, the public works director will assess the following mitigation actions during the planning cycle for feasibility and viability:

   - Raising electrical components of sewage lift stations above base flood elevation.
   - Raising manhole openings using concrete pillars.
   - Installing watertight covers or inflow guards on sewer manholes.
   - Installing flood telemetry systems in sewage lift stations.
   - Installing back-up generators for pumping and lift stations in sanitary sewer systems along with other measures (e.g., alarms, meters, remote controls, and switchgear upgrades)

   Note: The above bullets are considered fundamental mitigation actions for municipal water/sewer. They are included in the plan to help guide the city on resilience options resulting from identified needs.

2) Street reconstruction and street resurfacing (NBS) is considered a viable mitigation action and is the most visible part of the capital program for this planning cycle. The rationale for street resurfacing/reconstruction as mitigation is explained and summarized by the belief that through the consistent attention to areas in need, the city is reducing vulnerability to flood/snow-damaged transportation routes by reducing permeability to moisture invasion. The street construction cost shown in the summary by fund does not include any cost for water and sewer infrastructure. We have budgeted for gravel, stone and crack sealing. The majority of this amount will be used for crack sealing since this is very efficient in extending road surface life and reduce erosion of the road surface due to standing water, snow and ice. Considering road engineering practices (e.g., permeable road surfaces) that enhance green engineering practices will allow the city to mitigate hazard risk while benefiting the environment.

3) Regulations and Zoning: In addition to current zoning regulations, determine and enforce acceptable land uses to alleviate the risk of damage by limiting exposure in flood hazard areas. Additionally, the city will assess the viability of the following actions during the planning cycle and implement accordingly:

   - Adoption of a post-disaster recovery ordinance based on a plan to regulate repair activity depending on property location
   - Completing a stormwater drainage study for known problem areas
   - Preparing and adopting a stormwater drainage plan and ordinance
   - Preparing and adopting a community-wide stormwater management master plan
   - Regulating development in upland areas in order to reduce stormwater run-off through a stormwater ordinance
   - Linking flood hazard mitigation objectives with EPA Stormwater Phase II initiatives
   - Encouraging the use of Low Impact Development techniques
   - Nature-based systems

   Note: The above bullets are considered fundamental mitigation actions. They are included in the plan to help guide the city on resilience options resulting from identified needs

Rationale / Cost-Benefit Review: As some areas suffer low-level but consistent damage during heavy rains and snowmelt, the city will benefit from a systemic approach to addressing these areas in the planning cycle. Mitigating against these problems will reduce short- and long-term maintenance costs and improve the flow of traffic for personal and commercial purposes during flooding events. Tracking road work and understanding the HMGP program can open funding streams into the city and can make the application process much easier when required information is already available. A basic understanding of ICS will serve the city and at little or no cost. As a requirement for an approved LEOP, municipal ICS-awareness is seen as necessary state-wide. During an emergency event when the Public Works personnel are required to work beyond normal capacity, increased communication and collaboration between the Public Works Department and local entities can be enhanced with a basic SOP. An SOP can also serve to increase institutional memory when there are staff changes at every level as well as provide a template from which tabletops and drills can be based off of.

Action #2: Protect infrastructure and population from extreme temperatures and drought
Primary Responsible Entities: City of Newport Planning Commission, NVDA, Emergency Planning services, VDH
Potential Partner Entities: Newport Fire Chief, American Red Cross, Vermont's Medical Reserve Corps (MRC)
Timeframe: 2022 – 2027
Funding Requirements and Sources: Existing programs, contingent on available resources and funding.

Specific Identified Tasks:

Economic Resilience:

- Consider assessing, if feasible, the economic consequences of both extreme cold and heat (with drought) and develop actions steps to best support the community and protect infrastructure/the environment.

Zoning and Permitting Review Considerations:

- Consider stronger ventilation and cooling standards for mixed use development and multi-unit structures with four or more units.
- Enhance and expand availability of publicly available cooling sites. Newport's cooling options will need to serve a range of needs for a diverse population. Some sites will need to be located indoors and operate extended hours.
- Specific mitigation actions to consider:
- Execute an operating agreement with one facility (gymnasium? Gateway?) to function as a dedicated cooling site that meets all of the minimum requirements, and at least two of the encouraged amenities in Table 1.
- Promote use of the Vermont Department of Health Cooling Sites map and review the map every time the Local Emergency Management Plan is updated.
- Establish procedures for ensuring that potable water is available for outdoor cooling sites during heat emergencies.
- Work with local housing providers, social service agencies, and the regional planning commission to ensure that cooling options are considered when planning for warming shelters for unhoused populations.
- Improve cooling and ventilation of existing housing stock. Current statewide and regional efforts to weatherize and fuel switch provide an excellent opportunity to address cooling and ventilation as well. Organizations such as HEAT Squad and Northeast Employment Training Organization provide low- and no-cost services to the Newport's energy-burdened households.

Notification and Education – Investigate and develop a notification/communication plan that conveys essential sheltering information. Educating citizens regarding the dangers of extreme cold and the steps they can take to protect themselves when extreme temperatures occur by sustaining a process that serves to disseminate educational resources for homeowners and builders on how to protect pipes, including locating water pipes on the inside of building insulation or keeping them out of attics, crawl spaces, and vulnerable outside walls. Inform homeowners that letting a faucet drip during extreme cold weather can prevent the buildup of excessive pressure in the pipeline and avoid bursting through a yearly public service campaign.

