

---

# Town of Westerly 2023 Hazard Mitigation & Flood Management Plan



# APPENDICES

# APPENDIX 2-1

CRS Credit for Activity 510

---

# Appendix 2-1

## CRS Credit for Activity 510

The Community Rating System (CRS) is a voluntary incentive program designed to encourage communities to engage in various community focused activities which promote a comprehensive approach to floodplain management beyond the minimum National Flood Insurance Program (NFIP) requirements. As the Town of Westerly is a FEMA Community Rating System (CRS) program participant, the Advisory Committee chose to follow the 10-Step planning process associated with CRS Activity 510, Floodplain Management Planning. The following Table outlines the 10-Step planning process and references the Section(s) within this *Plan* where that step has been addressed. The maximum and anticipated CRS Credit has also been provided.

### CRS Activity 510 Planning Process - Credit Checklist

CRS Planning Steps	CRS Credit Point Criteria Corresponding Section within Westerly HM&FMP	Maximum CRS Credit	Estimated CRS Credit
1. Organize to Prepare the Plan	a. The office responsible for community land use and comprehensive planning was involved throughout the entire planning process (Advisory Committee Chair) <b>Refer to Section 2.1.2/Table 2-2 and Table 2-3</b>	4	4
	b. The department staff on the Advisory Committee represented offices responsible for all six categories of food mitigation activities <b>Refer to Section 2.1.2/Table 2-2 and Table 2-3</b>	9	9
	c. The planning process was formally created by the community's governing board (November 7, 2022 Town Council meeting) <b>Refer to Section 2.1.2</b>	2	2
2. Involve the Public	a. Members of the public comprise more than half of the planning committee membership; the Advisory Committee met 7 times and was engaged in all aspects of plan development; all meetings were publicized and open to the public <b>Refer to Section 2.1.2/Table 2-2 and Section 2.2.2/Table 2-4</b>	60	60
	b. A public meeting (Outreach Activity #7) was held within the first 2 months of the planning process to obtain public input on the natural hazards, problems, and possible solutions <b>Refer to Section 2.2.2/Table 2-4</b>	15	15
	c. A public meeting (Public Hearing) was held at the end of the planning process to obtain input on the recommended plan (Outreach Activity #13); the <i>Plan</i> and its findings and recommendations were explained and people were provided the opportunity to ask questions and submit their comments for review, consideration, and potential modification of the <i>Plan</i> <b>Refer to Section 2.2.2/Table 2-4 and Section 7.1</b>	15	15
	d. In addition to the Public Information Meeting and Public Hearing, eleven (11) other outreach activities were conducted <b>Refer to Section 2.2.2/Table 2-4</b>	30	30
3. Coordinate	a. The Town conducted an extensive review of existing studies, reports, and technical information (REQUIRED for Step 3 credit) <b>Refer to Sections 2.3 and 5.1.1; and Appendix 5-1</b>	5	5
	b. The Town coordinated with 37 agencies and organizations outside the community's governmental structure through emails at the beginning of the planning process as well as two during the Public Review Period <b>Refer to Section 2.3.2; and Appendix 2-3</b>	30	30

CRS Planning Steps	CRS Credit Point Criteria Corresponding Section within Westerly HM&FMP	Maximum CRS Credit	Estimated CRS Credit
4. Assess the Hazard	<p>a. The <i>Plan</i> includes an assessment of the flood hazard, including the SFHA, repetitive loss areas, areas not mapped on the FIRM that have flooded in the past, and other surface flooding identified in other studies</p> <p>Maps of the flood hazard areas have been included: <b>Figures 4-11, 4-16, 4-45, 4-47, 4-48; and maps included in Appendices 4-2</b></p> <p>A description of the known flood hazards has been included for: Inland Flooding (Riverine Flooding, Shallow Flooding, and Dam Failure) – <b>Refer to Section 4.3.1.1</b> ; Coastal Flooding including Storm Surge – <b>Refer to Section 4.3.1.2</b>; and Coastal Erosion – <b>Refer to Section 4.3.1.3</b>; for additional information regarding Critical Facilities - <b>Refer to Appendix 4-3</b></p> <p>A discussion of past floods has been included <b>Refer to Section 4.2.1; and Section 4.3.1</b></p>	15	15
	<p>b. The <i>Plan</i> includes an assessment of less-frequent flood hazards. An inventory was conducted and concluded that there are 5 dams, but no levees in Town. The inventory also identified that only one of the seven special flood-related hazards identified in CRS Coordinator’s Manual (401) is applicable – coastal erosion. Inland flooding, coastal flooding/storm surge, dams, and coastal erosion have all been described, and the SFHA has been mapped. <b>Refer to Section 4.3.1; and Appendix 4-2</b></p>	10	10
	<p>c. The risk assessment identifies areas likely to be flooded and flood problems that are likely to get worse in the future as a result of changes in floodplain development and climate change or sea level rise. <b>Refer to Sections 4.1 and 4-4; and Appendices 4-2 and 4-3</b></p>	5	5
	<p>d. The <i>Plan</i> includes a description of the magnitude or severity, history, and probability of future events for other natural hazards; the natural hazards identified are those included in the RI-SHMP <b>Refer to Sections 4.1, 4.2, 4.3.2, 4.3.3, 4.3.4, and 4.3.5</b></p>	5	5
	5. Assess the Problem	<p>a. The <i>Plan</i> includes an overall summary of the jurisdiction’s vulnerability to each hazard identified in the hazard assessment and the impact on the community. (REQUIRED for Step 5 credit) <b>Refer to Executive Summary (Major Findings); Section 4.2.2/Table 4-4; and Appendix 4-1</b></p>	2
<p>b. The <i>Plan</i> includes a description of the impact that the identified hazards have on the following features: life safety and public health – <b>Refer to Section 4.4.5</b>; critical facilities and infrastructure – <b>Refer to Section 4.4.1-4.4.5; and Appendix 4-3</b>; the community’s economy and major employers – <b>Refer to Section 4.4.4</b>; and the number and types of affected buildings – <b>Refer to Section 4.4.2; and Appendices 4-2 and 4-3</b></p>		25	25

CRS Planning Steps	CRS Credit Point Criteria Corresponding Section within Westerly HM&FMP	Maximum CRS Credit	Estimated CRS Credit
5. Assess the Problem	c. The assessment includes an estimate of the potential damage and dollar losses to vulnerable structures <b>Refer to Section 4.4.2</b>	5	5
	d. The assessment describes areas within the floodplain that provide natural functions <b>Refer to Section 4.4.3</b>	5	5
	e. The assessment includes a description of development trends <b>Refer to Section 4.4.6</b>	7	7
	f. The assessment includes a description of the impact of the future flooding conditions on people, property, and natural floodplain functions <b>Refer to Section 4.4</b>	8	8
6. Set Goals	The <i>Plan</i> includes a statement of the community's goals for their hazard mitigation & floodplain management program which addresses all identified flood-related problems (inland flooding, coastal flooding/ storm surge, and coastal erosion) <b>Refer to Executive Summary (Goals and Policies); and Sections 6.2 and Section 6.4</b>	2	2
7. Review Possible Activities	<b>Please Note:</b> For items a-g, the <i>Plan</i> includes a wide array of possible activities that were considered for inclusion in the <i>Action Plan</i> as well as if existing regulatory measures should be revised ( <b>Refer to Sections 5.1.1, 6.3, and 6.4; and Appendices 5-1 and 6-1</b> ).  Additionally, <b>Section 5-3</b> includes an overview of the status of the 2018 HMP actions. Each of the 2018 actions has been reviewed and determined appropriate or not appropriate for inclusion in the updated <i>Action Plan</i> . Those activities determined appropriate were further discussed and as there was some overlapping between the various planning documents, similar activities were grouped together and rewritten. Based on an extensive review of the possible activities, the Committee selected 33 actions to undergo the STAPLEE analysis ( <b>Appendix 6-2</b> ). Those activities selected have been included in the <i>Action Plan</i> ( <b>Section 6-4</b> ). The <i>Action Plan</i> includes a number of descriptors including magnitude of cost and potential funding source.	5	5
	a. The <i>Plan</i> reviewed preventive activities including zoning, stormwater management regulations, building codes, subdivision ordinances, and the preservation of wetlands and open space <b>Refer to Section 5.1.1; and Appendices 5-1 and 6-1</b>		
	b. The <i>Plan</i> reviewed whether the community's floodplain management regulatory standards are sufficient for current and future conditions <b>Refer to Section 5.1.1; and Appendix 5-1 and 6-1</b>	5	5
	c. The <i>Plan</i> reviewed property protection activities, such as acquisition and flood insurance <b>Refer to Appendix 6-1</b>	5	5
	d. The <i>Plan</i> reviewed activities to protect the natural and beneficial functions of the floodplain, such as wetlands protection <b>Refer to Appendix 6-1</b>	5	5
	e. The <i>Plan</i> reviewed emergency services activities <b>Refer to Appendix 6-1</b>	5	5
	f. The <i>Plan</i> reviewed structural projects <b>Refer to Appendix 6-1</b>	5	5
	g. The <i>Plan</i> reviewed public information activities, such as outreach projects and environmental education programs <b>Refer to Appendix 6-1</b>	5	5

CRS Planning Steps	CRS Credit Point Criteria Corresponding Section within Westerly HM&FMP	Maximum CRS Credit	Estimated CRS Credit
8. Draft an Action Plan	a. The Action Plan includes a balanced program, with flood-related activities from all six floodplain management categories; at least one action for each Goal; and all required descriptors, including a prioritized ranking <b>Refer to Section 6.4/Table 6-1</b>	45	45
	b. The Action Plan includes an item that addresses post-disaster redevelopment and mitigation policies and procedures <b>Refer to Section 6.4/Table 6-1 (Actions 2023-1.2-C, 2023-4.3-A, 2023-4.3-B, and 2023-4.3-C)</b>	10	10
	c. In addition to public information activities, the Plan includes action items to mitigate the effects of the other natural hazards identified in the hazard assessment <b>Refer to Section 6.4/Table 6-1</b>	5	5
9. Adopt the Plan	The <i>Plan</i> was officially adopted by the Westerly Town Council on February 27, 2023. <b>Refer to Executive Summary (Plan Adoption); Section 7.1; and Appendix 7-2</b>	2	2
10. Implement, Evaluate, and Revise the Plan	a. The Town intends to monitor implementation, review progress, and recommend revisions to the <i>Plan</i> in an annual evaluation report which will be submitted to the governing body, released to the media, and made available to the public. (REQUIRED) <b>Refer to Section 7.2</b>	2	2
	b. The Town intends that the annual evaluation report is prepared by the same planning committee that prepared the <i>Plan</i> or by a successor committee with a similar membership. Westerly intends to meet twice a year. If the committee meets only once a year (6 points) If the committee meets twice a year (12 points) If the committee meets at least quarterly (24 points) <b>Refer to Section 7.2</b>	24	12

### Summary of Points

CRS Activity 510 Planning Process	Maximum CRS Points (Total = 382)	Estimated CRS Points
<b>Phase I – Planning Process</b>		
Step 1. Organize to Prepare the Plan	15	15
Step 2. Involve the Public	120	120
Step 3. Coordinate	35	35
<b>Phase II – Risk Assessment</b>		
Step 4. Assess the Hazard	35	35
Step 5. Assess the Problem	52	52
<b>Phase III – Mitigation Strategy</b>		
Step 6. Set Goals	2	2
Step 7. Review Possible Activities	35	35
Step 8. Draft an Action Plan	60	60
<b>Phase IV – Plan Maintenance</b>		
Step 9. Adopt the Plan	2	2
Step 10. Implement, Evaluate, and Revise the Plan	26	14
Total Points	382	370

# APPENDIX 2-2

## Outreach Activities

---

# Appendix 2-2

## Outreach Activities

### Outreach Activity 1: Project Webpage

A HM&FMP project webpage was created on the Town's website as a mechanism to provide the community and other stakeholders with information about the planning process and promote upcoming meetings and outreach activities. The webpage was maintained throughout the duration of the Project and updated on several occasions. At the beginning of the Public Review period, the *Public Review Draft* was posted on the project webpage. Following is a snapshot of the material posted on the webpage at the beginning of the Project. The webpage can be accessed at: <https://westerlyri.gov/546/Hazard-Mitigation>. A link to the project webpage was included on the Town's website in the following locations: the Emergency Management webpage; under Government-Current Projects; and in the News Flash.

## Hazard Mitigation

### Westerly, Be Prepared: for Flooding and Other Natural Hazards



### 2023 Hazard Mitigation & Flood Management Plan (HM&FMP)

While there are many aspects of coastal life in Westerly to celebrate, it does leave us vulnerable to several natural hazards. Tides are pushing waters onto our streets with more regularity and we are on the frontlines for sea level rise. More frequent and intense rainfall is becoming the norm resulting in increased inland and street flooding. Westerly is home to the mouth of the Pawcatuck river which drains approximately 300 square miles of the Wood-Pawcatuck River Watershed through the heart of the Town's economic center. The next *Flood of 2010* or *Superstorm Sandy* could be around the corner.

The Town is working hard to be prepared and to that end is developing a **2023 Hazard Mitigation & Flood Management Plan (HM&FMP)** to strengthen our resilience to a number of natural hazards, including flooding and hurricanes. The HM&FMP will update the Town's 2018 Hazard Mitigation Plan (FEMA requires a 5-year update), and expand the focus on flood management (helping with our CRS score). The Plan is being overseen by an Advisory Committee comprised of Town staff, residents, and other stakeholders. The Advisory Committee meetings are posted below and are open to the public.

The Plan will assess the likely impacts of natural hazards that historically have or are reasonably anticipated to impact the people and property of the Town (examples include flooding, ice storms, drought, fire, hurricanes, etc.). The Plan will establish updated goals and objectives and develop a mitigation strategy and action plan with a list of prioritized projects. It is being developed in accordance with Federal Emergency Management Agency (FEMA) requirements, and includes Community Rating System (CRS) Flood Management provisions.

We need to work together to understand local risks, make solid choices, and invest in long-term community well-being.

## Your Input is Important!

Community involvement is central to the planning process. We hope you will consider engaging in one or more of the following:

### **PUBLIC OPINION SURVEY: November 22, 2022 - December 15, 2022**

To help ensure the Plan reflects community priorities and concerns, please take this quick online survey. Click here to take the survey: <https://www.surveymonkey.com/r/PDTD5DP>

### **ADVISORY COMMITTEE MEETINGS: November 30, 2022 - January 18, 2023**

Development of the Plan is overseen by an Advisory Committee made up of Town staff, residents, and other stakeholders. All meetings are open to the public and will be held in person at the Town Hall (*Development Services Conference Room located in the basement near the Building Department*). The tentative meeting schedule is posted below, but please refer to the Town's website calendar (<http://westerlyri.gov/calendar.aspx>) to ensure that the proposed meeting will occur as tentatively scheduled.

Meetings are scheduled from 9:00 - 10:30 am on the following dates:

Monday- November 21<sup>st</sup>

Wednesdays - November 30; December 7, 21; and January 11, 18

### **PUBLIC INFORMATIONAL MEETING: December 20, 2022**

A public informational meeting, hosted by the Advisory Committee, will be held on December 20, 2022 at 6:00pm in the Westerly Town Council Chambers. There will be a brief project presentation followed by an open discussion on the past occurrence of natural hazards and potential future areas/issues of concern.

## What is Hazard Mitigation?

FEMA defines hazard mitigation as, "any sustained action taken to reduce or eliminate long-term risk to life and property from natural hazards." Good planning before, during, and after disasters can protect our health, our daily ways of life, and promote equity in our community.

## What is Flood Management?

FEMA defines flood (floodplain) management as "a community-based effort to prevent or reduce the risk of flooding, resulting in a more resilient community." As inland and coastal flooding is a chronic problem in Westerly, it is important to identify measures that will help alleviate the impacts of flooding.

## Why is a HM&FMP Important?

As one of Rhode Island's communities most vulnerable to the impacts of climate change and sea level rise, the Town of Westerly understands that a well-developed Hazard Mitigation & Flood Management Plan is an important planning tool that can:

- identify goals to prepare and adapt to changing hazards and vulnerabilities
- engage community and regional stakeholders and link local and regional planning efforts
- educate community members to increase personal safety and resiliency
- improve opportunities for mitigation funding

While we can't prevent natural hazard events, such as hurricanes and nor'easters, pre-disaster planning and investments in preventative measures can reduce the impact of these events and improve post-disaster recovery.

## Want to Learn More?

Following are some links that will provide additional information related to the HM&FMP Project.

- [2018 Westerly Hazard Mitigation Plan](#)
- [2020-2040 Westerly Comprehensive Community Plan](#)
- [2019 Westerly Community Resilience Building Workshop Summary of Findings](#)
- [2022 Westerly Route 1 Corridor Report](#)
- [Westerly Geographic Information System \(GIS\)](#)
- [RI BeachSAMP and STORMTOOLS](#)
- [FEMA - Guide to Expanding Mitigation: Making the Connection with Public Health](#)
- [RIDOH - Climate Change and Your Health](#)

## Questions?

Questions regarding the Plan update can be directed to Alyse Oziolor, Principal Planner (401-348-2550; [aenziolor@westerlyri.gov](mailto:aenziolor@westerlyri.gov))

## Outreach Activity 2: Newspaper Articles

An article was published in the local newspaper, *The Westerly Sun*, on November 22, 2022, informing the public about the project and encouraging the public to participate in the planning process. A second article was published in *The Westerly Sun* on December 8, 2022, and a third article on December 21, 2022 after the Public Informational Meeting.



### Westerly Hazard Mitigation and Flood Management Plan resident survey

Nov 22, 2022

WESTERLY — The Town of Westerly is working to become more resilient to flooding and other natural hazards. Officials are currently preparing a Hazard Mitigation & Flood Management Plan with the goal of reducing the impacts from future disasters on the people and property in Westerly.

To help ensure the plan reflects community priorities, officials are asking residents and businesses to share opinions and participate in the planning process. There are several ways to become involved including taking a survey and attending an advisory committee meeting.

To learn about the project, visit [westerlyri.gov/546/Hazard-Mitigation](http://westerlyri.gov/546/Hazard-Mitigation). The webpage has information about the plan and how residents, businesses, and others interested in Westerly's resilience to natural hazards can provide input and feedback.

To take the online survey to help officials better understand hazard concerns, visit [surveymonkey.com/r/PDTD5DP](https://surveymonkey.com/r/PDTD5DP) before Thursday, Dec. 15. The survey will input will guide and focus mitigation activities to help lessen the impacts of future hazard events. The survey should take less than 10 minutes to complete.

Development of the plan is being overseen by a Hazard Mitigation & Flood Management Plan Advisory Committee made up of town staff, residents, local business, and other stakeholders. The committee meetings are posted on the project webpage and the town's upcoming meeting calendar, at [westerlyri.gov](http://westerlyri.gov).

All meetings are open to the public and will be held at the Westerly Town Hall. The next public informational meeting, hosted by the Advisory Committee, is scheduled for Tuesday, Dec. 20, at 6 p.m., in the Westerly Town Council Chambers.



---

## Westerly resident survey for Hazard Mitigation and Flood Management Plan

Dec 8, 2022

WESTERLY — The Town of Westerly is in the process of preparing a Hazard Mitigation & Flood Management Plan to reduce the impact from future disasters. Officials are asking residents and businesses to share opinions and participate in the planning process. Residents may take a survey before Thursday, Dec. 15, at [surveymonkey.com/r/PDTD5DP](https://surveymonkey.com/r/PDTD5DP).

Residents may also attend an advisory committee meeting at the Westerly Town Hall. The next public informational meeting, hosted by the Advisory Committee, is scheduled for Tuesday, Dec. 20, at 6 p.m., in the Westerly Town Council Chambers.

To learn about the project, visit [westerlyri.gov/546/Hazard-Mitigation](https://westerlyri.gov/546/Hazard-Mitigation). The webpage has information about the plan and how residents, businesses, and others interested in Westerly's resilience to natural hazards can provide input and feedback.



---

## Westerly looking for help developing new flood plan

By Ryan Blessing Sun staff writer Dec 21, 2022

WESTERLY — There's a community component to how Westerly plans for the next hurricane, flood or other natural hazard, and officials want the public to get involved.

The town is developing a 2023 Hazard Mitigation and Flood Management Plan, its blueprint for strengthening the town against potential climate-related incidents.

"This plan focuses on natural hazards as opposed to a terrorist attack or cyberattack," Kim Jacobs, the town's consultant on the plan, said. "By planning, we become proactive rather than reactive."

Westerly, like other coastal communities, has seen an increase in flood events and coastal erosion, tied to increased rainfall and sea level rise, Jacobs said.

An advisory committee of town staff, residents and other stakeholders is working on the plan, which is an update to its 2018 Hazard Mitigation Plan.