- Establish a local energy committee or appoint an energy coordinator to help Newport residents become more aware of weatherization and fuel-switching opportunities (NBS)
- Expand on "neighbor-to-neighbor" networks. NEK residents are famously independent and self-reliant, and many individuals will not ask for help, even in more dire situations. The neighbor-to-neighbor efforts that were mobilized during the pandemic response, however, establish a valuable precedent for future emergency responses, including heat emergencies.
- One statewide system that can be used in any community is the Citizens Assistance Registry for Emergencies, CARE (https://e911.vermont.gov/care). Anyone can register in CARE, and it is the responsibility of the local Emergency Management Director to

request the CARE database for their municipality as needed. Registration in CARE is typically low, but promoting the use of it annually (such as Town Meeting Day) may help.
- Specific mitigation action to consider:
- Ensure that rental housing management staff, social service agencies, and visiting nurses have relevant and timely information on heat emergencies, including availability of cooling sites.
- Encourage enrollment in CARE.

Drought Planning: The city should consider what, if any, actions should be considered based off best practices related to drought mitigation, state guidance, and risk (NBS).

Rationale / Cost-Benefit Review:
With an increase in extreme weather, there is a need to protect property, the environment, and the population. Given the magnitude of population dependence on social services, indicating economic and other social vulnerabilities, effective outreach, education and collaboration with resources supports this mitigation action category. Given the high risk for heat related illness in the city, coordination with VDH and planning for such events is important.

Action #4: Reduce risk and impact of a pandemic event
Group: PEA, PP, SP
Risk or Hazard Addressed: Risk to infrastructure, environment and residents
Lead Responsible Entities: City of Newport, ACCD, VDH
Timeframe: 2022 – 2027
Potential Partner Entities: VEM, FEMA
Funding Requirements and Sources: Pandemic planning funding is secondary to financial stability funding in response to potential economic consequences not known to be a serious consequence of infection mitigation efforts. State and Federal funding are primary sources with limited but important local opportunities.

Specific Identified Tasks:
1) Work with facility leads on understanding risk factors and what can be done to mitigate and enhance training and skills for response
2) Enhance awareness and planning for COVID-19-related mandates, communication, isolation and quarantine logistics for residents, municipal operations and maintaining economic stability
3) Maintain process for funding acquisition related to COVID-19
4) Develop and maintain continuity of operations plans for critical positions

Action #5: Raise public awareness of hazards, hazard mitigation and disaster preparedness.
Lead Responsible Entities: City of Newport, Fire Chief, VDH, NVDA.
Timeframe: 2022 – 2027

Progress: The Fire Department annually conducts fire preparedness programs and school and family programs related to hazard awareness and disaster preparedness, including providing information on Town Meeting Day. The LEPC meets regularly and covers a host of topics related to emergency preparedness and raises awareness in the community about what organizations are doing around emergency response planning and chemical safety. Town Meeting Day can serve as an annual update and outreach opportunity as well.

Specific Identified Tasks:

1) School Programs: Continue school programs to raise student awareness of hazards, safety, preparedness and prevention. Explore establishing the school emergency notification system as the primary methodology for all emergency notification procedures and build in the contact information accordingly.
2) Family Programs: Continue family programs, such as car safety seat and bike safety programs, to raise family awareness of hazards, safety, preparedness and prevention.
3) Fire Prevention Programs: Continue National Fire Prevention Week and other programs to raise public awareness of fire hazards, safety, preparedness and prevention.
4) Dam Preparedness: Great Bay Hydro has the inundation maps and their own notification procedures which they shared with the city. The city should consider developing an outreach strategy based on likely scenarios and the subsequent properties that would be affected. Consider involving state agencies in planning and/or exercises that focus on the logistical considerations after a dam breach.
5) Other hazard awareness programs: Develop public awareness programs, based on all-hazards needs. Programs to address pandemic hazards, preparedness and mitigation may be appropriate as directed by the state department of health and its jurisdictional offices of local health.
6) Hazard Resilience for Property Owners: Develop and maintain education materials to inform property owners on how to protect their homes and businesses through accepted hazard resilience actions (e.g. securing their structures from high winds, elevating their electrical equipment/furnaces in basements, protecting from lightning strikes by grounding electrical outlets, etc.). Inform the public about severe winter weather impacts with annual outreach related to: traveler emergency preparedness information about severe winter weather hazards and support inclusion of safety strategies for severe weather in driver education classes and materials.

   Rationale / Cost-Benefit Review: Improved public awareness could potentially significantly reduce the loss of life and property damage through ongoing, formal, ongoing, public information campaigns that address property protection actions (flood proofing, elevation, anchoring mobile homes/propane tanks, electric and water system elevation, electric grounding, etc.) Improved awareness would also build understanding and public support for municipal mitigation actions to reduce potential infrastructure and liability costs.

Action 6: Reduce vulnerability to severe winter storms

Lead Responsible Entities: City of Newport Planning Commission and Public Works; NVDA Emergency Planning services.
Timeframe: 2022 – 2027
Progress: Roads are monitored and altered, when necessary, so that plowing can occur without damage to trucks and/or road. Snow clearing equipment is regularly serviced and the city maintains an adequate supply of salt.

Specific Identified Tasks:

1) Maintain Existing Shelter Capability: Maintain and improve capabilities of existing shelters. Notification procedures and shelter staffing is a priority for the city and intends to move forward on planning and public involvement. More formalized training is required and the ARC's "Shelter Initiative Program" can be used at no cost to the city to enhance both shelter management knowledge and sheltering supply cache. This action will address ice and extreme cold primarily and snow to a lesser extent.
2) Reduce risk of power failure due to ice storms: Enhance collaboration between public works and electric company related to down-limbed induced power failure. Maintain function of generators.
3) Residential Programs (NBS): Provide guidance and communication to residents on the structural and mechanical actions that can occur to reduce risk to severe winter storms (e.g. weather-proofing, anchoring, alternative heating sources, tree trimming, financial programs, etc.)
4) Planning actions for safe and effective plowing: Efficient snow removal is the foundation to winter storm (snow) events, assuring roads are plowable before winter remains an important facet of highway department functions. Work to develop and maintain alternative support mechanisms for snow removal when city capacity is overwhelmed. Enhance awareness of VTrans protocol and logistics of the high-density areas of population areas outside the city so that future operational plans address reliance on city services from those outside the city.

Rationale / Cost-Benefit Review:
Snow events are part of living in Vermont and the role of Newport City in providing essential support services for residents and beyond is a crucial component of maintaining social resilience during a disaster. During this planning cycle, the city can mitigate the long-term risk associated with severe winter weather through many of the actions outlined in other areas but also with enhanced understanding of the services, service areas and consequences of service disruption in the essential social services afforded to the public within the city. These consequences, for both the public and city departments (e.g. police, public works, etc.) will serve to assist the city in developing a process specific to mitigating severe winter weather's consequence on the most vulnerable segments of the region.

5.9 Implementation and Monitoring of Mitigation Strategies

5.9.1. Public Involvement following Plan Approval
After adoption, the city will continue to maintain web-presence of the mitigation plan with an opportunity for community input available on its website. Additionally, the city will hold an

annual public meeting after performing the annual progress report for the mitigation plan to discuss achievements and the following year's implementation plan. At Town Meeting Day, the city will present mitigation information and provide the public an opportunity to increase understanding and involvement with planning efforts. The city will also notify its neighboring municipalities of the availability of information for review and any significant risks and/or mitigation actions that have an impact on surrounding towns.

5.9.2. Project Lead and Monitoring Process

The City Manager is the project lead and will work in conjunction with the City Council and NVDA to complete the yearly progress report included in the plan. The city will create a mitigation action collection system that will be used as the source of future updates following the annual evaluation that will occur in conjunction with the progress report using the Plan Implementation Matrix provided below. While mitigation actions are, by default, often addressed at monthly City Council meetings. The city will schedule one meeting annually to formally assess the plan and adopt updates following the annual progress report and community meeting regarding the LHMP. Once the plan is approved by FEMA, the calendar will begin for annual review. The city will take the following implementation matrix and add actions to it each year, modifying tasks and/or needs as required so that the next LHMP update will be populated with the specific actions related to each mitigation strategy by year.

5.9.3 Plan Evaluation and Update Process

The City Manager will lead the plan evaluation process as part of the annual progress report. Prior to town meeting and in preparation for the annual city report, a mitigation section will be included that provides an executive summary for the public that addresses the following topics:

- Status of recommended mitigation actions for the five-year planning period
- Identification of barriers or obstacles to successful implementation or completion of mitigation actions, along with possible solutions for overcoming risk
- Identification of a lead person to take ownership of, and champion the Plan if different from City Council Chair
- An approach to evaluating future conditions (i.e. socio-economic, environmental, demographic, change in built environment etc.)
- Discussion of how changing conditions and opportunities could impact community resilience in the long term
- Discussion of how the mitigation goals and actions support the long-term community vision for increased resilience

By engaging in the annual evaluation, the city will have a viable method for capturing the facets of efficacy and areas needing revision and improvement in its mitigation plan. The city is committed to “institutionalizing” mitigation into its normal operating procedures and with approval of this plan, embarks on the formal incorporation of mitigation actions and discussion, maintaining an awareness that involves not only the City Council and City Staff but also the community at large, including the organizations represented by the current planning team. Along these lines, the city will maintain a contact list of the current planning team and make revisions as required, including the team on the evaluation process each year. Through this consistent attention resulting from the evaluation process, progress reports and communication in the

annual town report, the city will achieve the consistency required to enhance resilience through planning, assessment and actions devoted to mitigation.