The Federal Emergency Management Agency requires municipalities to update their hazard mitigation plans at five-year intervals. FEMA also requires communities to have such a plan in order to receive federal government funding as FEMA aid, Jacobs said.

The plan will set updated goals and objectives and develop a mitigation strategy and action plan with a list of prioritized projects.

"We talked about ranking what hazards will impact more of the community," Jacobs said.

People tend to recall events such as Superstorm Sandy or the historic floods of March 2010 when talking about natural disasters. But the plan takes a broad view, looking at both small and large climate events, from brush fires to earthquakes, as examples.

"A lot of times if we have those in the plan and opportunities for grants come about, that allows the town to take advantage of a lot of money that's out there and do a lot more with a lot less," Jacobs said.

The current revisions expand the town's abilities to enact floodplain management.

"You have the Pawcatuck River, which is a big floodplain. You have your coastal area which is also a big floodplain," Jacobs said.

Westerly also takes part in a Community Rating System. It's a voluntary program that's part of FEMA's National Flood Insurance Program that allows communities to accumulate "points" that reduce flood insurance rates through NFIP.

"It'll reduce your rates by 5 or 10 percent, depending on what category you are," Jacobs said. Westerly, a category 7, receives a 10 percent NFIP reduction, she said.

Westerly's plan will also meet Community Rating System criteria in order to be eligible to accumulate more points under that system, Westerly Principal Planner Alyse Oziolor said.

"Our current plan that's in existence is losing out on a lot of credits for that activity for CRS," she said.

Public input is a key component of the work.

Jacobs said the committee's work will lead to an action plan, updated yearly.

"It's a really important thing to do, because it keeps you on track," she said.

The committee recently concluded an online survey from Nov. 22 to Dec. 15 and held a public informational meeting on Tuesday at Town Hall. Upcoming meetings open to the public are scheduled for Jan. 11 and 18, both at 9 a.m. in the Development Services Conference Room at Westerly Town Hall.

The town also has created an informational webpage for the plan, at [westerlyri.gov/546/Hazard-Mitigation](http://westerlyri.gov/546/Hazard-Mitigation).

A public review period of the draft plan will take place soon. The draft will be placed on the town's website for public feedback for three weeks and then it will go to a public hearing.

The Town Council can then choose to accept the plan as presented and then send it to both the Rhode Island Emergency Management Agency and finally to FEMA. The town also could opt to get conditional approval from FEMA first before it adopts the plan locally.

## Outreach Activity 3: Social Media Posts

Information about the project, public outreach activities, and other opportunities for the public to provide input and feedback was posted in various formats on various platforms, including the Town of Westerly's Website News Flash, Email Notices, and Facebook Posts, as well as a number of private Facebook pages.

### Westerly's News Flash & Facebook Page

Posted on: December 2, 2022

#### **Westerly, Be Prepared for Flooding & Natural Hazards**

Officials want your input. Visit the Project Webpage (<http://westerlyri.gov/546/Hazard-Mitigation>) for an overview of the project and details on public outreach activities, including an online Survey and public meetings.

Posted on: December 20, 2022

A public informational meeting, hosted by the Hazard Mitigation and Flood Management Plan (HM&FMP) Advisory Committee, will be held **TONIGHT** (Tuesday, December 20, 2022) at 6:00pm in the Westerly Town Council Chambers. There will be a brief project presentation followed by an open discussion on the past occurrence of natural hazards and potential future areas/issues of concern.

Posted on: February 8, 2023

#### **2023 Hazard Mitigation & Flood Management Plan Review**

The Draft HM&FMP is available on the Town's website (<https://westerlyri.gov/546/Hazard-Mitigation>) for viewing or printing, and a hard copy is available for viewing at the Planning Office on the first floor of Town Hall. Written comments and input on the Plan can be submitted to the Planning Office until February 24, 2023 at 1 PM EST in person or via email at: [HMFMP@westerlyri.gov](mailto:HMFMP@westerlyri.gov).

After the Public Review Period, the Town Council will host a public hearing, during which there will be an opportunity for the public to provide verbal input and feedback on the Plan. The date/time of this public hearing will be determined by the Town Council and advertised ahead of the meeting.

### Town's Emergency Management Webpage

Posted on: December 9, 2022

#### **2023 Hazard Mitigation & Flood Management Plan (HM&FMP)**

Westerly is preparing a 2023 Hazard Mitigation & Flood Management Plan (HM&FMP) with the goal of reducing the impacts from future disasters on the people and property in Westerly. The new plan will update the Town's 2018 Hazard Mitigation Plan (FEMA requires a 5-year update) and expand the focus on flood management. An Advisory Committee is preparing the plan, with the help of a consultant, and is seeking input from the public to inform the plan. Visit the Project Webpage (<http://westerlyri.gov/546/Hazard-Mitigation>) for an overview of the project and details on public outreach activities, including an online Survey and public meetings.

## Facebook Posts Beginning Nov 22, 2022

Members of the HM&FMP Advisory Committee posted information about the project and opportunities to participate in the planning process (such as taking the online Public Opinion Survey), on various Facebook pages including the following:

- ❖ Some Committee Members' private Facebook pages
- ❖ Southern RI Conservation District
- ❖ Watch Hill Fire District
- ❖ Westerly Concerned Citizens
- ❖ Westerly Police Department
- ❖ Westerly Public Schools
- ❖ Westerly - The Good Stuff
- ❖ Westerly Town
- ❖ Westerly Wire

## Email Notices Beginning Nov 29, 2022

In addition to the list of Coordinating Agencies and Organizations included in **Appendix 2-3** and individuals that subscribe through the Town website for notifications of meetings for the HM&FMP, members of the HM&FMP Advisory Committee sent emails to the following groups informing them about the project and opportunities to participate in the planning process.

- ❖ Age Friendly Westerly
- ❖ Health Impact Collaborative (HIC) of Greater Westerly
- ❖ Mooring Management Platform
- ❖ Watch Hill Fire District
- ❖ Westerly Land Trust
- ❖ Email from Planning Department to all Planning, EDC, and ARB Board members

## Outreach Activity 4: Radio Broadcast

Information publicizing the HM&FMP and how residents and interested stakeholders can provide input and feedback, was the topic on three WBLQ radio programs as well as broadcast in over 30 WBLQ public service announcements.

### WBLQ Radio Programs

**November 17, 2022:** Gina Fuller, District Manager for Southern Rhode Island Conservation District, spoke on SRICD's weekly show, *Resiliency Radio Hour*, on WBLQ Radio informing the public about the HM&FMP project kicking off.

**November 23, 2022:** Gina Fuller, District Manager for Southern Rhode Island Conservation District, spoke on WBLQ Radio Host Jean Gagnier's Program, *Chariho is Listening*, informing the public about the HM&FMP project and encouraged the public to participate in the online Survey.

**December 1, 2022:** Gina Fuller, District Manager for Southern Rhode Island Conservation District, spoke on SRICD's weekly show, *Resiliency Radio Hour*, on WBLQ Radio informing the public about the HM&FMP project and encouraged the public to participate in the online Survey.

### WBLQ Public Service Announcements

WBLQ assisted the Advisory Committee in getting the word out to the public about the HM&FMP and opportunities to participate in the process, including taking the online survey. Prior to the survey ending on December 15, 2022, WBLQ broadcast public service announcements, similar to the following, over 30 times.

#### **Draft Public Service Announcement:**

The Town of Westerly needs your help. Westerly is looking to become more resilient to flooding in other natural hazards. Officials are currently preparing a Hazard Mitigation & Flood Management Plan. The goal is to reduce the impacts from future disasters. To help ensure the plan reflects community priorities, officials are asking residents and businesses to share opinions and participate in the planning process. There are many ways you can become involved:

- there is a project webpage; the webpage can be found at [WesterlyRI.gov](http://WesterlyRI.gov) - from there, search: *hazard mitigation*
- there are Hazard Mitigation & Flood Management Plan Advisory Committee meetings; the committee meetings are posted to the project web page and the Towns upcoming meeting calendar; all meetings are open to the public and will be held at the Town Hall
- there is an online survey people can take to help officials better understand hazard concerns; that survey will be available online until December 15, 2022; the survey should take less than 10 minutes to complete; the survey can be found on the hazard mitigation page at [WesterlyRI.gov](http://WesterlyRI.gov)
- a public informational meeting hosted by the Advisory Committee is scheduled for December 20, 2022 at 6 PM in Westerly Town Council chambers

# Outreach Activity 5: Informational Posters


Several styles of posters were created, with input from the Advisory Committee, to publicize the project and the various ways that the public could become involved. Approximately 15 posters were put up in Town buildings and around Town in high pedestrian traffic areas including: Fresh Cup; Honey Dew; Laundry Mat (Granite St/East Ave); Main St Laundry; North End Suds; PCE/Joy Fellowship; Senior Center; SRICD/Fresh Harvest Kitchen; Stop and Go (Main St); The Wine Store; Westerly Library.

The posters were also sent out to Town Departments, the school community via the School Superintendent, and various other individuals and groups.

## Westerly, Be Prepared For Flooding and Other Natural Hazards

*We need your help!*


The Town of Westerly is working to become more resilient to flooding and other natural hazards. We are preparing a Hazard Mitigation & Flood Management Plan (HM&FMP) to minimize our community's risks. To help ensure the Plan reflects community priorities, we are asking residents, businesses, and others interested in the resilience of our community to share your opinions through an online survey.



**ONLINE SURVEY**  
Take this quick online SURVEY to help us better understand your hazard concerns. Your input will guide and focus our mitigation activities to help lessen the impacts of future hazard events for you and your family. The survey will be available online from **November 22 – December 15, 2022** and should take **under 10 minutes** to complete. You can access the survey by scanning the QR code to the left, through a link on the Project webpage (below), or by typing into your browser: <https://www.surveymonkey.com/r/PDTD5DP>

**TOWN WEBSITE – PROJECT WEBPAGE**  
Development of the Plan is overseen by an Advisory Committee made up of Town staff, residents, and other stakeholders. The Advisory Committee meetings, opportunities for public input and feedback, and other information about the Plan can be found on the Project Webpage: <https://westerlyri.gov/546/Hazard-Mitigation>

**PUBLIC INFORMATIONAL MEETING**  
A public meeting, hosted by the Advisory Committee, will be held on December 20, 2022 at 6:00pm in the Council Chambers at the Westerly Town Hall. There will be a brief project presentation followed by an open discussion on the past occurrences of local natural hazards and potential future areas/issues of concern.




**THANK YOU!**

Example of two of the posters

## Westerly, Be Prepared For Flooding and Other Natural Hazards

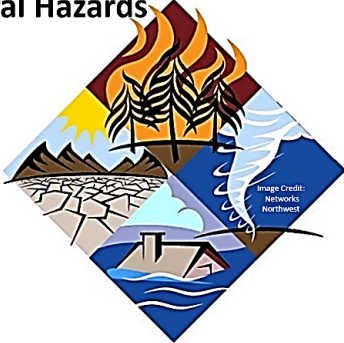
*We need your help!*

The Town of Westerly is working to become more resilient to flooding and other natural hazards. We are preparing a **Hazard Mitigation & Flood Management Plan (HM&FMP)** to minimize our community's risks. To help ensure the Plan reflects community priorities, we are asking residents, businesses, and others interested in the resilience of our community to share your opinions through an online survey.



**ONLINE SURVEY**  
Take this quick online SURVEY to help us better understand your hazard concerns. Your input will guide and focus our mitigation activities to help lessen the impacts of future hazard events for you and your family. The survey will be available online from **November 22 – December 15, 2022** and should take under 10 minutes to complete. You can access the survey by scanning the QR code to the left, through a link on the Project Webpage: <https://westerlyri.gov/546/Hazard-Mitigation> or by typing into your browser: <https://www.surveymonkey.com/r/PDTD5DP>

**THANK YOU!**



# Outreach Activity 6: Public Opinion Survey & Results

An integral element in hazard mitigation planning is broad public participation. Information provided by residents, businesses, and other stakeholders can illuminate local hazard concerns, gauge a community's awareness and preparedness for hazards, and inspire innovative solutions to reduce impacts of future hazard events. As online public opinion surveys are a highly accessible mechanism for gathering qualitative and quantitative data to inform the planning process, the Advisory Committee published an on-line survey (November 22 - December 15, 2022) hosted by SurveyMonkey.com.

The survey was promoted through the Town's website, two newspaper articles, posts on a number of Facebook pages, and project posters hung in high pedestrian traffic areas in Town and sent out to the School Community and other groups. The survey was also publicized through emails sent to various groups including the 13 local government & school district groups and the 37 agencies and organizations outside of Westerly's governmental structure listed in **Appendix 2-3**. Survey results from the 204 respondents were used by the Committee to help guide and focus mitigation planning efforts.

## Summary of Survey Results:

The vast majority of the survey respondents were Westerly residents (90.1%), with over half of the respondents residing/working in voting district 3604 (southwest portion of Westerly). A significant portion of Voting District 3604 the Special Flood Hazard Area (SFHA), which is comprised of the VE or AE/A Flood Zones. This may in part account for over a third of the respondents residing in the SFHA (37%).

Most people were extremely concerned about **Coastal Flooding & Coastal Erosion** (51%) and then **Wind-Related Hazards** (40%). The weighted score produces the following ranking:

Rank	Hazard	Weighted Score
1	Coastal Flooding/Erosion	4.16
2	Wind-Related	4.01
3	Vector-Borne (Ticks/Mosquitoes)	3.40
4	Winter-Related	3.28
5	Inland Flooding	3.16

Rank	Hazard	Weighted Score
6	Drought	3.06
7	Respiratory (Flu/Coronavirus)	3.00
8	Heat	2.82
9	Wildfire	2.41
10	Earthquake	1.44

The majority of participants (165 out of 204 – or 81%) indicated that either they or someone in their household had been negatively impacted by a natural disaster while living or doing business in the Town of Westerly. More people were impacted by **Wind-Related Hazards** (59%), **Coastal Flooding/Erosion** (46%), **Influenza/Coronaviruses** (40%), and **Winter-Related Hazards** (36%).

With regard to which of the Town's resources might be most at risk from natural hazards over the next two decades, the weighted score produces the following ranking:

Rank	Category	Weighted Score
1	Infrastructure	3.64
2	Environmental	3.54
3	Structural	3.50
4	Economic	3.28

Rank	Category	Weighted Score
5	Cultural/Historic	2.90
6	People	2.52
7	Governance	2.45

In terms of communication preference, respondents indicated their top 3 preferences for receiving information about what to do BEFORE a disaster were email notification (76%), text messaging (71%), and Town website (43%). In terms of communication DURING/AFTER a disaster, the top 3 preferences were text messaging (83%), email notification (73%), and Town website (48%).

Respondents indicated that they take a number of steps to prepare for natural hazard events. Over **75%** of the respondents indicated they have purchased a homeowners/renter's insurance policy, installed smoke/carbon monoxide detectors, and kept gutters clean and pointed downspouts away from their house/business. Over **50%** have signed up for CodeRED, purchased and know how to use ABC class fire extinguishers, regularly remove dead/dying trees or vegetation from the yard, grade lawn away from house/business, and don't allowed mulch to sit up against siding.

The survey generated 65 responses to the question of what should the Town of Westerly do to mitigate the impacts from natural hazards. These responses have been included in their entirety (refer to Question 7). Some of the key take-aways are:

- Limit construction in high risk areas (coastal zones, floodplains, wetlands) & retreat from high risk areas (using plans & policy/regulations)
- Conduct more education & outreach
- Maintain & upgrade roads & storm drains
- Move or protect critical infrastructure (including burying electric lines)
- Implement nature-based solutions (dunes, living shorelines, etc.) to replace structures in vulnerable areas
- Create a sea level rise (SLR) preparedness plan
- Reduce impervious surface in Town
- Construct sewer in flood-prone areas and create a septic system monitoring program
- Maintain and upgrade erosion protection for structures (seawalls, etc.)

Following is the Survey introduction and questions along with a summary of the responses.

## Westerly RI - Hazard Mitigation & Flood Management Plan Public Opinion Survey & Results

We need your help!

The Town of Westerly is working to become more resilient to flooding and other natural hazards. The Town is currently preparing a Hazard Mitigation & Flood Management Plan (HM&FMP) to identify and assess our community's risks, and determine ways to effectively minimize and manage those risks. More information about the Plan can be found on the Town's website: <https://westerlyri.gov/546/Hazard-Mitigation>

We'd like you to share your opinions and participate in the planning process. Please take this quick SURVEY to help us better understand your hazard concerns. Your input will help guide and focus our mitigation activities with the goal of lessening the impacts of future hazard events for you and your family.

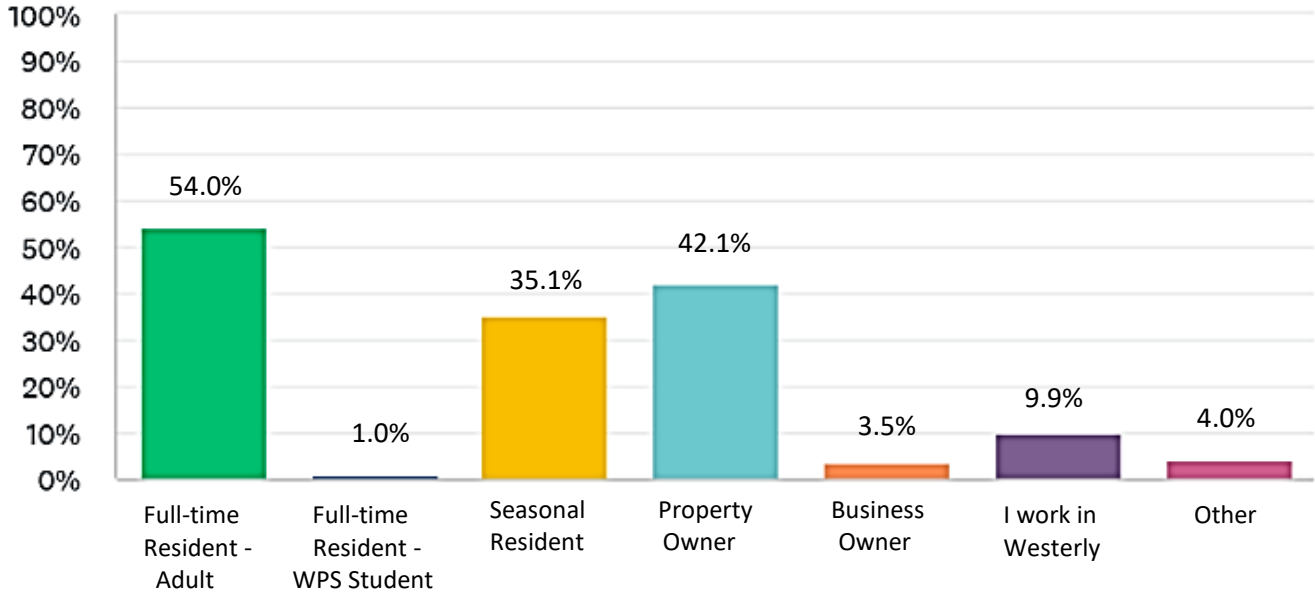
**The survey should take less than 10 minutes to complete.** Although we encourage you to answer all of the questions, the survey does allow for questions to be skipped.

Thank you for your input!