5.9.4. Plan Update Process

The Plan update will be led by the City Manager. Depending on funding availability, the city may elect to acquire the assistance of NVDA and/or a consultant to update the plan following a declared disaster and/or the next five-year planning cycle. To assure that the Plan does not expire, the city will begin the update process within no less than six months of the current Plan's expiration date. Public participation will follow a similar engagement process that occurred for this update and explained in section 1.7. Through formal planning notification and opportunity for engagement, the public can continue to contribute to city mitigation initiatives. Following a disaster and during the recovery phase, the city will use the experience to assess the current plan's ability to address the impact of the most recent disaster and edit the plan accordingly. Using the annual progress reports and evaluation narratives as a guide, along with perceived changes in risk or vulnerabilities supported by data and/or observation, strategies will be captured in accordance with FEMA guidelines, which includes reconvening the planning team during the update process. The city will establish a "Mitigation File" that documents all evaluations and progress reports, along with actions, especially related to infrastructure improvement projects. While the progress reports are designed to capture the specific actions the city has accomplished related to implementation, keeping a narrative list with dates on all actions relatable to mitigation (e.g. school drills, LEOP updates, Fire Safety Awareness, meetings, etc.), will provide the city the bulk of information required in the update process.

5.9.5. Implementation Matrix for Annual Review of Progress

The following table is intended to aid municipal officials in implementing the mitigation actions for Newport City and to facilitate the annual monitoring and progress reporting. Progress has been included as a guide to future updates. Each year, the city will reserve a City Council meeting to review and update the Implementation Matrix as means to establishing an accurate evaluation of the plan's efficacy and the information required for the succeeding update to the plan.

Table 5-3: Newport City All-Hazards Mitigation Plan Implementation Matrix

Action	Responsible Entity	Timeline	Specific Identified Tasks	Annual Progress
Improve road infrastructure and municipal systems protection programs	City PWD and associated municipal systems managers	Spring 2023 and each subsequent spring	Infrastructure Assessment for Storm Water Vulnerability	
	PWD	Spring 2023 and as-needed related to weather patterns	Assessment for Fluvial Erosion, Landslide Vulnerability	
	PWD	As needed during entire planning period	Culvert Upgrades	
	PWD and associated municipal systems managers	Ongoing each fall and spring of planning period	Continued Monitoring of Vulnerable Infrastructure	
	PWD	Spring 2023- Fall 2026 (each project will be selected based on capability and level of need within the planning period	5 year CB Plan identifies and scopes projects for entire planning cycle	
Action	Responsible Entity	Timeline	Specific Identified Tasks	Annual Progress

Maintain and improve resilience to severe winter storms	PWD	Fall 2021 and each subsequent fall	Maintain Existing Shelter Capability	
	PWD	Fall 2022 and each subsequent fall	Reduce risk of power failure due to ice storms	
	Fire Chief	Winter 2023-Summer 2026	Notification	
	Planning Commission and Fire Chief	Winter 2022-Spring 2027	Residential Programs	
	PWD	Fall 2022 and each subsequent Fall in planning period	Monitor roads for safe and effective plowing	
	PC, Fire Chief	Fall 2023- Winter 2024	Increase awareness of ICS structure and recommended practices	
Action	Responsible Entity	Timeline	Specific Identified Tasks	Annual Progress
Reduce impact of extreme cold durations (Note Extreme Heat/Drought is included at bottom of table)	PC, PWD, Fire Chief	Winter 2023 and ongoing each fall	Economic Resilience	
	EMD, Fire Chief	Fall 2022 and ongoing as preparation for winter	Maintain Existing Shelter Capability	
	PC, Fire Chief, School,	Fall 2022 and ongoing as	Notification and Education	

	local/regional assistance organizations.	preparation for winter		
	Fire Chief, Planning Commission	Fall 2022- Fall 2023	Assess Vulnerable Population	
Action	Responsible Entity	Timeline	Specific Identified Tasks	Annual Progress
Raise public awareness of hazards and hazard mitigation actions	Fire Chief, NVDA, PC, EMD	Winter 2023- Spring 2024	Hazard Resilience for Property Owners	
	PC	As needed for residents and town	HMGP Awareness	
	Schools	Fall 2023- Fall 2026	School Programs	
	PC, Clerks	Fall 2022 and ongoing as needed	Family Programs	
	Fire Chief	Spring 2023 and on-going as needed	Fire Prevention Programs	
	Fire Chief	Summer 2023 on on-going as needed	Other Hazard Awareness Programs	
Action	Responsible Entity	Timeline	Specific Identified Tasks	Annual Progress
Reduce risk and impact of a pandemic event	PC, ACCD, VDH, NVDA	Fall 2022- Spring 2023	Work with facility leads on understanding risk factors and what can be done to mitigate and	

			enhance training and skills for response	
	PC, ACCD, VDH, NVDA	Fall 2022- Spring 2023	Enhance awareness and planning for COVID-19-related mandates, communication, isolation and quarantine logistics for residents, municipal operations and maintaining economic stability	
	PC, ACCD, VDH, NVDA	Spring 2023- Spring 2024	Develop and maintain continuity of operations plans for critical positions	
Action	Responsible Entity	Timeline	Specific Identified Tasks	Annual Progress
Reduce Impact of Extreme Heat and Drought	PC	Summer 2023 and ongoing as required	<u>Economic Resilience</u>: ● Consider assessing, if feasible, the economic consequences of both extreme cold and heat (with drought) and develop actions steps to best support the community and protect infrastructure/the environment. <u>Zoning and Permitting Review Considerations</u>: ● Consider stronger ventilation and cooling standards for mixed use development and multi-unit structures with four or more units.	