*Mitigation is the effort to reduce loss of life and property by lessening the impact of disasters. Effective mitigation requires that we all understand local risks, make hard choices, and invest in long-term community well-being. Good planning before, during, and after disasters can protect our health, our daily ways of life, and promote equity.*

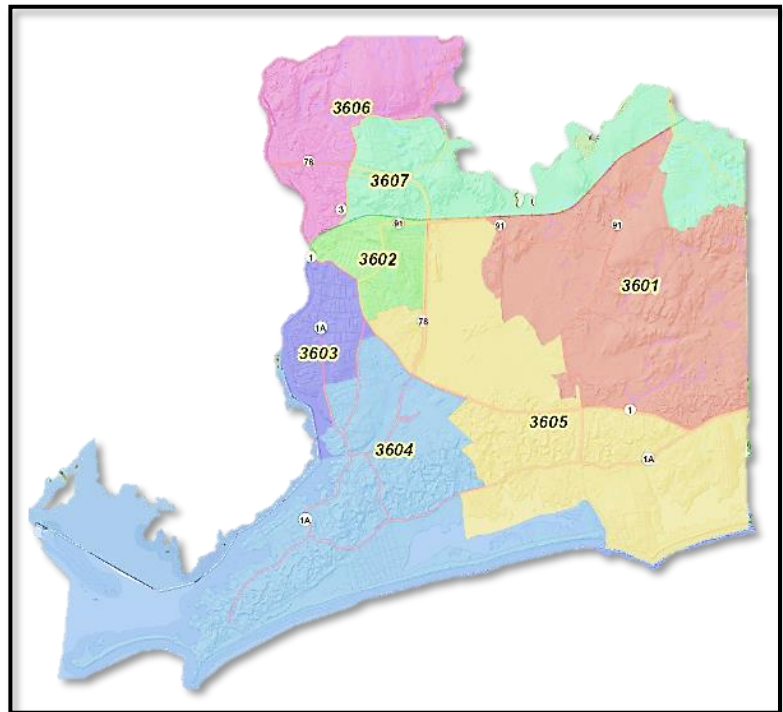
- FEMA

1. What is your connection to the Town of Westerly? Please check all that apply.

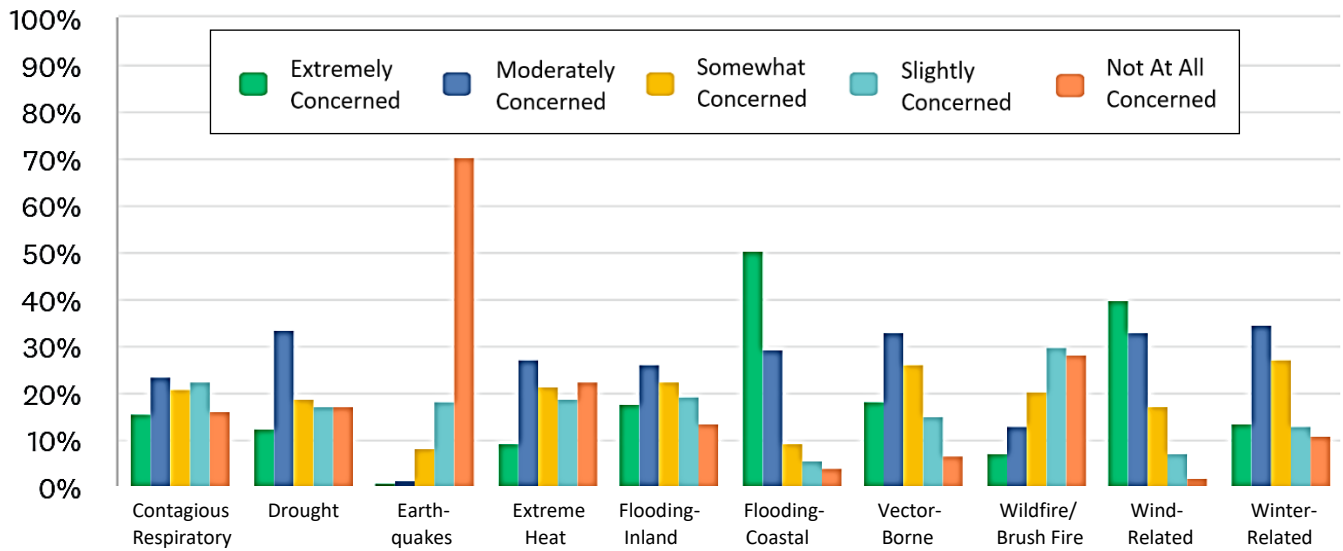


2. In an effort to determine if the responses to the survey represent constituents Town-wide, please check in which voting district your home or business is located. If you are not sure please approximate based on the map provided.

- Voting District 3601 – 3.0%
- Voting District 3602 – 6.0%
- Voting District 3603 – 6.5%
- Voting District 3604 – 57.2%
- Voting District 3605 – 12.4%
- Voting District 3606 – 3.5%
- Voting District 3607 – 4.5%
- I do not live/work in Westerly – 7.5%

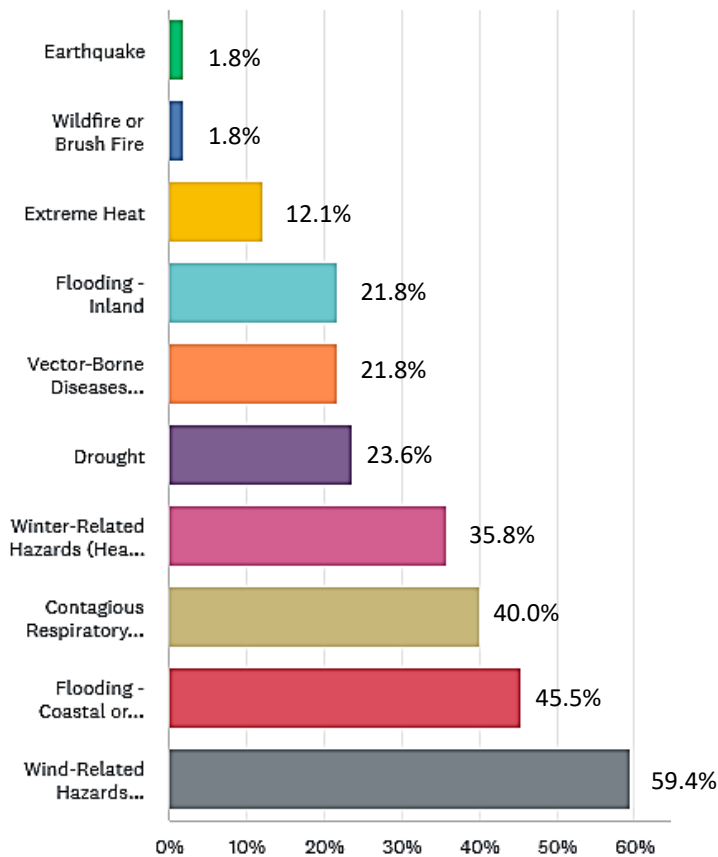


3. Please rank how concerned you are about the following natural hazards.



	EXTREMELY CONCERNED	MODERATELY CONCERNED	SOMEWHAT CONCERNED	SLIGHTLY CONCERNED	NOT AT ALL CONCERNED	TOTAL
Contagious Respiratory Illness Caused by Influenza Viruses or Coronaviruses	15.9% 32	23.9% 48	20.9% 42	22.9% 46	16.4% 33	201
Drought	12.5% 25	33.5% 67	19.0% 38	17.5% 35	17.5% 35	200
Earthquake	1.0% 2	1.5% 3	8.6% 17	18.3% 36	70.6% 139	197
Extreme Heat	9.6% 19	27.3% 54	21.7% 43	18.7% 37	22.7% 45	198
Flooding - Inland	18.0% 36	26.5% 53	22.5% 45	19.5% 39	13.5% 27	200
Flooding - Coastal or Coastal Erosion	50.5% 102	29.7% 60	9.4% 19	5.9% 12	4.5% 9	202
Vector-Borne Diseases Transmitted by Ticks or Mosquitoes	18.3% 37	33.2% 67	26.2% 53	15.3% 31	6.9% 14	202
Wildfire or Brush Fire	7.5% 15	13.1% 26	20.6% 41	30.2% 60	28.6% 57	199
Wind-Related Hazards (Tropical Storms and Hurricanes, High Winds, Tornadoes)	39.8% 80	33.3% 67	17.4% 35	7.5% 15	2.0% 4	201
Winter-Related Hazards (Heavy Snow, Ice, Extreme Cold)	13.9% 28	34.8% 70	27.4% 55	12.9% 26	10.9% 22	201

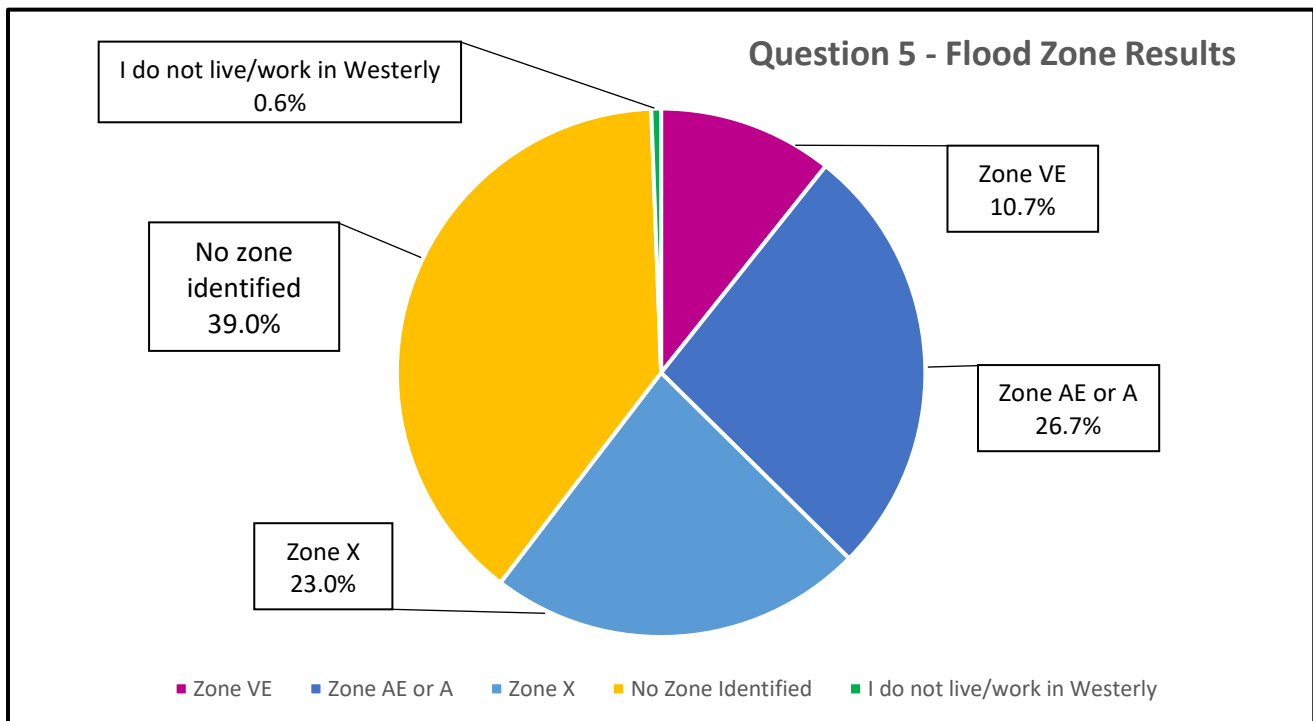
4. Have any of the following types of natural hazard events negatively impacted you or someone in your household while living/doing business in the Town of Westerly? Please check all that apply.



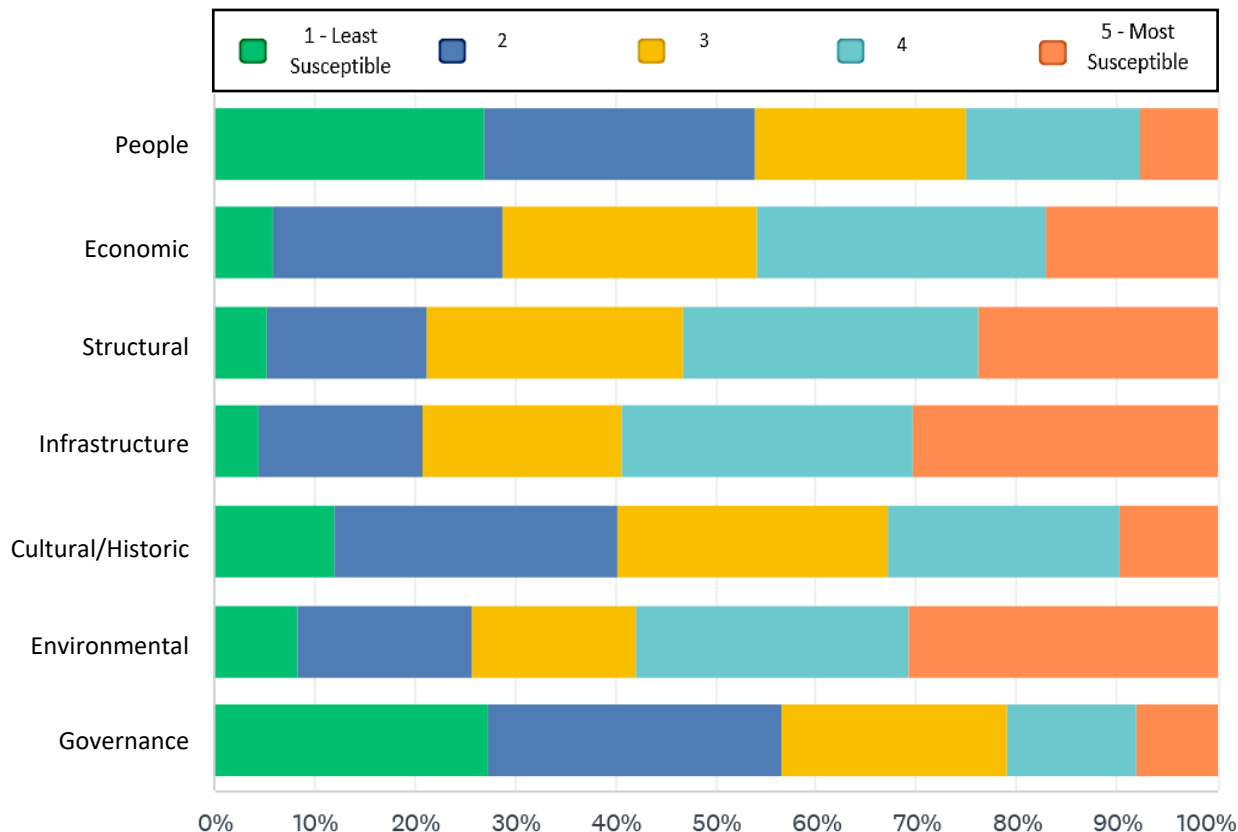
5. Following the steps below, please determine if either your home or business is located in a FEMA Flood Zone.

**Steps:**

- Click the Link – Westerly GIS Map
- Near the top left of the page, select “Search” (binocular icon) and enter your house # and street name and then click the find button
- The map will show your property card – click “Zoom to GIS”
- Near the top right of the page, select the drop down menu that says “Map Layer” and at the bottom of the list check the box to the right of “FEMA Mapping”
- Identify if your property is in the VE, AE, A, X flood zone (If it is difficult to tell, zoom out a bit using the minus button at the top left of the page)
- A legend identifying those four flood zones has been provided below



6. Which of the following Town resources do you think may be harmed by natural hazards in the next two decades? On a scale of 1 to 5 (5 being most susceptible), please rate each category based on how vulnerable/susceptible you think it is to potential impacts from natural hazards.

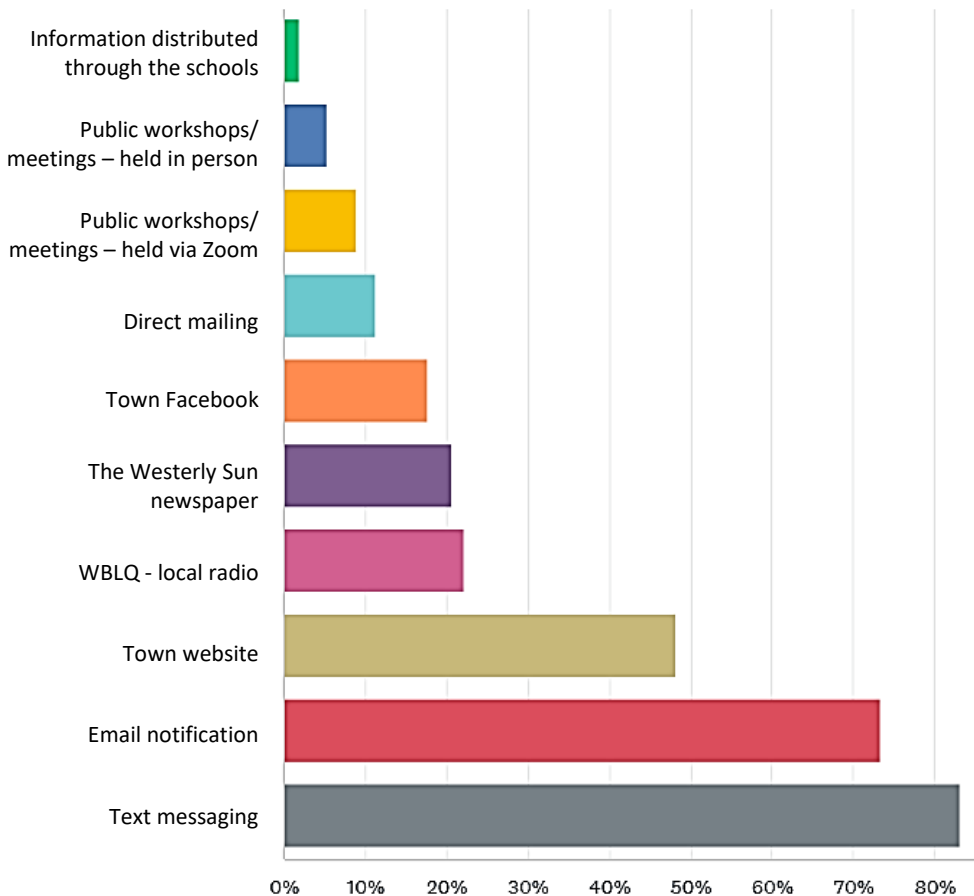
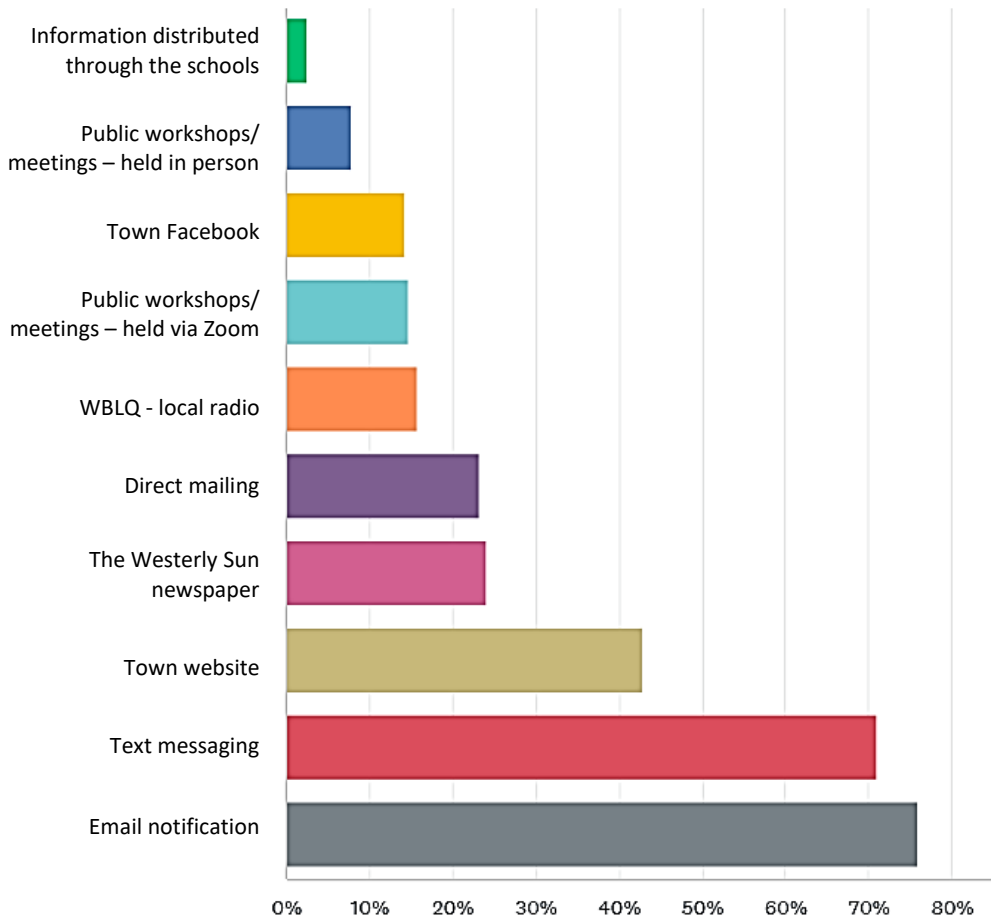


	1 LEAST	2	3	4	5 MOST	TOTAL
People: Loss of life, injuries, compromised health	27.0% 54	27.0% 54	21.0% 42	17.5% 35	7.5% 15	200
Economic: Business interruptions/closures, job losses, etc.	6.0% 12	22.9% 46	25.4% 51	28.9% 58	16.9% 34	201
Structural: Damage to public and private buildings	5.4% 11	15.8% 32	25.6% 52	29.6% 60	23.6% 48	203
Infrastructure: Damage to roads, bridges, utilities, etc.	4.5% 9	16.3% 33	19.8% 40	29.2% 59	30.2% 61	202
Cultural/Historic: Damage to historic sites	12.1% 24	28.1% 56	27.1% 54	23.1% 46	9.5% 19	199
Environmental: Damage, contamination, or loss of forests, wetlands, floodplains, etc.	8.4% 17	17.3% 35	16.3% 33	27.2% 55	30.7% 62	202
Governance: Ability to maintain order and/or provide public amenities and services	27.4% 55	29.4% 59	22.4% 45	12.9% 26	8.0% 16	201

7. OPTIONAL - What should the Town of Westerly do to reduce the Town's potential harm from natural hazards in the future?

Please note: Because of the tremendous response, the 65 comments received for question 7 have been included in their entirety at the end of the survey results (after question 11)

8. To assist the Town in better communicating about what to do **BEFORE** a disaster, please select the top three (3) methods by which you would prefer to receive information.



9. To assist the Town in better communicating about what to do **DURING/AFTER** a disaster, please select the top three (3) methods by which you would prefer to receive information.

10. Which of the following steps has your household/business taken to prepare for a natural hazard event?

Please check all that apply. My household/business has:

**\*\*Table shows the number of people who checked each item**

# of people	My household/business has:
169	Purchased a homeowners/renter's insurance policy
124	Signed up for CodeRED emergency alerts through the Town of Westerly website or this direct link: CodeRED (if you do it right now – it counts!) CodeRED is an emergency notification service by which Public Safety can notify residents and businesses by telephone or cellular phone about emergency situations. The system is capable of sending messages to specific neighborhoods or the entire community.
103	Purchased and know how to use ABC class fire extinguishes
50	Prepared a disaster supply kit (for the first 72-hours of a disaster) with some or all of the following: basic medical supplies; food and water for people and pets; plates/cups/utensils/manual can opener; cash; change of clothes/shoes; list of prescriptions; list of key contact numbers; flashlight with extra batteries; whistle; face masks; hand sanitizer; toilet paper and other toiletries; plastic sheeting and duct tape; garbage bags and plastic ties; wrench/pliers; blankets; solar-powered cell phone charger
38	Purchased flood insurance through National Flood Insurance Program (NFIP)
38	Discussed with my family/employees an emergency plan and have a designated meeting place or a check-in procedure should our home/business need to be evacuated
28	Purchased flood insurance through private insurer
8	Discussed the benefit of some of the above items with landlord/condo association/neighborhood organization

11. Has your household/business taken any of these additional steps to prepare for a natural hazard event?

Please check all that apply. My household/business has:

**\*\*Table shows the number of people who checked each item**

# of people	My household/business has:
179	Installed smoke/carbon monoxide detectors
151	Kept gutters clean and pointed downspouts away from my house/business
136	Regularly remove dead/dying trees or vegetation from the yard
109	Graded my lawn away from my house/business (to minimize pooling of water adjacent to the structure)
95	Not allowed mulch to sit up against my siding (mulch attracts termites and other pests)
79	Installed a backup generator
68	Installed high impact windows or doors to withstand high winds
62	Planted trees or other vegetation to reduce heat on my property
46	Elevated some or all of the following above flood level: electrical outlets/switches, generator, water heater, washing and drying machines
42	Installed a sump pump or foundation vents
35	Installed a rain garden, removed pavement/other hardscape, or implemented other measures to manage rain water on my property
26	Applied flood-proofing coatings or sealants
17	Elevated my home/business on pilings or piers

**\*\* 7. OPTIONAL - What should the Town of Westerly do to reduce the Town's potential harm from natural hazards in the future?**

**Total Comments - 65**

- 1) restrict building new waterfront structures since high tide is getting closer to Atlantic Ave and other water front streets.
- 2) Assess the Town Beach Pavilion area erosion and address the need to potentially move the beach pavilion away from the shore.
- 3) More public education - teaching students and the community about the science of climate change and sea level rise and how to take action in our homes and on our property to minimize the threat of natural hazards.
- 4) It's really quite simple - the town of westerly and in fact the world population far exceeds natures ability to support the population we need to discourage more and more people shortages of water, climate change, food insecurity, peak oil, health hazards, inadequate infrastructure ( of all types, poverty, overwhelmed federal, state and local budgets, crime, war, and on and on ...all boils down to too many people on the planet competing for natural resources- try and fix that and stop trying to coddle every challenge with other people's money spending on absurd challenges takes away from spending on opportunities for excellence
- 5) Consider raising the bulkheads and coastal areas. Run sewer to areas prone to flooding.
- 6) enforce fema rules
- 7) Consider a surge gate between Osbrook Point and Watch Hill.
- 8) Provide public assistance to those who are endangered by natural hazards.
- 9) Don't allow building/rebuilding flimsy structures right on a barrier beach.
- 10) Limit construction in vulnerable coastal zones. Stop issuing permits for filling swamps/wetlands. Advocate more tree trimming around power/cable lines. Advocate/fund additional dredging of coastal salt ponds.
- 11) Long term plan for Main Street south, downtown and possibly bits of Wilcox Park.
- 12) Quit allowing over development. Quit giving variances for more house on lots. Quit allowing property owners to fill in wetlands. Do a deep dive and prepare a sea level rise preparedness plan.
- 13) Hold regular drills/practice plans involving government, EMS, FD, PD, hospital.
- 14) Better protection of pervious surface; monitoring of waste/septic systems (put in public sewer system by the beach and wetlands); protect the beaches from erosion; address flooding; better public communication and awareness of hazards; Town Council to make it a priority
- 15) Upgrade and make higher sea walls.
- 16) put public sewers in the misquamicut fire district such that sewage is not released into the environment during storms.
- 17) Stop being influenced by the corrupt corporate media
- 18) Limit new construction especially on or near wetlands
- 19) Work on flooding in the Breen Road area.
- 20) Make sure roads and highways are maintained
- 21) Wetland preservation. Less concrete and asphalt on roads, parking lots and driveways
- 22) Address flooding happening now in WH and up the river to the Town.
- 23) Nothing, government should stay out of trying to control natural hazards. They are out of their control and frivolously waste tax dollars that could be better used in the community.
- 24) Stop building/paving. Promote the wetlands conservation.
- 25) Use Common sense.
- 26) Ban rebuilding in flood zones or along shoreline if property is severely damaged.
- 27) Continue to have the superb first responder services that it does
- 28) Plan and mitigate where possible.
- 29) Rapid response team to clean up and repair the inevitable hurricane damage. Public safety plan post hurricane to prevent looting and fly by night contractors. Dredge anywhere necessary to mitigate possible flooding.
- 30) Continue efforts to improve Watch Hill's protection from severe flooding. Seawall may need work. Holdredge parking lot and boaters lot are vulnerable. The Watch Hill Fire District has been very helpful with crisis planning.
- 31) Reinforcing and increasing the sea wall in Watch Hill.
- 32) As a community, Westerly should do as much as it can to implement actions that take climate change into consideration.
- 33) Invite Mother Nature for coffee and have a heart to heart.
- 34) Move or protect critical infrastructure to ensure quick restoration of utilities, safety after a natural hazard. Make efficient and practical evacuation plans where needed.
- 35) Do not rebuild on natural hazard sites - let nature take its course. However, I do believe the beaches and shoreline need to be maintained (minus structures).
- 36) Bury the electric lines... build the bridge back over the tracks, have plows ready to go, have small Katz ready for sidewalk. Stop salting unnecessarily.
- 37) enforce building codes. Do not develop areas at risk.
- 38) Regularly help with dune maintenance in public areas and also offer to help with the same on private property (bring in

- sand, plant beach grasses)
- 39) Honor the Comprehensive Plan of 2020 regarding building, additions on existing properties, truly limit variances to existing properties, especially in high density areas to "least remedy...", follow zoning guidelines as they align with (*please note: although it appears this comment has been cut off, this is the entirety of the comment*)
  - 40) Urge lawmakers to vote to support common sense environmental laws.
  - 41) Minimize rebuilding of destroyed structures on coast; develop plans for coastal retreat
  - 42) Establish information processes to monitor
  - 43) Protect wetlands
  - 44) Include indigenous community members in the conversation. They will have unique and valuable perspectives and offer a number of necessary solutions.
  - 45) Insure infrastructure is maintained and modernized. Ensure townsfolk have multiple locations to shelter in case of an emergency. Doing public outreach programs (meet and greets) with westerly emergency responders to help build trust in the community.
  - 46) Upgrade improvements to electric/gas infrastructure and water/sewer system. Consider implementing a paid full time emergency service for fire/rescue and ambulance.
  - 47) I don't see how viruses are classified as natural hazards. Should be a different survey.
  - 48) Slow development, enhance capacity of natural landscapes to absorb flooding and other weather related risks. Establish riparian buffers along streams and rivers. Institute a tree tax. Encourage more open space in overall development plan for municipality
  - 49) Better plowing and winter maintenance of roads and sidewalks. Better care of the roads in general, most of them are pot hole city.
  - 50) The storm drains should be better maintained/cleaned out
  - 51) Improve emergency management program to educate the public and prepare emergency responders better. Build a more resilient coastal area.
  - 52) It's too late for Westerly. They've gone woke
  - 53) Work with nature, not fight nature: implement projects that REMOVE vulnerable structures that require costly maintenance, favoring projects that build resiliency through nature-based solutions (EG living coastlines vs sea walls)
  - 54) As being done all over USA to drain flooded wetlands so they can absorb and release slowly storm floods, remove the dam at Potter Hill. Funds are available at no cost to the Town.
  - 55) Develop a long-range policy of gradual retreat from the coastline and especially within flood zones.
  - 56) Identify and assess high-risk town property and infrastructure. Develop short-term (18 mo.), intermediate-term (2 years), and long-term (5 years) hazard prevention and mitigation plan/s.
  - 57) Remove impervious surfaces, site buildings accordingly
  - 58) Better Communication and public education
  - 59) Minimize rebuilding in barrier beach areas after storm disasters. There are beachfront properties that should not have been allowed to be rebuilt/repared after Sandy
  - 60) Remove obstructions at stillman ave bridge
  - 61) \*Better regulate flood prone areas and possibly adopt regulations that prevent building and prevent REBUILDING in high hazard locations. \*Adopt plans to deal with sea level change including provisions for retreating/removing/relocating infrastructure from these areas. \*Review and improve evacuation routes and ensure there are multiple routes available from primary areas in case one or more routes become impassable. During one storm, East Ave was blocked by downed trees and Beach Street was flooded by tidal surge by the Westerly Yacht Club. Perhaps, it would be appropriate to raise Beach Street's roadbed elevation at this area since it's a main egress thoroughfare. \*Acquire property above and adjacent to the flood elevation/expected sea level rise boundaries to provide a perimeter of undeveloped land that may be of use later if coastal retreat becomes necessary. \*Start funding a "rainy day" account now to deal with critical infrastructure needs that may arise later during hazard events. Ensure legislation is in place to prevent the funds from being raided for non-related uses.
  - 62) retreat from the coastline
  - 63) Enforce coastal construction standards for storm erosion prevention and mitigation
  - 64) Develop retreat plans with the state and federal government that allows for the purchase of properties in the Salt Pond and beach areas as well as areas along the river and little Narragansett Bay. Most of our coastal businesses and residences are seasonal and in areas we should not encourage development.
  - 65) The Town should continue to diligently pursue opportunities to implement mitigation activities in the form of policies (ex. protecting wetlands and floodplains ); projects (ex. stormwater management - including tree wells, shade structures at public facilities), and educational/outreach programs.

**Thank you** for participating in the Town of Barrington Hazard Mitigation & Flood Management Plan Public Opinion Survey. Your responses are very important! Survey results will be used by the Project Steering Committee to guide and focus mitigation planning efforts. A summary of the survey results will be included as an Appendix to the Plan.

# Outreach Activity 7: Public Informational Meeting

A public informational meeting, hosted by the HM&FMP Advisory Committee, was held on December 20, 2022 to inform the public about the Plan and to promote discussion about creating a safer, more resilient community, and to solicit input for consideration and integration into the development of the Plan. The Town's Project Consultant directed a PowerPoint presentation followed by an open public discussion/Q&A period.

## What is hazard mitigation and why do we need a Plan?

Hazard Mitigation is defined as any sustained action taken to reduce or eliminate the long-term risk to life and property from hazard events.



### Why Create a Hazard Mitigation Plan?

- By planning ahead Westerly becomes pro-active rather than reactive
- Helps the community identify goals to prepare and adapt to changing hazards and vulnerabilities
- Provides an opportunity to prioritize preventative measures (projects, initiatives, policies) to reduce property damage and loss of life associated with natural hazards; and to expedite disaster recovery
- Provides an opportunity to engage/educate the community to risks associated with natural hazards
- Saves the community money by instituting mitigation measures to protect against natural hazards
- Eligible for FEMA Funding

KMJ - CE/RP

Example of two of the slides

## Why expand the Plan to include Flood Management?

- With extensive coastline (9± miles) and substantial coastal and inland floodplain areas, Westerly is highly vulnerable to the impacts from flooding
- Flood risks will continue to grow in the coming decades due to sea level rise and other anticipated deleterious effects of climate change
- The Town participates in the Community Rating System (CRS) Program
- Creating the Plan based on the CRS planning process for floodplain management allows the Town to maximize CRS credit for this process, which has the potential of reducing premiums for residents and businesses who purchase flood insurance through NFIP



Flooding from Tropical Storm Henri  
Watch Hill Court  
August 22, 2021  
Photo Credit:  
WJAR/turnto10.com

KMJ - CE/RP

## **Following is a brief overview of the public discussion/Q&A period.**

- Peter Ogle: Mr. Ogle indicated that the spring 2010 floods were a wake-up call for Westerly in terms of the vulnerability of the Stillman Avenue Bridge/Canal Street area. He suggested it would be beneficial for the Town to do a hydrology study to assess the impacts of flooding, potential obstructions, and mitigation measures for this area.

Advisory Committee member, Gina Fuller, who is the District Manager of the Southern RI Conservation District, indicated that there is a NRCS-funded Wood-Pawcatuck Watershed study currently underway that will include a full hydrologic model for the watershed, including an assessment of that area of Westerly. The detailed analysis will culminate in the end of 2023, but a public meeting for the PL-566 project will be held on January 26, 2023. She also noted that in 2010 Blue Pond dam let go and went over top of the Potter Hill Dam, taking debris with it, which got stuck in the Stillman Ave bridge. She said because Potter Hill Dam raises water levels upstream, Chapman Pond/Pound Road were already full of water and were not able to provide flood storage capacity.

- Joy Cordio: Ms. Cordio identified that retreat may be necessary in some areas due to sea level rise, and was wondering what education or other steps are or should be taken. She also inquired whether disaster response is included in the Hazard Mitigation Plan.

Various Advisory Committee members offered that in some areas it may make the most sense to retreat and more public education and awareness about flood hazards and sea level rise should be undertaken. Gina Fuller stated that the barrier island should move and change and that the State says we should retreat from that area. A study by Northeastern students found that the areas subject to sea level rise are only a small portion of the tax base, and that financial investment into keeping that area may not be worthwhile. The TA noted that the Town of Warren has low-income apartments in low-lying areas and is making plans to retreat from those areas. She also explained that the target of the Plan is pre-disaster mitigation and preparedness, but that some action items can address response. Primarily the COOP is the plan for disaster response.

- Peter Ogle: Mr. Ogle indicated that some communities document the sand being deposited by storms onto the breachways, in an effort to be compensated for the maintenance.

Advisory Committee member and Town Manager, Shawn Lacey, indicated that while documenting storm damage is important, even when the storm is designated as a state or federal disaster, it can be difficult to get reimbursed by FEMA and sometimes the amount of staff time required for the paperwork might outweigh the reimbursement for the repair work.

- Ryan Blessing: Mr. Blessing asked whether a public body will approve the plan.

The TA explained that the Committee will first approve a Draft plan for public dissemination. The Draft plan will be made available to the public-at-large for a period of three weeks, ending in a public hearing. All feedback and comments during the public review period and at the public hearing (from the public-at-large and the Town Council) will be reviewed and the draft plan will be modified as deemed appropriate. The updated draft will be sent to RIEMA/FEMA for review and approval. The Town Council will adopt the plan either at the public hearing or after the plan goes through the RIEMA/FEMA review process.

## Outreach Activity 8: Press Release

The following was published in The Westerly Sun February 7, 2023 Edition.



### **Public comment sought for Westerly's draft hazard mitigation & flood management plan**

Feb 7, 2023

WESTERLY — In accordance with the Federal Disaster Mitigation Act of 2000, the town of Westerly is updating its hazard mitigation plan and will host a three-week public review period from Tuesday, Feb. 7, through Monday, Feb. 27. A public hearing will also be scheduled.

The Draft Hazard Mitigation & Flood Management Plan is an update and expansion of the town's 2018 Hazard Mitigation Plan and provides a mitigation strategy roadmap for the next five years. It was completed by a civil engineer and resilience planning consultant under the guidance of an advisory committee consisting of town staff, residents, business owners, conservation organizations, and other stakeholders. The plan also integrates comments and input from the community.

The advisory committee received responses from 204 residents, business owners, and other stakeholders to an online public opinion survey in November/December 2022. All comments were reviewed and many of the suggestions have been incorporated in the 2023 Draft Action Plan.

The overall purpose of the Hazard Mitigation & Flood Management Plan is to strengthen the town's resilience to various natural hazards, including flooding and hurricanes. By understanding the potential threats from natural hazards and the effectiveness of the mechanisms already in place, the advisory committee developed a mitigation strategy that capitalizes on existing strengths of the town and improves or adds new capabilities. The mitigation strategy includes an action plan intended to guide the town's day-to-day operations and long-term approach to reduce the impacts of hazards and improve flood management.

The draft plan will be available on the town's website ([westerlyri.gov/546/Hazard-Mitigation](http://westerlyri.gov/546/Hazard-Mitigation)) for viewing or printing, and a hard copy will be available for viewing at the planning office on the first floor of Town Hall, 45 Broad St. Written comments and input on the plan can be submitted to the planning office until Feb. 24, at 1 p.m., in person or via email at: [HMFMP@westerlyri.gov](mailto:HMFMP@westerlyri.gov).

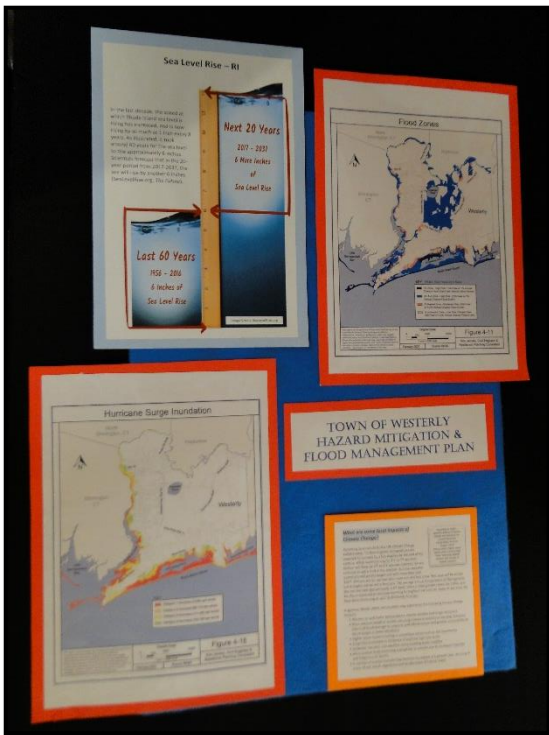
After the public review period, the Town Council will host a public hearing during which there will be an opportunity for the public to provide verbal input and feedback on the plan. The date/time of this public hearing will be determined by the Town Council and advertised ahead of the meeting.

## Outreach Activity 9: Disseminate Public Review Draft (Public Review Period)

The *PR Draft* was posted on the Town's Project webpage on February 7, 2023, initiating a three-week public review period which allowed the community and stakeholders ample time to read, evaluate, and provide input and feedback on the *PR Draft* prior to or at the Public Hearing. Information from the press release and a link to the *PR Draft* was emailed to the groups, agencies, and organizations listed in **Appendix 2-3**.

## Outreach Activity 10: Kiosk at the Public Library

A kiosk was set up at the Westerly Library to publicize that the *PR Draft* was available to the public-at-large and encourage the community to provide input and feedback either prior to or at the Public Hearing. As shown below, key maps and other material was provided. The kiosk remained from February 13-27, 2023.



To access the DRAFT HM&FMP  
go to the Town's website:  
<https://westerlyri.gov/546/Hazard-Mitigation>



## Outreach Activity 11: Agenda Topic for Local Boards

A number of local Boards and Commissions, including the Economic Development Commission (EDC) and Planning Board (PB), were included on the stakeholder list in **Appendix 2-3**. In addition, the HM&FMP was included as an agenda item for both the EDC and PB at their February meetings (February 7, 2023 and February 21, 2023, respectfully).

## Outreach Activity 12: Town Council Workshop

A brief presentation of the HM&FMP was presented to the Town Council at their February 13, 2023 meeting, followed by a Q&A session. Several council members asked questions about the plan, council adoption, and submittal to RIEMA/FEMA for review and approval.