			• Enhance and expand availability of publicly available cooling sites. Newport's cooling options will need to serve a range of needs for a diverse population. Some sites will need to be located indoors and operate extended hours. • Specific mitigation actions to consider: • Execute an operating agreement with one facility (gymnasium? Gateway?) to function as a dedicated cooling site that meets all of the minimum requirements, and at least two of the encouraged amenities in Table 1. • Promote use of the Vermont Department of Health Cooling Sites map and review the map every time the Local Emergency Management Plan is updated. • Establish procedures for ensuring that potable water is available for outdoor cooling sites during heat emergencies.	

			• Work with local housing providers, social service agencies, and the regional planning commission to ensure that cooling options are considered when planning for warming shelters for unhoused populations. • Improve cooling and ventilation of existing housing stock. Current statewide and regional efforts to weatherize and fuel switch provide an excellent opportunity to address cooling and ventilation as well. Organizations such as HEAT Squad and Northeast Employment Training Organization provide low- and no-cost services to the Newport's energy-burdened households. <u>Notification and Education</u> – Investigate and develop a notification/communication plan that conveys essential sheltering information. Educating citizens regarding the dangers of extreme cold and the steps they can take to	

			protect themselves when extreme temperatures occur by sustaining a process that serves to disseminate educational resources for homeowners and builders on how to protect pipes, including locating water pipes on the inside of building insulation or keeping them out of attics, crawl spaces, and vulnerable outside walls. Inform homeowners that letting a faucet drip during extreme cold weather can prevent the buildup of excessive pressure in the pipeline and avoid bursting through a yearly public service campaign. ● Establish a local energy committee or appoint an energy coordinator to help Newport residents become more aware of weatherization and fuel-switching opportunities. ● Expand on "neighbor-to-neighbor" networks. NEK residents are famously independent and self-reliant, and many individuals will not ask for help, even in more dire situations. The neighbor-to-neighbor efforts	

			that were mobilized during the pandemic response, however, establish a valuable precedent for future emergency responses, including heat emergencies. ● One statewide system that can be used in any community is the Citizens Assistance Registry for Emergencies, CARE (https://e911.vermont.gov/care). Anyone can register in CARE, and it is the responsibility of the local Emergency Management Director to request the CARE database for their municipality as needed. Registration in CARE is typically low, but promoting the use of it annually (such as Town Meeting Day) may help. ● Specific mitigation action to consider: ● Ensure that rental housing management staff, social service agencies, and visiting nurses have relevant and timely information on heat emergencies, including availability of cooling sites.	

			• Encourage enrollment in CARE. Drought Planning: The city should consider what, if any, actions should be considered based off best practices related to drought mitigation, state guidance, and risk.	