## Outreach Activity 13: Public Hearing

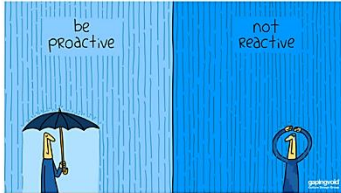
At the end of the three-week *Public Review Period*, a Public Hearing was hosted by the Town Council. Both the public review period and Public Hearing were widely advertised, including a press release and Public Hearing legal notice in *The Westerly Sun*, information on the Town's website and at the library kiosk, an agenda item on the February Economic Development Commission and Planning Board meetings, a Town Council Workshop, notice of the Public Hearing posted on the Secretary of State website, Clerkbase, Town website calendar, and in the Town Hall and Police Station, and an email to the groups, agencies, and organizations listed in **Appendix 2-3**.

At the Public Hearing, the Town's Consultant directed a Power Point presentation providing an overview of the benefits of a *HM&FMP*, the planning process, the hazards included, what is at risk, development of the *Action Plan*, and *Plan* implementation. A public comment session followed the presentation providing the public the opportunity to give input and feedback.

### What is hazard mitigation and why do we need a Plan?



Hazard Mitigation is defined as any sustained action taken to reduce or eliminate the long-term risk to life and property from hazard events.

**The most effective strategy is to be proactive - Take action before disaster occurs!**



### Why Create a Hazard Mitigation Plan?

- Plan ahead to become pro-active rather than reactive
- Identify goals to prepare and adapt to changing hazards and vulnerabilities
- Prioritize preventative measures (projects, initiatives, policies) to reduce property damage and loss of life associated with natural hazards and to expedite disaster recovery, reducing the community's socioeconomic losses
- Engage/educate the community regarding risks associated with natural hazards
- Meet FEMA funding eligibility and Community Rating System (CRS) requirements



KWJ - CE/RP

Example of slides



# APPENDIX 2-3

## Coordination with Agencies & Organizations

---

# Appendix 2-3

## Coordination with Agencies & Organizations

The HM&FMP Advisory Committee recognized that the planning process would be greatly enhanced by inviting local, regional, state, and federal agencies and organizations to participate in the process. As indicated in the following Table, the Town coordinated with **13 local government & school district groups, as well as 37 agencies and organizations outside of Westerly's governmental structure.** Coordination with these key groups was initiated at the beginning of the planning process through an email informing them of the development of the *Plan* and welcoming them to provide information or opinions and participate in meetings or other outreach activities. Two additional emails were sent during the *Public Review Period* to provide the opportunity for pre-adoption review of the *HM&FMP*.

<b>Local Government &amp; School District (13)</b>		
<b>Organization (alphabetized)</b>	<b>Contact</b>	<b>Email Address</b>
Building Code Board of Appeal	<i>(Dave Murphy, Building Official, Advisory Committee)</i>	
Conservation Commission	Joseph MacAndrew, Chair	
Economic Development Commission	Jim Torres, Chair	
Finance, Board of	Paula Brouillette	
Housing Authority	Lucienne Andrew, Executive Director; Gary S. Murano, Chair	
Multicultural Committee	April Dinwoodie, Chair	
Municipal Land Trust	James Federico, Chair	
Planning Board	Justin Hopkins, Chair	
Recreation, Board of	Ed Haik, Chair	
School Committee	Marianne Nardone	
Town Council	Mary Leblanc, Town Clerk	
Westerly Public Schools	Marc Garceau, Superintendent	
Zoning Board	Martin Loiselle, Zoning Official	
<b>Agencies &amp; Organizations Outside the Community's Governmental Structure (37)</b>		
<b>Organization (alphabetized)</b>	<b>Contact</b>	<b>Email Address</b>
Coastal Resources Management Council	Leah Feldman, Coastal Policy	lfeldman@crmc.ri.gov
Misquamicut Business Association	Caswell Cooke, President	caswellcookejr@gmail.com michellecoluccipinto@gmail.com
Narragansett Bay Estuary Program	Mike Gerel, Executive Director	mike.gerel@nbep.org
National Flood Insurance Program	Eugene Kohls, Region I, ISO/CRS Specialist	EKohls@verisk.com
National Oceanic and Atmospheric Association (NOAA)	Kim Texeira, Chief of the Policy, Planning, & Communications - NOAA Office for Coastal Management	Kimberly.Teixeira@noaa.gov
Ocean Community Chamber of Commerce	Lisa Konicki, Ex Director <i>(Dan Lathrop, Advisory Committee)</i>	Lkonicki@oceanchamber.org dlathrop@lathropinsurance.com
Rhode Island Department of Environmental Management (RIDEM)	Jason McNamee, Deputy Director for Natural Resources	jason.mcnamee@dem.ri.gov

Rhode Island Department of Environmental Management (RIDEM)	Terry Gray, Acting Director	terry.gray@dem.ri.gov
Rhode Island Department of Transportation (RIDOT)	Pamela Cotter, Acting Administrator of Planning	Pamela.Cotter@dot.ri.gov
Rhode Island Department of Transportation (RIDOT) Stormwater Management	Nicole Leporacci, Environmental Scientist	Nicole.Leporacci@dot.ri.gov
Rhode Island Division of Statewide Planning	Roberta Groch, Assistant Chief, AICP	roberta.groch@doa.ri.gov
Rhode Island Emergency Management Agency (RIEMA)	Melinda Hopkins, State Hazard Mitigation Officer	melinda.hopkins@ema.ri.gov
Rhode Island Energy	Andrea Moshier, Lead Program Manager, Community Solutions	Andrea.Moshier@nationalgrid.com
Rhode Island Energy	Paul Stasiuk, Manager External Affairs	pastasiuk@rienergy.com
Rhode Island Infrastructure Bank (RIIB)	Kimberly Korioth, Stormwater and Resilience Analyst	kkorioth@riib.org
Rhode Island State Conservation Committee	Maria Mack	cfm@cox.net
Save The Bay	Wenley Ferguson, Director of Habitat Restoration	wferguson@savebay.org
Save The Bay	Catie Alves, South County Coastkeeper	calves@savebay.org
Southern Rhode Island Conservation District	<i>(Gina Fuller, Advisory Committee)</i>	gfuller@SRICD.org
State Representative - District 36	Tina Spears	rep-spears@rilegislature.gov
State Representative - District 37	Samuel Azzinaro	rep-azzinaro@rilegislature.gov
State Representative - District 38	Brian Kennedy	rep-kennedy@rilegislature.gov
State Senator – District 38	Victoria Gu	victoria4ri@gmail.com
The Nature Conservancy RI	Jon O'Brien, Policy & Partnership Specialist	jobrien@TNC.ORG
The Westerly Land Trust	<i>(Jenn Fusco, Advisory Committee)</i>	jfusco@westerlylandtrust.org
Town of Charlestown, RI	EMA - Kevin Gallup	cemadirector@charlestownri.gov
Town of Hopkinton, RI	EMA - Ron MacDonald III	ema@hopkintonri.org
Town of North Stonington, CT	EMA - Gary Baron	emd@northstoningtonCT.gov
Town of Stonington, CT	EMA - George Brennan	Irish.100@live.com
US Army Corps of Engineers	Michael Riccio, Project/Study Manager	Michael.S.Riccio@usace.army.mil
USDA - Natural Resource Science Service	Darrell Moore, State Engineer Michael Viola, Engineer	darrell.moore@usda.gov Michael.Viola@usda.gov
Watch Hill Conservancy	<i>(Joan Beth Brown, Advisory Committee)</i>	joanbethbrown@gmail.com
Weekapaug Foundation For Conservation	James Tobin	jmtobin@comcast.net
Westerly Hospital	<i>(Fawatih Mohamed-Abouh, MD, MPH, Advisory Committee)</i>	Fawatih.Mohamed-Abouh@LMHOSP.ORG
Westerly Library & Wilcox Park	Amanda Wagner, Outreach Coordinator	awagner@westerlylibrary.org
Westerly Senior Center	Donald Reynolds, Executive Director	don@wsc.necoxmail.com
Wood-Pawcatuck Watershed Association	Chris Fox, Executive Director	chris@wpwa.org

*Please Note: all emails sent encouraged the recipient to share the email with other committee or office members who may be interested; over the project duration some of the contacts changed; for privacy purposes local email addresses have not been provided.*

# APPENDIX 4-1

## Hazard Impacts & Risk Assessment

---

# Appendix 4-1

## Hazard Impacts & Risk Assessment

Due to Westerly's geographic location and land characteristics, including being bordered on the north and west by the Pawcatuck River, extensive shoreline on Block Island Sound, and considerable low-lying property, it is subject to a wide range of natural hazards that have the potential to adversely affect public health and safety.

To assist the HM&FMP Advisory Committee in analyzing each hazard and then comparing and prioritizing the hazards in terms of their potential impact on the Town, a standard methodology was used. The methodology was based on three semi-quantitative factors (probability of occurrence, likely range of impact, and likely magnitude of impact). The Advisory Committee assessed the hazards based on review of Disaster and Emergency Declarations, review of the hazard profiles, input from the community via the Public Opinion Survey, and from personal experience. The scoring rubric, the Committee's full analysis, and the Committee's overall priority ranking are provided below.

### Hazard Probability, Impact & Vulnerability Scoring Rubric

<p><b>Likelihood of Occurrence (Probability/Expected Frequency)</b>  <i>In other word, how likely is it that this hazard will occur in Westerly</i></p> <p>1 = <b>Unlikely:</b> Less than 1% annual probability          2 = <b>Potential:</b> Between 1-49.9% annual probability          3 = <b>Likely:</b> Between 50-89.9% annual probability          4 = <b>Highly Likely:</b> Greater than 90% annual probability</p> <p><b>Likely Range of Impact</b>  <i>In other word, if hazard occurs in Westerly, how much of the Town do you think might be damaged/impacted</i></p> <p>1 = <b>Small:</b> less than 10% of Town          2 = <b>Medium:</b> 10-40% of Town          3 = <b>Large:</b> 41-100% of Town</p>	<p><b>Likely Magnitude of Impact (Vulnerability) –</b>  <i>In other word, if hazard occurs in Westerly, to what degree might the following be damaged</i></p> <p><b>Built Environment Impact:</b> Physical loses and damages to structures &amp; infrastructure          1 = <b>Negligible:</b> Scattered incidental residential and commercial structure damages          2 = <b>Limited:</b> Fewer than 10% of residential and commercial structures damaged          3 = <b>Significant:</b> 20- 50% of residential and 10-25% of commercial structures are severely damaged</p> <p><b>Natural Environment Impact:</b> Physical loses and damages to the environment          1 = <b>Negligible:</b> Impacted fewer than 5% of natural resources          2 = <b>Limited:</b> Impacted fewer than 20% of natural resources          3 = <b>Significant:</b> Impacted greater than 20% of natural resources</p> <p><b>Economic Impact:</b> The interruption to business or services          1 = <b>Negligible:</b> No shutdown of critical infrastructure and facilities          2 = <b>Limited:</b> Short shutdown of some critical infrastructure and facilities          3 = <b>Significant:</b> Medium shutdown of some critical infrastructure and facilities</p> <p><b>Human Impact:</b> Possibility of injury, illness, emotional stress, or death          1 = <b>Negligible:</b> Minor injuries and emotional stress          2 = <b>Limited:</b> Some injuries and emotional stress          3 = <b>Significant:</b> Multiple deaths, severe injuries, and emotionally very stressful</p>
---	---

## Risk Summary: Hazard Probability, Impact & Vulnerability Assessment

Hazard Event	Likelihood of Occurrence	Likely Range of Impact	Likely Magnitude of Impact (Vulnerability)			
	Probability this will occur in Town	How much of Town will be impacted	Built Environment Impact	Natural Environment Impact	Economic Impact	Human Impact
			Physical losses and damages to structures & infrastructure	Physical losses and damages	Interruption of business or services	Possibility of injury, illness, emotional stress, or death
	1 = Unlikely 2 = Potential 3 = Likely 4 = Highly Likely	1 = Small 2 = Medium 3 = Large	1 = Negligible 2 = Limited 3 = Significant	1 = Negligible 2 = Limited 3 = Significant	1 = Negligible 2 = Limited 3 = Significant	1 = Negligible 2 = Limited 3 = Significant
<b>FLOOD-RELATED HAZARDS</b>						
Inland Flooding	4	2	2	2	2	1
Coastal Flooding including Storm Surge	4	2	2	2	2	2
Coastal Erosion	4	2	1	2	1	1
Dam Failure	2	2	2	2	2	2
<b>WIND-RELATED HAZARDS</b>						
High Winds	4	2	1	1	1	1
Thunderstorm including Lightning and Hail	4	1	1	1	1	1
Tornado	1	1	1	1	1	1
Tropical Cyclone (Tropical Depression, Tropical Storm & Hurricane)	3	2	3	3	2	2
<b>WINTER STORM-RELATED HAZARDS</b>						
Heavy Snow & Ice	4	3	2	2	2	2
Extreme Cold	2	3	1	1	2	1
<b>INFECTIOUS DISEASE-RELATED HAZARDS</b>						
Vector-borne Diseases Transmitted by Ticks or Mosquitoes	4	2	1	1	1	2
Contagious Respiratory Illness Caused by Influenza Viruses or Coronaviruses	4	3	1	1	3	3
<b>OTHER HAZARDS</b>						
Earthquake	1	1	1	1	1	1
Extreme Heat	3	3	1	2	1	1
Drought	2	3	1	3	1	1
Brush Fire	2	1	1	1	1	1

## Risk Summary: Overview

Each of the three semi-quantitative factors (probability of occurrence, likely range of impact, and likely magnitude of impact) were given equal weight in the overall ranking. As such the numeric totals for the 4 components associated with Likely Magnitude of Impact (Built Environment Impact, Natural Environment Impact, Economic Impact, and Human Impact) were first summed and divided by four to produce an average Likely Magnitude of Impact (Vulnerability) subtotal.

Hazard	Overall Ranking	Risk Category
Contagious Respiratory Illness Caused by Influenza Viruses or Coronaviruses	3.00	High
Heavy Snow & Ice	3.00	
Coastal Flooding including Storm Surge	2.67	
Inland Flooding	2.58	
Tropical Cyclone (Tropical Depression, Tropical Storm & Hurricane)	2.50	
Coastal Erosion	2.42	
Extreme Heat	2.42	
Vector-borne Diseases Transmitted by Ticks or Mosquitoes	2.42	
High Winds	2.33	Medium
Drought	2.17	
Extreme Cold	2.08	
Dam Failure	2.00	
Thunderstorm including Lightning and Hail	2.00	
Brush Fire	1.33	Low
Earthquake	1.00	
Tornado	1.00	

# APPENDIX 4-2

## Maps

---

### Maps:

Figure 4-11 FEMA Flood Zones

Figure 4-16 Hurricane Surge Inundation Areas

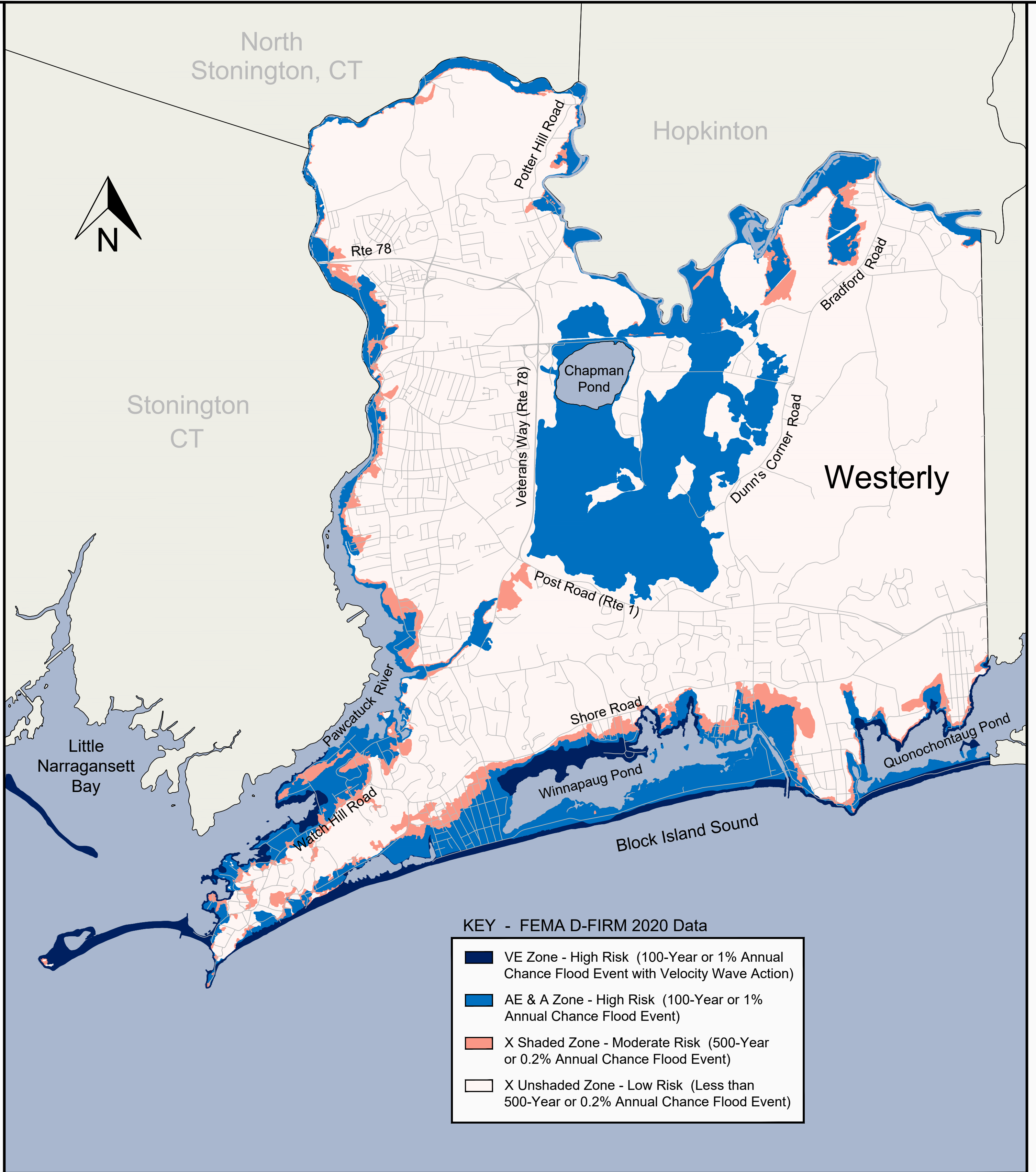
Figure 4-43 Critical Facilities

Figure 4-45 FEMA Flood Zones with Critical Facilities Overlay

Figure 4-47 Hurricane Surge Inundation Areas with Critical Facilities Overlay

Figure 4-48 Sea Level Rise Inundation Areas with Critical Facilities Overlay

# FEMA Flood Zones



*This map is not the product of a Professional Land Survey. It was created by the Town of Westerly for general reference, informational, planning or guidance use, and is not a legally authorized source as to location of natural or manmade features. Proper interpretation of this map may require the assistance of appropriate professional services. The Town of Westerly makes no warranty, express or implied, related to the spatial accuracy, reliability, completeness, or currentness of this map.*