APPENDICES

Appendix A: Newport Community Outreach Survey and Response Summary

NEWPORT
Vermont est. 1918

City Information City Documents Community Planning & Zoning

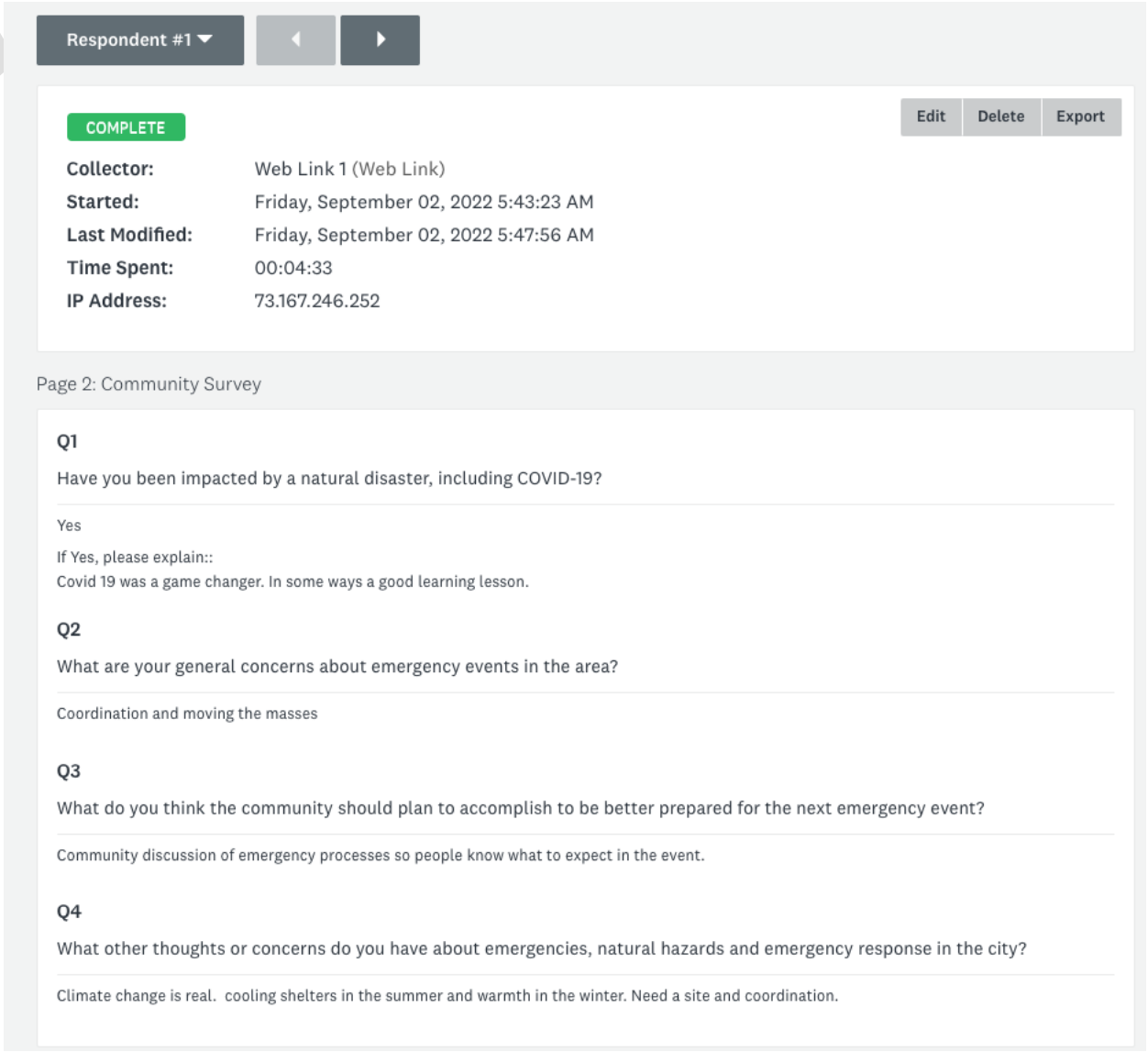
News

**Hazard Mitigation Plan Update – Request for Community Input **

September 2, 2022

Introduction
Newport City is in process of updating their Hazard Mitigation Plan. Mitigation planning protects a community from natural hazard vulnerabilities and is a mandatory requirement before any FEMA funding can be awarded to a city to repair infrastructure or acquire critical equipment. By maintaining an approved plan, the city can earn a greater percentage of state funding during recovery from a disaster and be better prepared to handle a future event. Your input is crucial to the planning process and the information you provide will help produce a plan that will serve the city for years to come. Please take the time to share your thoughts on the four (4) questions to follow. Thank you!

Please complete this survey before **September 30th, 2022** Hazard Mitigation Survey Click HERE


Respondent #1
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Export
Collector: Web Link 1 (Web Link)
Started: Friday, September 02, 2022 5:43:23 AM
Last Modified: Friday, September 02, 2022 5:47:56 AM
Time Spent: 00:04:33
IP Address: 73.167.246.252
Page 2: Community Survey
Q1
Have you been impacted by a natural disaster, including COVID-19?
Yes
If Yes, please explain::
Covid 19 was a game changer. In some ways a good learning lesson.
Q2
What are your general concerns about emergency events in the area?
Coordination and moving the masses
Q3
What do you think the community should plan to accomplish to be better prepared for the next emergency event?
Community discussion of emergency processes so people know what to expect in the event.
Q4
What other thoughts or concerns do you have about emergencies, natural hazards and emergency response in the city?
Climate change is real. cooling shelters in the summer and warmth in the winter. Need a site and coordination.

Respondent #2

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COMPLETE

Collector:	Web Link 1 (Web Link)
Started:	Friday, September 02, 2022 1:21:31 PM
Last Modified:	Friday, September 02, 2022 1:22:27 PM
Time Spent:	00:00:55
IP Address:	73.167.246.252

Page 2: Community Survey

Q1

Have you been impacted by a natural disaster, including COVID-19?

No

Q2

What are your general concerns about emergency events in the area?

Drinking water safety

Q3

What do you think the community should plan to accomplish to be better prepared for the next emergency event?

The city is doing a great job to stay ahead of situations

Q4

What other thoughts or concerns do you have about emergencies, natural hazards and emergency response in the city?

none

Respondent #3

Edit | Delete | Export

COMPLETE

Collector:	Web Link 1 (Web Link)
Started:	Wednesday, September 07, 2022 7:13:16 AM
Last Modified:	Wednesday, September 07, 2022 7:28:03 AM
Time Spent:	00:14:46
IP Address:	64.223.247.71

Page 2: Community Survey

Q1

Have you been impacted by a natural disaster, including COVID-19?

Yes

If Yes, please explain::

Respondent #4

COMPLETE

Edit | Delete | Export

Collector: Web Link 1 (Web Link)
Started: Friday, September 09, 2022 4:53:08 PM
Last Modified: Friday, September 09, 2022 5:24:47 PM
Time Spent: 00:31:38
IP Address: 73.167.107.7

Page 2: Community Survey

Q1

Have you been impacted by a natural disaster, including COVID-19?

Yes

If Yes, please explain::
Covid-19, I lost my business and our families major source of income. We had to sell our home and we relocated to Vermont because we wanted to move away from where we were.

Q2

What are your general concerns about emergency events in the area?

Making sure that the elderly, disabled, and children have the necessary items needed to survive. On a personal note if it was the winter I worry about how we would heat our home and keep our children, pets, and ourselves warm if we lost power for a long period of time.