**Graphic Scale**

0      3000      6000      12000

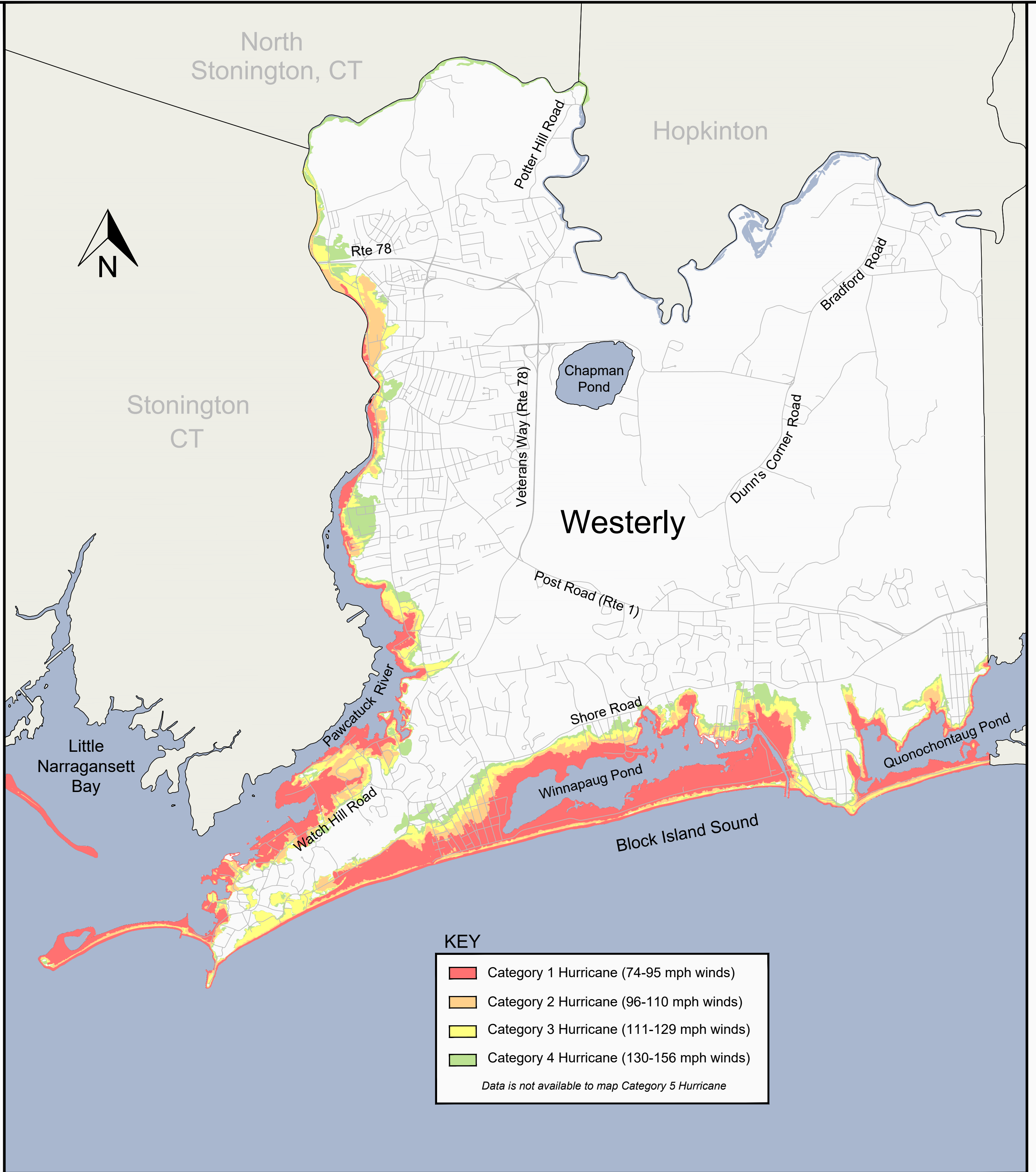
1 inch = 3000 Feet

February 2023	Source: RIGIS
---------------	---------------

**Figure 4-11**

Kim Jacobs, Civil Engineer &  
Resilience Planning Consultant

# Hurricane Surge Inundation Areas



*This map is not the product of a Professional Land Survey. It was created by the Town of Westerly for general reference, informational, planning or guidance use, and is not a legally authorized source as to location of natural or manmade features. Proper interpretation of this map may require the assistance of appropriate professional services. The Town of Westerly makes no warranty, express or implied, related to the spatial accuracy, reliability, completeness, or currentness of this map.*

**Graphic Scale**

0      3000      6000      12000

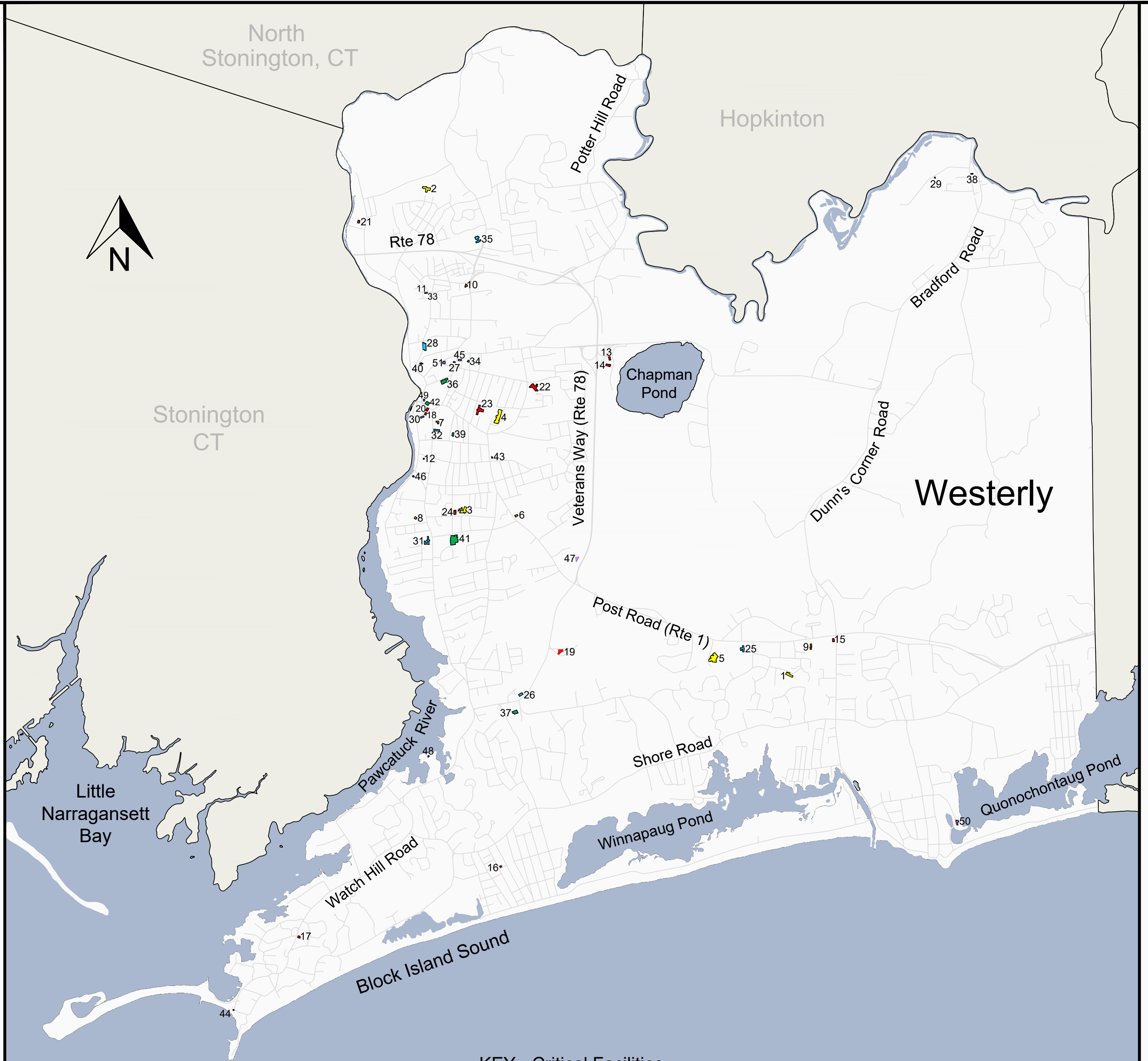
1 inch = 3000 feet

February 2023	Source: RIGIS
---------------	---------------

**Figure 4-16**

Kim Jacobs, Civil Engineer &  
Resilience Planning Consultant

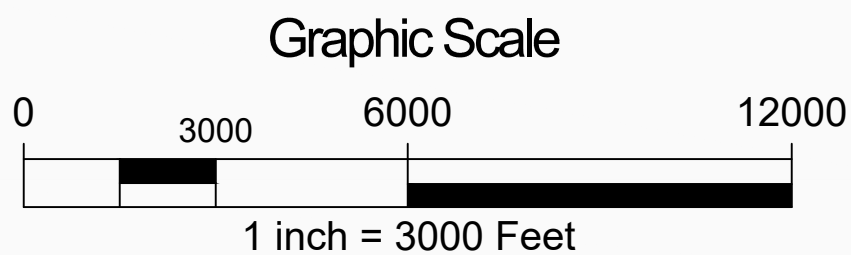
# Critical Facilities



KEY - Critical Facilities

Schools	Day Care/Early Learning Ctrs.	Government/Emergency Ctrs.	Special Population Ctrs.	Institutional/Commercial	Nat. Register Historic Places
1 Dunn's Corners Elem. School	6 Cadence Academy Preschool	13 Animal Shelter Department	25 Apple Rehab Clipper	36 Ocean Community YMCA	43 Babcock-Smith House
2 Springbrook Elementary School	7 Central Nursery School	14 Department of Public Works	26 Frank Olean Center	37 USPS (110 Tom Harvey Rd)	44 Flying Horse Carousel
3 State Street Elementary School	8 Clark Street Daycare	15 Dunn's Corners Fire Dept.	27 Golden Years Assisted Living	38 USPS (416 Bradford Rd)	45 George Kent Performance Hall
4 Westerly High School	9 Dunn's Corners Early Learning	16 Misquamicut Fire Department	28 Johnnycake Center	39 Westerly Ambulance Corps	46 Lewis-Card-Perry House
5 Westerly Middle School	10 Littlebrook Child Dev. Center	17 Watch Hill Fire Department	29 Joy Community Center	40 Westerly Education Center	47 Nursery Site (arch. site)
	11 Westerly Head Start	18 Westerly Fire Department	30 PACE & Transition Academy	41 Westerly Hospital	48 Ram Point
	12 Westerly Preschool	19 Police Department	31 Royal Health Westerly	42 Westerly Library & Wilcox Park	49 USPS (5 High St)
		20 Town Hall	32 The Elms Residence		50 Weekapaug Inn
		21 Town Hall White Rock Building	33 Tri County Community Action		51 Westerly Armory
		22 Tower Street Comm. Center	34 WARM Shelter		
		23 Westerly Sch. District Admin.	35 Westerly Rehab & HC Center		
		24 Westerly Senior Center			

*This map is not the product of a Professional Land Survey. It was created by the Town of Westerly for general reference, informational, planning or guidance use, and is not a legally authorized source as to location of natural or manmade features. Proper interpretation of this map may require the assistance of appropriate professional services. The Town of Westerly makes no warranty, express or implied, related to the spatial accuracy, reliability, completeness, or currentness of this map.*



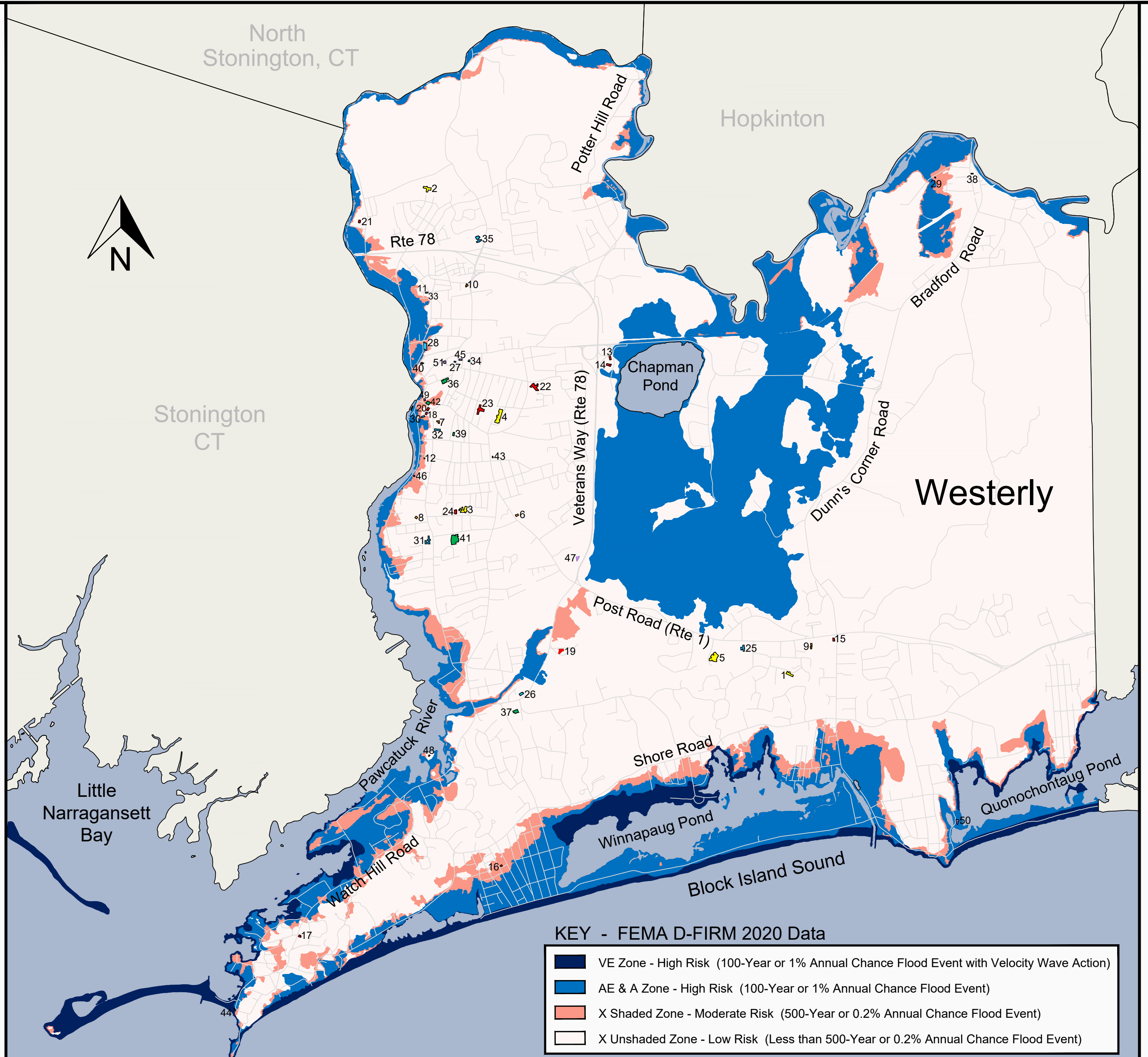
February 2023

Source: RIGIS, Town

## Figure 4-43

Kim Jacobs, Civil Engineer & Resilience Planning Consultant

# FEMA Flood Zones with Critical Facilities Overlay



### KEY - FEMA D-FIRM 2020 Data

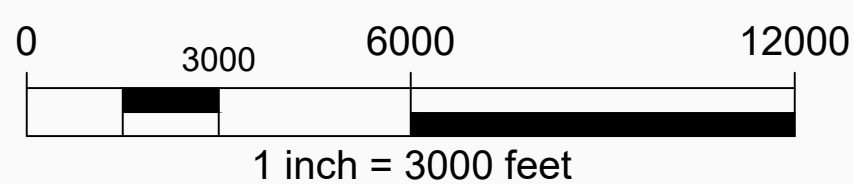
	VE Zone - High Risk (100-Year or 1% Annual Chance Flood Event with Velocity Wave Action)
	AE & A Zone - High Risk (100-Year or 1% Annual Chance Flood Event)
	X Shaded Zone - Moderate Risk (500-Year or 0.2% Annual Chance Flood Event)
	X Unshaded Zone - Low Risk (Less than 500-Year or 0.2% Annual Chance Flood Event)

### KEY - Critical Facilities

Schools	Day Care/Early Learning Ctrs.	Government/Emergency Ctrs.	Special Population Ctrs.	Institutional/Commercial	Nat. Register Historic Places
1 Dunn's Corners Elem. School	6 Cadence Academy Preschool	13 Animal Shelter Department	25 Apple Rehab Clipper	36 Ocean Community YMCA	43 Babcock-Smith House
2 Springbrook Elementary School	7 Central Nursery School	14 Department of Public Works	26 Frank Olean Center	37 USPS (110 Tom Harvey Rd)	44 Flying Horse Carousel
3 State Street Elementary School	8 Clark Street Daycare	15 Dunn's Corners Fire Dept.	27 Golden Years Assisted Living	38 USPS (416 Bradford Rd)	45 George Kent Performance Hall
4 Westerly High School	9 Dunn's Corners Early Learning	16 Misquamicut Fire Department	28 Johnnycake Center	39 Westerly Ambulance Corps	46 Lewis-Card-Perry House
5 Westerly Middle School	10 Littlebrook Child Dev. Center	17 Watch Hill Fire Department	29 Joy Community Center	40 Westerly Education Center	47 Nursery Site (arch. site)
	11 Westerly Head Start	18 Westerly Fire Department	30 PACE & Transition Academy	41 Westerly Hospital	48 Ram Point
	12 Westerly Preschool	19 Police Department	31 Royal Health Westerly	42 Westerly Library & Wilcox Park	49 USPS (5 High St)
		20 Town Hall	32 The Elms Residence		50 Weekapaug Inn
		21 Town Hall White Rock Building	33 Tri County Community Action		51 Westerly Armory
		22 Tower Street Comm. Center	34 WARM Shelter		
		23 Westerly Sch. District Admin.	35 Westerly Rehab & HC Center		
		24 Westerly Senior Center			

This map is not the product of a Professional Land Survey. It was created by the Town of Westerly for general reference, informational, planning or guidance use, and is not a legally authorized source as to location of natural or manmade features. Proper interpretation of this map may require the assistance of appropriate professional services. The Town of Westerly makes no warranty, express or implied, related to the spatial accuracy, reliability, completeness, or currentness of this map.

### Graphic Scale



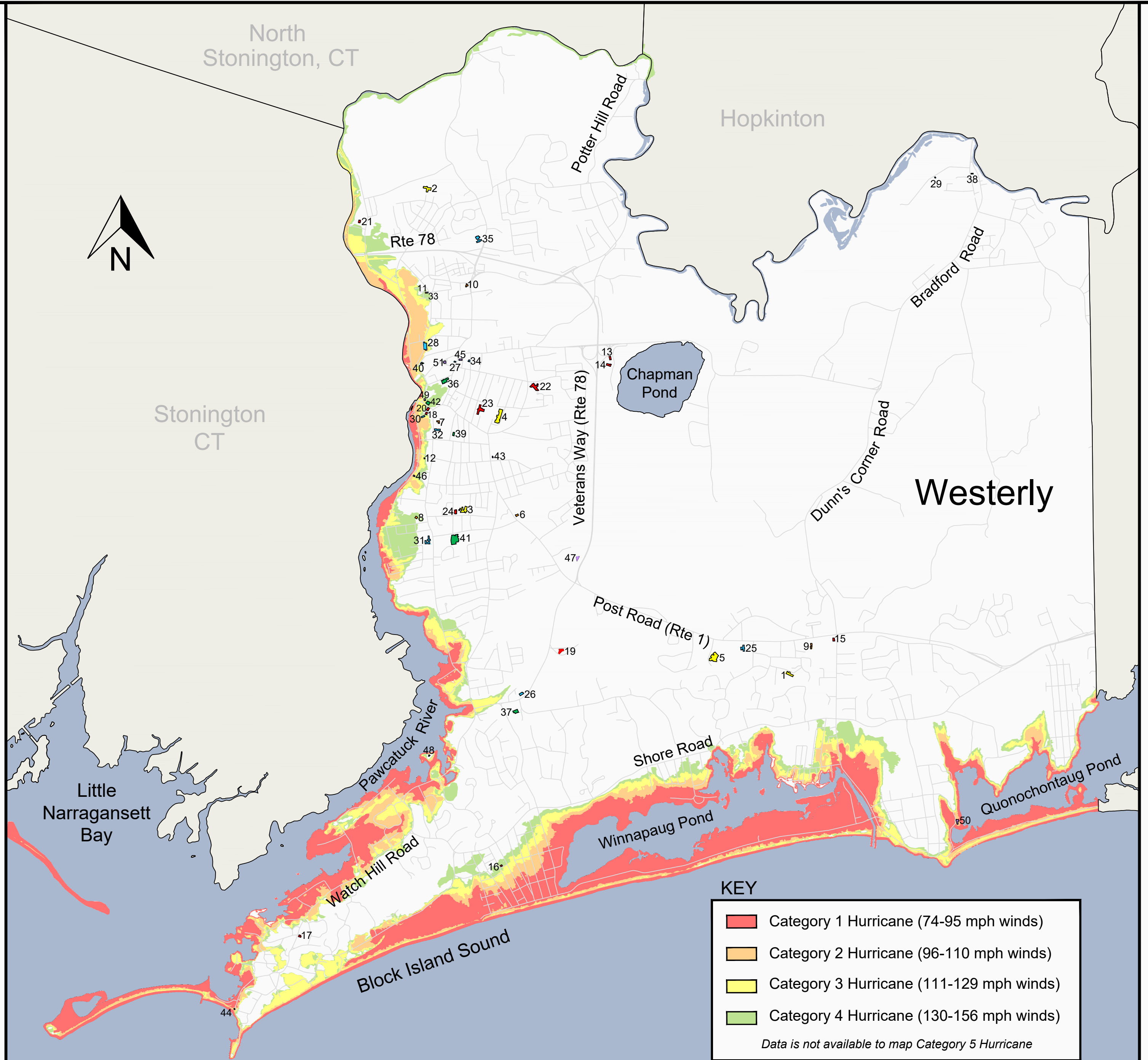
## Figure 4-45

Kim Jacobs, Civil Engineer & Resilience Planning Consultant

February 2023

Source: RIGIS, Town

# Hurricane Surge Inundation Areas with Critical Facilities Overlay

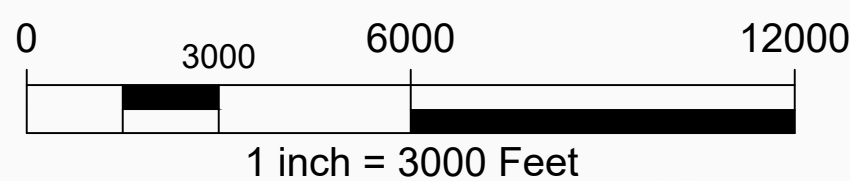


## KEY - Critical Facilities

Schools	Day Care/Early Learning Ctrs.	Government/Emergency Ctrs.	Special Population Ctrs.	Institutional/Commercial	Nat. Register Historic Places
1 Dunn's Corners Elem. School	6 Cadence Academy Preschool	13 Animal Shelter Department	25 Apple Rehab Clipper	36 Ocean Community YMCA	43 Babcock-Smith House
2 Springbrook Elementary School	7 Central Nursery School	14 Department of Public Works	26 Frank Olean Center	37 USPS (110 Tom Harvey Rd)	44 Flying Horse Carousel
3 State Street Elementary School	8 Clark Street Daycare	15 Dunn's Corners Fire Dept.	27 Golden Years Assisted Living	38 USPS (416 Bradford Rd)	45 George Kent Performance Hall
4 Westerly High School	9 Dunn's Corners Early Learning	16 Misquamicut Fire Department	28 Johnnycake Center	39 Westerly Ambulance Corps	46 Lewis-Card-Perry House
5 Westerly Middle School	10 Littlebrook Child Dev. Center	17 Watch Hill Fire Department	29 Joy Community Center	40 Westerly Education Center	47 Nursery Site (arch. site)
	11 Westerly Head Start	18 Westerly Fire Department	30 PACE & Transition Academy	41 Westerly Hospital	48 Ram Point
	12 Westerly Preschool	19 Police Department	31 Royal Health Westerly	42 Westerly Library & Wilcox Park	49 USPS (5 High St)
		20 Town Hall	32 The Elms Residence		50 Weekapaug Inn
		21 Town Hall White Rock Building	33 Tri County Community Action		51 Westerly Armory
		22 Tower Street Comm. Center	34 WARM Shelter		
		23 Westerly Sch. District Admin.	35 Westerly Rehab & HC Center		
		24 Westerly Senior Center			

This map is not the product of a Professional Land Survey. It was created by the Town of Westerly for general reference, informational, planning or guidance use, and is not a legally authorized source as to location of natural or manmade features. Proper interpretation of this map may require the assistance of appropriate professional services. The Town of Westerly makes no warranty, express or implied, related to the spatial accuracy, reliability, completeness, or currentness of this map.

## Graphic Scale



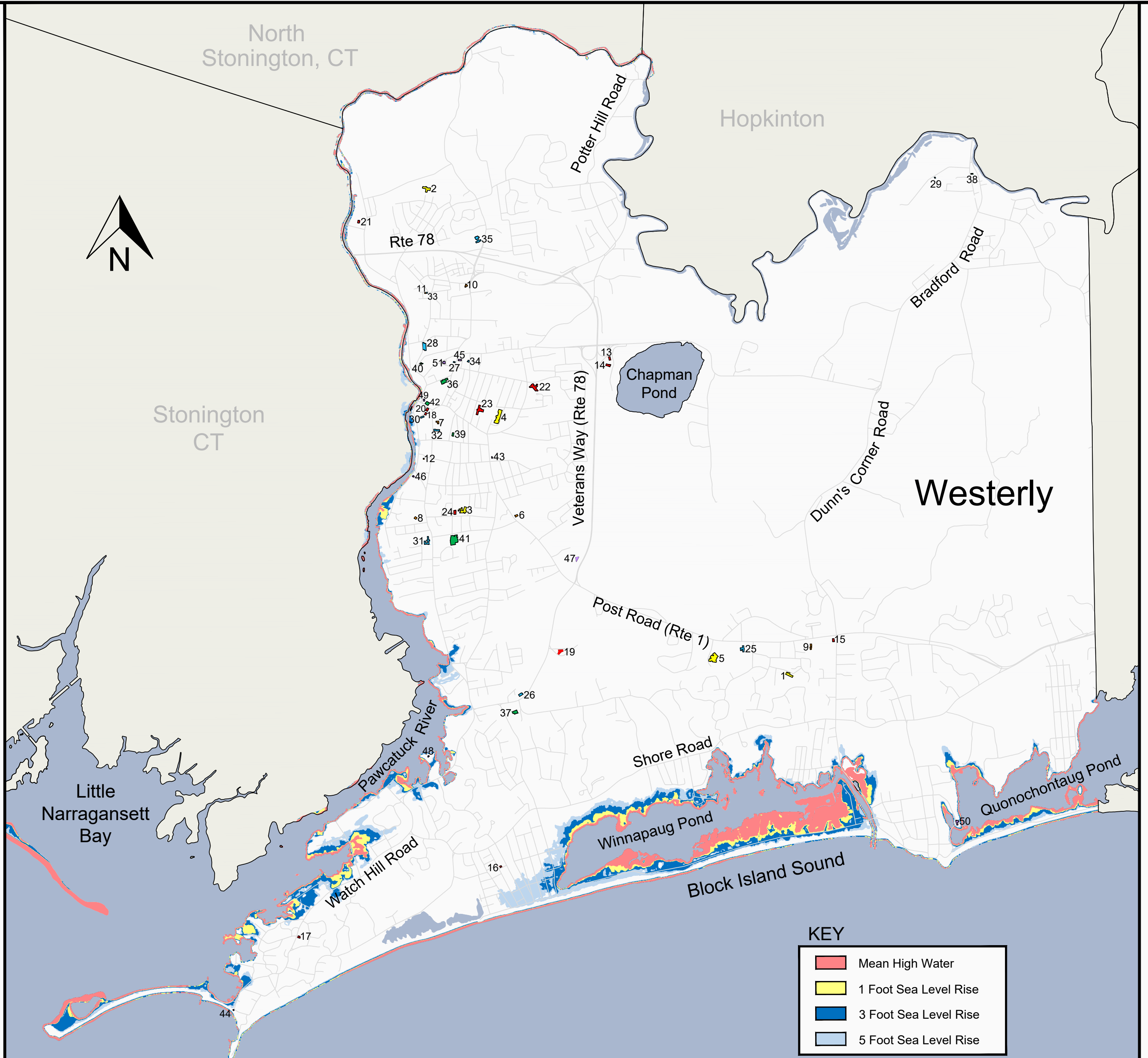
February 2023

Source: RIGIS, Town

## Figure 4-47

Kim Jacobs, Civil Engineer & Resilience Planning Consultant

# Sea Level Rise with Critical Facilities Overlay



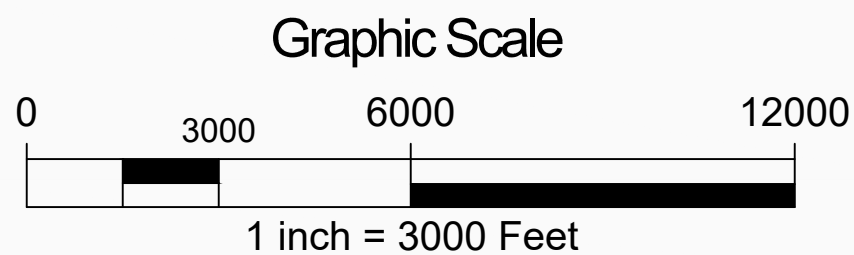
**KEY**

<span style="color: red;">█</span>	Mean High Water
<span style="color: yellow;">█</span>	1 Foot Sea Level Rise
<span style="color: blue;">█</span>	3 Foot Sea Level Rise
<span style="color: lightblue;">█</span>	5 Foot Sea Level Rise

**KEY - Critical Facilities**

Schools	Day Care/Early Learning Ctrs.	Government/Emergency Ctrs.	Special Population Ctrs.	Institutional/Commercial	Nat. Register Historic Places
1 Dunn's Corners Elem. School 2 Springbrook Elementary School 3 State Street Elementary School 4 Westerly High School 5 Westerly Middle School	6 Cadence Academy Preschool 7 Central Nursery School 8 Clark Street Daycare 9 Dunn's Corners Early Learning 10 Littlebrook Child Dev. Center 11 Westerly Head Start 12 Westerly Preschool	13 Animal Shelter Department 14 Department of Public Works 15 Dunn's Corners Fire Dept. 16 Misquamicut Fire Department 17 Watch Hill Fire Department 18 Westerly Fire Department 19 Police Department 20 Town Hall 21 Town Hall White Rock Building 22 Tower Street Comm. Center 23 Westerly Sch. District Admin. 24 Westerly Senior Center	25 Apple Rehab Clipper 26 Frank Olean Center 27 Golden Years Assisted Living 28 Johnnycake Center 29 Joy Community Center 30 PACE & Transition Academy 31 Royal Health Westerly 32 The Elms Residence 33 Tri County Community Action 34 WARM Shelter 35 Westerly Rehab & HC Center	36 Ocean Community YMCA 37 USPS (110 Tom Harvey Rd) 38 USPS (416 Bradford Rd) 39 Westerly Ambulance Corps 40 Westerly Education Center 41 Westerly Hospital 42 Westerly Library & Wilcox Park	43 Babcock-Smith House 44 Flying Horse Carousel 45 George Kent Performance Hall 46 Lewis-Card-Perry House 47 Nursery Site (arch. site) 48 Ram Point 49 USPS (5 High St) 50 Weekapaug Inn 51 Westerly Armory

*This map is not the product of a Professional Land Survey. It was created by the Town of Westerly for general reference, informational, planning or guidance use, and is not a legally authorized source as to location of natural or manmade features. Proper interpretation of this map may require the assistance of appropriate professional services. The Town of Westerly makes no warranty, express or implied, related to the spatial accuracy, reliability, completeness, or currentness of this map.*



February 2023

Source: RIGIS, Town

## Figure 4-48

Kim Jacobs, Civil Engineer & Resilience Planning Consultant

# APPENDIX 4-3

## Critical Facilities Vulnerability Analysis

---

## Critical Facilities with Map Numbering System

Schools	Day Care/ Early Learning Centers	Government/ Emergency Centers	Special Population Centers	Institutional/Commercial	National Register of Historic Places
<p><b>1</b> Dunn's Corners Elementary School (Public)</p>	<p><b>6</b> Cadence Academy Preschool (Private)</p>	<p><b>13</b> Animal Shelter Department (Public)</p>	<p><b>25</b> Apple Rehab Clipper (Private)</p>	<p><b>36</b> Ocean Community YMCA-Westerly/Pawcatuck Branch (Private)</p>	<p><b>43</b> Babcock-Smith House (Private)</p>
<p><b>2</b> Springbrook Elementary School (Public)</p>	<p><b>7</b> Central Nursery School (Central Baptist Church) (Private)</p>	<p><b>14</b> Department of Public Works (Public)</p>	<p><b>26</b> Frank Olean Center (Private)</p>	<p><b>37</b> U.S. Post Office (Federal) 110 Tom Harvey Road</p>	<p><b>44</b> Flying Horse Carousel (Private)</p>
<p><b>3</b> State Street Elementary School (Public)</p>	<p><b>8</b> Clark Street Daycare (Private)</p>	<p><b>15</b> Dunn's Corners Fire Department</p>	<p><b>27</b> Golden Years Assisted Living Community (Private)</p>	<p><b>38</b> U.S. Post Office (Federal) 416 Bradford Road, Bradford</p>	<p><b>45</b> George Kent Performance Hall (Private)</p>
<p><b>4</b> Westerly High School (Public)</p>	<p><b>9</b> Dunn's Corners Early Learning (Private)</p>	<p><b>16</b> Misquamicut Fire Department</p>	<p><b>28</b> Johnnycake Center (Private)</p>	<p><b>39</b> Westerly Ambulance Corps (Private)</p>	<p><b>46</b> Lewis-Card-Perry House (Private)</p>
<p><b>5</b> Westerly Middle School (Public)</p>	<p><b>10</b> Littlebrook Child Development Center (Private)</p>	<p><b>17</b> Watch Hill Fire Department</p>	<p><b>29</b> Joy Community Center (Private)</p>	<p><b>40</b> Westerly Education Center (Private)</p>	<p><b>47</b> Nursery Site (archaeological site)</p>
	<p><b>11</b> Westerly Head Start (Private/Non-Profit)</p>	<p><b>18</b> Westerly Fire Department</p>	<p><b>30</b> PACE Adult Day Center (Private) and Transition Academy (Public)</p>	<p><b>41</b> Westerly Hospital (Private)</p>	<p><b>48</b> Ram Point (Private)</p>
	<p><b>12</b> Westerly Preschool (Private)</p>	<p><b>19</b> Police Department (Public)</p>	<p><b>31</b> Royal Health Westerly (Private)</p>	<p><b>42</b> Westerly Library &amp; Wilcox Park (Private)</p>	<p><b>49</b> U.S. Post Office (Federal) 5 High Street</p>
		<p><b>20</b> Town Hall (Public)</p>	<p><b>32</b> The Elms Retirement Residence (Private)</p>		<p><b>50</b> Weekapaug Inn (Private)</p>
		<p><b>21</b> Town Hall White Rock Building (Public)</p>	<p><b>33</b> Tri County Community Action (Private)</p>		<p><b>51</b> Westerly Armory (Public Building/Private Operated)</p>
		<p><b>22</b> Tower Street Community Center (Public)</p>	<p><b>34</b> WARM Shelter (Private)</p>		
		<p><b>23</b> Westerly Public Schools District Administration (Public)</p>	<p><b>35</b> Westerly Rehabilitation &amp; Healthcare Center (Private)</p>		
		<p><b>24</b> Westerly Senior Center (Non-Profit)</p>			

# Vulnerability Analysis Summary of Critical Facilities

**Quantitative Analysis Criteria:**

**FEMA Flood Zone:** highest risk zone that any portion of the building footprint is touching; if no structure then highest risk zone that any portion of the parcel is touching

**Flood Depth 100-year Storm:** Based on STORMTOOLS - highest depth identified for any portion of the building footprint; if no structure then highest depth identified for any portion of the parcel

**Inundation by SLR:** Based on STORMTOOLS – lowest SLR scenario that any portion of the building footprint is included within; if no structure then lowest SLR scenario that any portion of the parcel is included within

**Hurricane Category:** lowest hurricane category that any portion of the building footprint is touching; if no structure then lowest hurricane category that any portion of the parcel is touching

Vulnerable Facilities Category	Vulnerable Facility Location & Ownership	Services a Vulnerable Population	FEMA Flood Zone	Flood Depth 100yr Storm	Inundated by SLR	Hurricane Category	Winter Storm-Related	Earthquakes	Extreme Heat	Drought	Brush Fires	Contagious Respiratory Illness (Flu/Coronavirus)	Vector Borne Diseases (Ticks/Mosquitos)	Primary Effects or Problems
Schools	1 - Dunn's Corners Elementary School (Public) 8 1/2 Plateau Road	Students (K – 4 <sup>th</sup> grade)	X (unshaded)	-----	-----	-----	Yes (flat roof)	yes	-----	-----	-----	yes	-----	public safety, property damage, disruption of services
	2 - Springbrook Elementary School (Public) 39 Springbrook Road	Students (K – 4 <sup>th</sup> grade)	X (unshaded)	-----	-----	-----	Yes (flat roof)	yes	-----	-----	-----	yes	-----	public safety, property damage, disruption of services
	3 - State Street Elementary School (Public) 35 State Street	Students (K – 4 <sup>th</sup> grade)	X (unshaded)	-----	-----	-----	Yes (flat roof)	yes	-----	-----	-----	yes	-----	public safety, property damage, disruption of services
	4 - Westerly High School (Public) 23 Ward Avenue	Students (9 <sup>th</sup> - 12 <sup>th</sup> grade)	X (unshaded)	-----	-----	-----	Yes (flat roof)	yes	-----	-----	-----	yes	-----	public safety, property damage, disruption of services
	5 - Westerly Middle School (Public) 10 Sandy Hill Road	Students (5 <sup>th</sup> - 8 <sup>th</sup> grade)	X (unshaded)	-----	-----	-----	Yes (flat roof)	yes	-----	-----	-----	yes	-----	public safety, property damage, disruption of services
Day Care/ Early Learning Centers	6 - Cadence Academy Preschool (Private) 42 Franklin Street	Children (infants - K)	X (unshaded)	-----	-----	-----	No	yes	-----	-----	-----	yes	-----	public safety; property damage; disruption of services
	7 - Central Nursery School (Central Baptist Church) (Private) 14 Elm Street	Children (preschool ages 3 & 4)	X (unshaded)	-----	-----	-----	No	yes	-----	-----	-----	yes	-----	public safety; property damage; disruption of services
	8 - Clark Street Daycare (Private) 11 Clark Street	Children (infant – pre-K and after school to age 12)	X (unshaded)	-----	-----	4	No	yes	-----	-----	-----	yes	-----	public safety; property damage; disruption of services
	9 – Dunn's Corners Early Learning (Private) 221 Post Road	Children (preschool ages 3 - 5)	X (unshaded)	-----	-----	-----	No	yes	-----	-----	-----	yes	-----	public safety; property damage; disruption of services
	10 - Littlebrook Child Development Center (Private) 4 Brookside Road	Children (infant – pre-K)	X (unshaded)	-----	-----	-----	No	yes	-----	-----	-----	yes	-----	public safety; property damage; disruption of services
	11 - Westerly Head Start (Private/Non-Profit) 34 Pond Street	Children (preschool ages 3 - 5)	X (unshaded)	-----	-----	4	No	yes	-----	-----	-----	yes	-----	public safety; property damage; disruption of services
	12 - Westerly Preschool (Private) 13 Cross Street	Children (preschool)	X (shaded)	-----	-----	4	No	yes	-----	-----	-----	yes	-----	public safety; property damage; disruption of services

Vulnerable Facilities Category	Vulnerable Facility Location & Ownership	Services a Vulnerable Population	FEMA Flood Zone	Flood Depth 100yr Storm	Inundated by SLR	Hurricane Category	Winter Storm-Related	Earthquakes	Extreme Heat	Drought	Brush Fires	Contagious Respiratory Illness (Flu/Coronavirus)	Vector Borne Diseases (Ticks/Mosquitos)	Primary Effects or Problems	
<b>Government/Emergency Centers</b>	13 - Animal Shelter Department (Public) 33 Larry Hirsch Lane	-----	X (unshaded)	-----	-----	-----	No	yes	-----	-----	-----	yes	-----	property damage; disruption of services	
	14 - Department of Public Works (Public) 35 Larry Hirsch Lane	-----	X (unshaded)	-----	-----	-----	No	yes	-----	-----	-----	yes	-----	public safety; property damage; disruption of services	
	<b>Fire Departments (Quasi Public)</b>	-----	X (unshaded)	-----	-----	-----	No	yes	-----	-----	-----	yes	-----	public safety; property damage; disruption of services	
	• 15 - Dunn's Corners Fire Department 3 Langworthy Road, Westerly	-----	X (shaded)	-----	-----	4	No	yes	-----	-----	-----	yes	-----		
	• 16 - Misquamicut Fire Department 65 Crandall Avenue	-----	X (unshaded)	-----	-----	-----	No	yes	-----	-----	-----	yes	-----		
	• 17 - Watch Hill Fire Department 222 Watch Hill Road	-----	X (unshaded)	-----	-----	-----	No	yes	-----	-----	-----	yes	-----		
	• 18 - Westerly Fire Department 7 Union Street/180 Beach Street	-----	X (unshaded)	-----	-----	-----	No	yes	-----	-----	-----	yes	-----		
	19 - Police Department (Public) 60 Airport Road	-----	X (unshaded)	-----	-----	-----	-----	No	yes	-----	-----	-----	yes	-----	public safety; property damage; disruption of services
	20 - Town Hall (Public) 45 Broad Street	-----	X (unshaded)	-----	-----	-----	-----	No	yes	-----	-----	-----	yes	-----	public safety; property damage; disruption of services
	21 - Town Hall White Rock Building (Public) 68 White Rock Road	-----	X (unshaded)	-----	-----	-----	-----	Yes (Flat Roof)	yes	-----	-----	-----	yes	-----	public safety; property damage; disruption of services
22 - Tower Street Community Center (Public) 93 Tower Street	-----	X (unshaded)	-----	-----	-----	-----	Yes (Flat Roof)	yes	-----	-----	-----	yes	-----	public safety; property damage; disruption of services	
23 - Westerly Public Schools District Administration (Public) 23 Highland Avenue	-----	X (unshaded)	-----	-----	-----	-----	Yes (flat roof)	yes	-----	-----	-----	yes	-----	public safety; property damage; disruption of services	
24 - Westerly Senior Center (Non-Profit) 39 State Street	-----	X (unshaded)	-----	-----	-----	-----	No	yes	-----	-----	-----	yes	-----	public safety; property damage; disruption of services * Emergency Shelter and Warming/Cooling Center	