Q3

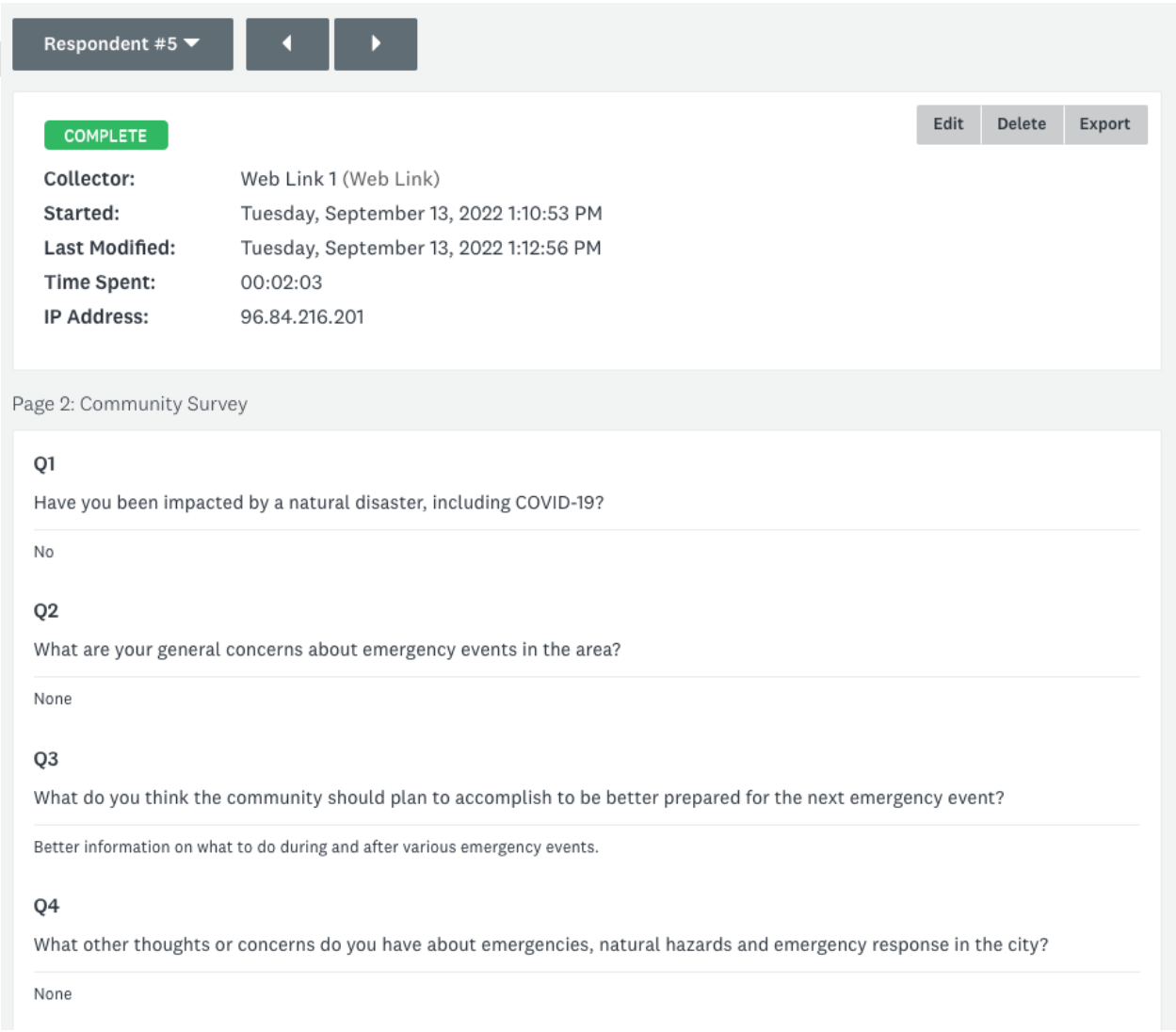
What do you think the community should plan to accomplish to be better prepared for the next emergency event?

An understanding of possible disasters in our area and the plan for each of these disasters including naming the person or people in charge of putting the plan in place in case of an emergency. Safe places for people to go. Transportation to the safe places if needed. Neighborhood groups to check on each other within the area assigned to the specific vicinity within Newport. Communication and Cooperation with the local schools to coordinate services. Chain of command with all groups and sub within master disaster plan.plann the ma

Q4

What other thoughts or concerns do you have about emergencies, natural hazards and emergency response in the city?

FEMA puts out sample disaster plans for smaller organizations and I imagine towns that could be used on a larger scale to form the guidelines for the towns plan. I actually worked with FEMA when I had my child care program to develop the programs Emergency Operations Plan in New Hampshire. I still have a copy of my plan if anyone would like a copy I would be happy to share a copy with the town of Newport. My plan was approved by the FEMA supervisor in the Littleton, NH office. After looking over my plan he told me it was one of the best Emergency Management Plans for a Preschool Program and Child Care Center that he had ever seen. The town plan would be on a much bigger basis, of course. The copy of the plan that I have would at least give the town a place to start and the basic knowledge of what FEMA would be looking for. FEMA also offered classes a couple of years ago on how to develop an Emergency Management Plans. I am not sure if they still offer those or not. I will give you my name and address so that you can reach me if you would like a copy of my plan. Katherine Wright 320 Mount Vernon Street Newport, Vermont 05855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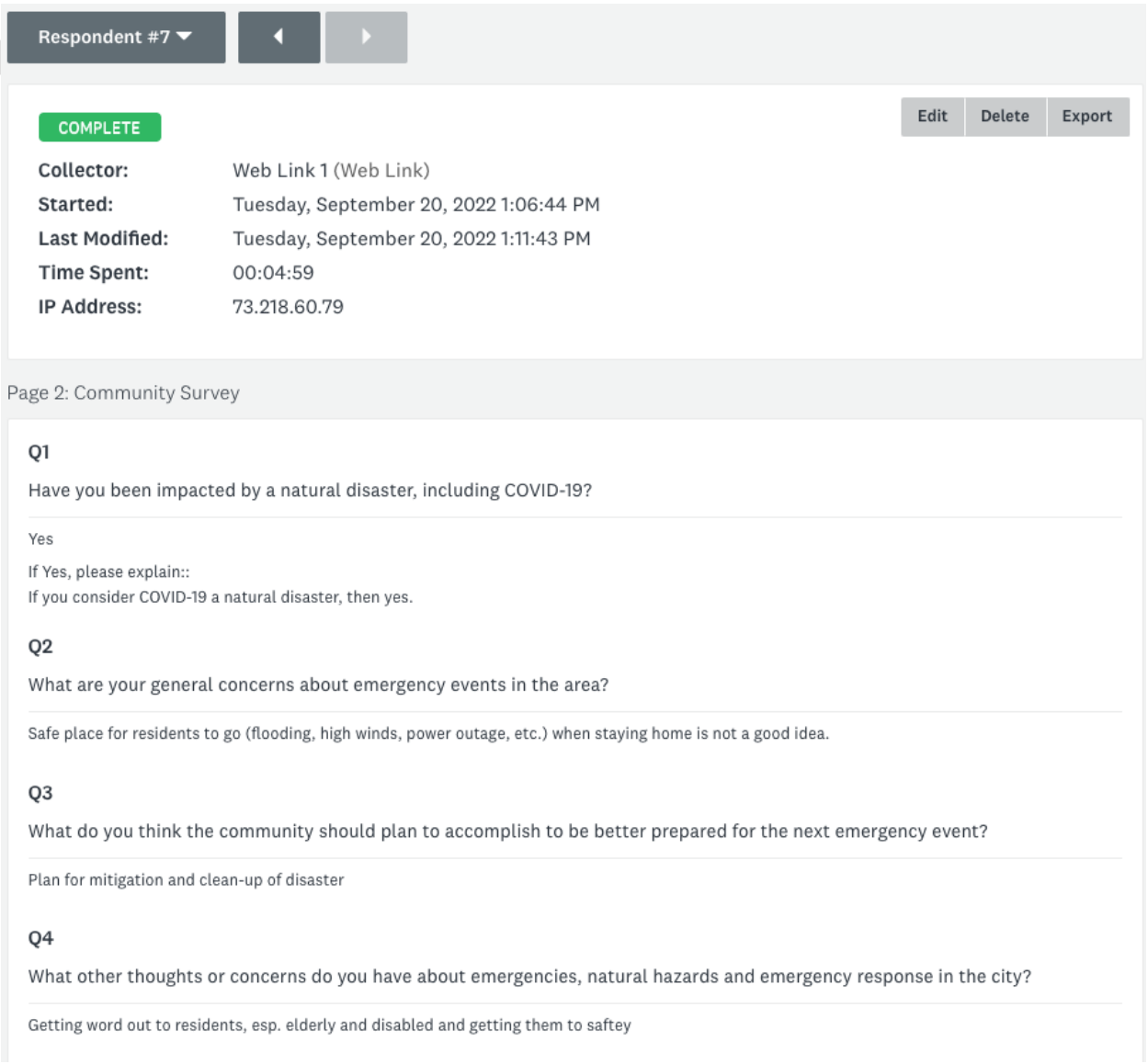
Page 2: Community Survey
Q1
Have you been impacted by a natural disaster, including COVID-19?
No
Q2
What are your general concerns about emergency events in the area?
None
Q3
What do you think the community should plan to accomplish to be better prepared for the next emergency event?
Better information on what to do during and after various emergency events.
Q4
What other thoughts or concerns do you have about emergencies, natural hazards and emergency response in the city?
None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Page 2: Community Survey
Q1
Have you been impacted by a natural disaster, including COVID-19?
Yes
If Yes, please explain::
If you consider COVID-19 a natural disaster, then yes.
Q2
What are your general concerns about emergency events in the area?
Safe place for residents to go (flooding, high winds, power outage, etc.) when staying home is not a good idea.
Q3
What do you think the community should plan to accomplish to be better prepared for the next emergency event?
Plan for mitigation and clean-up of disaster
Q4
What other thoughts or concerns do you have about emergencies, natural hazards and emergency response in the city?
Getting word out to residents, esp. elderly and disabled and getting them to saftey