Vulnerable Facilities Category	Vulnerable Facility Location & Ownership	Services a Vulnerable Population	FEMA Flood Zone	Flood Depth 100yr Storm	Inundated by SLR	Hurricane Category	Winter Storm-Related	Earthquakes	Extreme Heat	Drought	Brush Fires	Contagious Respiratory Illness (Flu/Coronavirus)	Vector Borne Diseases (Ticks/Mosquitos)	Primary Effects or Problems
Special Population Centers	25 - Apple Rehab Clipper (Private) 161 Post Road	Seniors	X (unshaded)	-----	-----	-----	No	yes	yes	-----	-----	yes	-----	senior populations are more susceptible to extreme heat and will benefit from access to AC; public safety; property damage; disruption of services; economic loss
	26 - Frank Olean Center (Private) 93 Airport Road	children and adults with developmental disabilities	X (unshaded)	-----	-----	-----	No	yes	-----	-----	-----	yes	-----	public safety; property damage; disruption of services; economic loss
	27 - Golden Years Assisted Living Community (Private) 118 High Street	Seniors	X (unshaded)	-----	-----	-----	No	yes	yes	-----	-----	yes	-----	senior populations are more susceptible to extreme heat and will benefit from access to AC; public safety; property damage; disruption of services; economic loss
	28 - Johnnycake Center (Private food pantry and thrift shop) 23 Industrial Drive	Economically disadvantaged	AE	-----	10 ft	2	No	yes	-----	-----	-----	yes	-----	public safety; property damage; disruption of services; economic loss
	29 - Joy Community Center (Private food pantry run by local church) 70 Bowling Lane	Economically disadvantaged	X (shaded)	-----	-----	-----	No	yes	-----	-----	-----	yes	-----	public safety; property damage; disruption of services; economic loss
	30 - PACE Adult Day Center (Private); and Transition Academy (Public) 5 Union Street	Seniors; Students 18-22 with disabilities	X (shaded)	-----	12 ft	3	No	yes	-----	-----	-----	yes	-----	senior populations are more susceptible to extreme heat and will benefit from access to AC; public safety; property damage; disruption of services; economic loss
	31 - Royal Health Westerly (Private) 79 Beach Street	Seniors	X (unshaded)	-----	-----	-----	No	yes	yes	-----	-----	yes	-----	senior populations are more susceptible to extreme heat and will benefit from access to AC; public safety; property damage; disruption of services; economic loss
	32 - The Elms Retirement Residence (Private) 22 Elm Street	Seniors	X (unshaded)	-----	-----	-----	No	yes	yes	-----	-----	yes	-----	senior populations are more susceptible to extreme heat and will benefit from access to AC; public safety; property damage; disruption of services; economic loss
	33 - Tri County Community Action (Private social services) 34 Pond Street	Economically disadvantaged	X (unshaded)	-----	-----	4	No	yes	-----	-----	-----	yes	-----	public safety; property damage; disruption of services; economic loss
	34 - WARM Shelter (Private homeless shelter) 56 Spruce Street	Economically disadvantaged	X (unshaded)	-----	-----	-----	No	yes	yes	-----	-----	yes	-----	public safety; property damage; disruption of services; economic loss
35 - Westerly Rehabilitation & Healthcare Center (Private) 280 High Street	Seniors	X (unshaded)	-----	-----	-----	No	yes	yes	-----	-----	yes	-----	senior populations are more susceptible to extreme heat and will benefit from access to AC; public safety; property damage; disruption of services; economic loss	

Vulnerable Facilities Category	Vulnerable Facility Location & Ownership	Services a Vulnerable Population	FEMA Flood Zone	Flood Depth 100yr Storm	Inundated by SLR	Hurricane Category	Winter Storm-Related	Earthquakes	Extreme Heat	Drought	Brush Fires	Contagious Respiratory Illness (Flu/Coronavirus)	Vector Borne Diseases (Ticks/Mosquitos)	Primary Effects or Problems
Institutional/Commercial	36 - Ocean Community YMCA- Westerly/Pawcatuck Branch (Private) 95 High Street	-----	X (unshaded)	-----	-----	-----	Yes (flat roof)	yes	-----	-----	-----	yes	-----	public safety; property damage; disruption of services; economic loss
	37 - U.S. Post Office (Federal) 110 Tom Harvey Road	-----	X (unshaded)	-----	-----	-----	Yes (flat roof)	yes	-----	-----	-----	-----	-----	public safety; property damage; disruption of services; economic loss
	38 - U.S. Post Office (Federal) 416 Bradford Road, Bradford	-----	X (unshaded)	-----	-----	-----	No	yes	-----	-----	-----	-----	-----	public safety; property damage; disruption of services; economic loss
	39 - Westerly Ambulance Corps (Private) 30 Chestnut Street	-----	X (unshaded)	-----	-----	-----	No	yes	-----	-----	-----	-----	-----	public safety; property damage; disruption of services; economic loss
	40 - Westerly Education Center (Private) 23 Friendship Street	-----	X (unshaded)	-----	-----	-----	No	yes	-----	-----	-----	yes	-----	public safety; property damage; disruption of services; economic loss
	41 - Westerly Hospital (Private) 25 Wells Street	-----	X (unshaded)	-----	-----	-----	Yes (flat roof)	yes	-----	-----	-----	yes	-----	public safety; property damage; disruption of services; economic loss
	42 - Westerly Library & Wilcox Park (Private) 44 Broad Street	-----	X (shaded)	-----	-----	-----	4	No	yes	-----	-----	-----	yes	-----
National Register of Historic Places	43 - Babcock-Smith House (Private) 124 Granite Street	-----	X (unshaded)	-----	-----	-----	No	yes	-----	-----	-----	-----	-----	
	44 - Flying Horse Carousel (Private) 151-153 Bay Street Watch Hill	-----	VE	5 ft	7 ft	2	No	yes	-----	-----	-----	-----	-----	
	45 - George Kent Performance Hall of the Chorus of Westerly (Private) 119 High Street	-----	X (unshaded)	-----	-----	-----	No	yes	-----	-----	-----	-----	-----	
	46 - Lewis-Card-Perry House (Private) 12 Margin Street	-----	X (shaded)	-----	-----	3	No	yes	-----	-----	-----	-----	-----	
	47 - Nursery Site (archaeological site) RI-273 – NW of Franklin Street & Rte 78	-----	X (unshaded)	-----	-----	-----	No	yes	-----	-----	-----	-----	-----	
	48 - Ram Point (Private) 77 Watch Hill Road	-----	X (unshaded)	-----	-----	-----	No	yes	-----	-----	-----	-----	-----	
	49 - U.S. Post Office (Federal) 5 High Street	-----	X (shaded)	-----	-----	3	No	yes	-----	-----	-----	-----	-----	public safety; property damage; disruption of services; economic loss
	50 - Weekapaug Inn (Private) 25 Spray Rock Road	-----	AE	9.8 ft	5 ft	2	No	yes	-----	-----	-----	-----	-----	
	51 - Westerly Armory (Public Building/ Privately Operated) 41 Railroad Avenue	-----	X (unshaded)	-----	-----	-----	Yes (flat roof)	yes	yes	-----	-----	-----	-----	-----

# APPENDIX 5-1

## Planning and Regulatory Capabilities

---

# Appendix 5-1

## Planning and Regulatory Capabilities

As part of plan integration, and in accordance with CRS Activity 510 Planning Process - Step 7, the Town reviewed, amongst other items, preventive activities including zoning, stormwater management regulations, building codes, subdivision ordinances, and the preservation of wetlands and open space.

With respect to local capabilities, a **Level of Effectiveness** rating has been assigned to assist in determining which measures should continue to be supported or enhanced. Capabilities with a low or moderate rating were further reviewed to determine if the measure should be updated or if the 2020-2040 Comprehensive Plan or another planning document effectively takes the place of the outdated document.

Where applicable, a hyperlink for the capability is provided.

**Local Capability: Level of Effectiveness**

**High:** Capability is working well and is regularly followed

**Moderate:** Capability could use some revisions but is followed

**Low:** Capability is not working and needs revisions

The following Table provides an overview of the critical planning and regulatory capabilities that play a role in the Town of Westerly's natural hazards mitigation effort. The information provided in the Table was obtained through the identified capability's website, Westerly's Comprehensive Community Plan, Westerly's 2018 Hazard Mitigation Plan, and/or Advisory Committee input.

<b>LOCAL</b> <i>(the capabilities have been listed in alphabetical order)</i>			
Description	Area Served	Effectiveness & Enforcement/ Maintenance	Key Discussion Points/ Plan Integration Considerations
<b>Comprehensive Community Plan (2020-2040)</b>			
<p>In accordance with Rhode Island General Law (RIGL) §45-22.2, the Rhode Island Comprehensive Planning and Land Use Regulation Act, the Town of Westerly has created, adopted, and will maintain a comprehensive community plan.</p> <p>The 2020 Comprehensive Community Plan (CCP) was adopted by the Town Council following its public hearing on January 4, 2021. The Westerly Planning Board's approval and the Town Council's adoption of this CCP signify that the vision, goals, policies, and actions incorporated in the Plan will best serve and protect the public interest over the next decade, or two. The CCP has been incorporated into the Code of Ordinances as Chapter 10.</p>	Town-wide	Effectiveness: High  Enforcement/ Maintenance: Planning Board and Planning Dept	<p>The planning efforts associated with the <i>HM&amp;FMP</i> have been coordinated with the Town's 2020 Comprehensive Community Plan. In compliance with the Rhode Island Comprehensive Planning and Land Use Act amendments of 2011, the current CCP includes a Natural Hazards Element.</p> <p>To ensure alignment between the two documents, the 2020 CCP was reviewed and used as a key resource in developing this <i>HM&amp;FMP</i>. The Goals, Policies, and Actions included in the <b>Natural Hazard &amp; Resiliency</b> section, as well as other pertinent sections were reviewed and incorporated as appropriate into the <i>HM&amp;FMP Action Plan</i>.</p> <p>The CCP should be reviewed on an annual basis concurrent with the <i>HM&amp;FMP</i> review in order to consider revisions that would further align with the goals of the <i>HM&amp;FMP</i>. In future updates, to establish the authority and accountability for the</p>

Description	Area Served	Effectiveness & Enforcement/ Maintenance	Key Discussion Points/ Plan Integration Considerations
<p>The Town's Comprehensive Plan identifies goals, policies, and actions for growth and development that reflect the values of the community. It provides a framework for decision making by establishing a basis for initiating and evaluating the consistency of proposed regulations, policies, and capital expenditures, and addresses increased development pressures, open space, recreation, public services and facilities, and economic development.</p> <p>The CCP is available on the Town's website.</p>			<p><i>HM&amp;FMP's</i> implementation, amendments will be made to Westerly's Comprehensive Community Plan that appropriately address the theme of natural hazard mitigation. Further, in future updates, the Town will continue to look for opportunities to integrate the <i>HM&amp;FMP</i> objectives and action items into CCP Elements. Incorporating the <i>HM&amp;FMP</i> into the CCP will strengthen the Town's position to implement the <i>HM&amp;FMP</i> as it will carry the full legal weight and authority of the CCP.</p> <p>Refer to <b>Appendix 6.1</b> for an overview of the Comprehensive Plan actions and measures that were reviewed for inclusion in the <i>HM&amp;FM Action Plan</i>. Those selected have been noted accordingly in the <i>Action Plan</i>.</p>
<b>Comprehensive Emergency Management Plan (2018)</b>			
<p>The Westerly Comprehensive Emergency Management Plan (CEMP) is a preparedness document that addresses the Town's planned response to extraordinary emergency situations associated with natural disasters, technological accidents, Terrorism, and Weapons of Mass Destruction (WMD).</p>	Town-wide	<p>Effectiveness: High</p> <p>Enforcement/ Maintenance: Monitored by Emergency Management/ Police Department</p>	<p>The CEMP is designed to work in concert with the State of Rhode Island Comprehensive Emergency Management Plan and the Federal Emergency Management Agency's (FEMA) National Response Framework (NRF) utilizing the National Incident Management System (NIMS).</p>
<b>Continuity of Operations/Government Plan (2015)</b>			
<p>The Continuity of Operations/Government Plan (COOP) outlines the process and actions to manage emergency operations for the Town of Westerly. It is an in-house preparedness document that provides the Town with a framework to respond to disasters or emergencies while continuing to provide day-to-day essential services.</p>	Town-wide	<p>Effectiveness: High</p> <p>Enforcement/ Maintenance: Monitored by Emergency Management/ Police Department</p>	<p>The COOP is reviewed and updated as needed by the Westerly Emergency Management Agency, and distributed as deemed appropriate by the Director of Public Safety/Emergency Management Director. The Town will incorporate this plan and the concepts enumerated within, into the regular training and exercise cycle.</p>
<b>Energy Management Plan (2016)</b>			
<p>The 2016 Energy Management Plan represented a starting point for Westerly to formalize their sustainability goals and planned actions. This document was to serve as a roadmap to guide decision-making and action toward a more sustainable future by setting a quantitative energy reduction goal, a renewable energy goal, and a low emissions vehicle fleet goal.</p> <p>While an important first step, only implementation of small-scale projects to support energy goals has occurred and the plan has not been maintained and updated on an annual basis.</p>	Town-wide	<p>Effectiveness: Low</p> <p>Enforcement/ Maintenance: Managed by the DPW-Facilities</p>	<p>The Town of Westerly believes that monitoring and managing the energy performance of its facilities and fleet are critical for mitigating against high and volatile energy prices, lowering operating costs, and reducing greenhouse gas emissions.</p> <p>Greenhouse gases are known to cause climate change which is linked to an increase in the intensity and frequency of various natural hazards, including flooding, storm surge, and SLR. A reduction in the Town's energy consumption and/or purchasing a greater amount of renewable energy sources, such as solar and wind power, will reduce the Town's carbon footprint and is therefore a notable cross-over objective with the <i>HM&amp;FMP</i>.</p> <p>As identified in the Comprehensive Community Plan, with assistance from an energy consultant, the Town intends to update the 2016 Energy Management Plan in accordance with RIBB requirements for funding. When the update occurs, it should integrate relevant goals and actions from the 2020 Comprehensive Plan and the 2023 <i>HM&amp;FMP</i>.</p> <p>Refer to <b>Appendix 6.1</b> for an overview of the Energy Management Plan actions and measures that were reviewed for inclusion in the <i>HM&amp;FM Action Plan</i>. Those selected have been noted accordingly in the <i>Action Plan</i>.</p>

Description	Area Served	Effectiveness & Enforcement/ Maintenance	Key Discussion Points/ Plan Integration Considerations
<b>Geographic Information System (GIS)</b>			
<p>The Town Tax Assessor is responsible for maintaining GIS data such as updates related to new subdivisions and street extensions. The Department of Public Works is responsible for maintaining GIS data related to the infrastructure under their authority (storm drainage and sanitary sewer system). Improvements to the Town's geodatabase and mapping is completed by Town Departments or their consultants.</p> <p>Various Town Departments utilize the GIS data for planning, mapping, or reference.</p> <p>An on-line web viewer provides Town Departments and the public easy access to Westerly's GIS mapping which includes the following layers:</p> <ul style="list-style-type: none"> <li>• <b>Locally maintained data:</b> Airport overlay district, fire districts, historic overlay district, local Aquifer Protection Zone, local Wellhead Protection Zone, parcels, polling places, State voting districts, storm drainage system, tax map index, Town voting districts, zoning, and zoning overlay districts, etc.</li> <li>• <b>State-maintained (RIGIS) data:</b> address points (E911), bathymetry, bike path, buildings (tennis courts/pools), cemetery, contours, flood zones, hiking trails, land use, major gas lines, roadways, sidewalks, soils, streams and water bodies, town boundaries, watershed, water supply district, and wetlands, etc.</li> </ul>	Town-wide	<p>Effectiveness: High</p> <p>Enforcement/ Maintenance: Managed by a third-party vendor, with inputs from Tax Assessor and Engineering/ DPW</p>	<p>The Town's geodatabase is an excellent tool to illustrate ideas through maps, and qualitatively and quantitatively assess hazard impacts for decision making. As detailed in several Sections throughout the <i>HM&amp;FMP</i>, GIS mapping and analysis assisted the Advisory Committee in understanding the extent of current and future hazard impacts.</p> <p>Building and maintaining the Town's GIS is an ongoing process which will benefit hazard mitigation planning. The Town has made significant improvements in their geodatabase over the past five-years, including mapping the Town's storm drainage system. The updated information will assist the Town in analyzing drainage system improvements to mitigate flooding.</p> <p>Although it will continue to be necessary for various departments to guide improvements of specific GIS layers, it may be beneficial for the Town to establish a single department that maintains the integrity of the Town geodatabase.</p> <p>Improvements to the community's GIS may qualify for points under CRS Activity 440.</p>
<b>Harbor Management Plan (2016-Revised 10/28/2019)</b>			
<p>Westerly enjoys approximately 9 miles of historically important, economically significant, visually attractive, and natural resource rich shoreline, several miles of river (both active and passive), and navigable salt ponds.</p> <p>The Westerly Harbor Management Plan (HMP) is formulated in order to regulate the Town's coastal and riverine water resource uses with a long range vision for controlled growth and development of harbor and shoreline areas. The legislative authorities are from the State, including CRMC and RIDEM.</p> <p>Chapter 4 of Title 46 of the General Laws of Rhode Island (Harbors and Harborlines) grants certain regulations by municipalities for public waters in their jurisdiction. Activities can be controlled by Ordinance and an appointed Harbormaster. The role of the Harbor Management Plan (HMP) is to gather information, decide on issues, and implement the Ordinance.</p>	Coastal & Harbor Areas	<p>Effectiveness: Low</p> <p>Enforcement/ Maintenance: Harbormaster</p>	<p>It is recommended that the Harbor Management Plan be reviewed on an annual basis concurrent with reviewing and updating both the <i>HM&amp;FMP</i> and the Comprehensive Community Plan. Coordination with the <i>HM&amp;FMP</i> will assist in determining the projected impact of natural hazards to the waterfront and harbor areas. With respect to flood mitigation, updates to the HMP should address future SLR projections as adopted by CRMC.</p> <p>Refer to <b>Appendix 6.1</b> for an overview of the Harbor Management Plan actions and measures that were reviewed for inclusion in the <i>HM&amp;FM Action Plan</i>. Those selected have been noted accordingly in the <i>Action Plan</i>.</p> <p>Changes in both Town government and CRMC administration have provided an opportunity to revisit the HMP.</p>

Description	Area Served	Effectiveness & Enforcement/ Maintenance	Key Discussion Points/ Plan Integration Considerations
<b>*** THIS DOCUMENT - Hazard Mitigation &amp; Flood Management Plan (2023)</b>			
<p>This document - the <i>2023 HM&amp;FMP</i> - was developed with an understanding of the increased importance of identifying and implementing community centric strategies to reduce the impacts of future hazard events on people, property, and the environment. The <i>Plan</i> describes critical issues, planning opportunities, and goals, strategies, and actions related to natural hazard mitigation.</p> <p>This Plan will supersede the Town's 2018 Hazard Mitigation Plan.</p>	Town-wide	<p>Effectiveness: High</p> <p>Enforcement/ Maintenance: Managed by Emergency Management</p>	<p>The HM&amp;FMP Advisory Committee will be responsible for the annual <i>HM&amp;FMP</i> review. The Committee consists of members representing the following Town departments, alongside residents and other stakeholders. Most of the following departments will assume a lead role in implementing one or more of the actions identified in the Action Plan.</p> <p>Planning, Building, Public Works, Utilities, Emergency Management, Engineering, Police/Harbor Master</p> <p>As the <i>HM&amp;FMP</i> has been developed with respect to CRS Activity 510, this plan should qualify for CRS credit.</p>
<b>Hazard Mitigation Plan (2018)</b>			
<p>The 2018 HMP was used as a key reference for this <i>HM&amp;FMP</i>. The 2018 plan describes critical issues, planning opportunities, and identifies goals, strategies, and actions related to natural hazard mitigation.</p> <p>The 2018 Hazard Mitigation Plan will be superseded by the 2023 HM&amp;FMP (this document).</p>	Town-wide	<p>Effectiveness: Moderate</p> <p>Enforcement/ Maintenance: Managed by Emergency Management</p>	<p>A detailed review of the status of the 2018 Action Plan has been provided in <b>Section 5.3</b>.</p> <p>As shown in <b>Appendix 6.1</b>, all of the non-completed 2018 HMP actions have been included in the <i>2023-2028 Action Plan</i>.</p>
<b>MRP Community Resilience Building Workshop Summary of Findings (2019)</b>			
<p>This report provides a summary of the Town of Westerly's Community Resilience Building (CRB) Workshop that was held in August 2019. The workshop was part of the Resilient Rhody: Municipal Resilience Program (MRP), an initiative of the RI Infrastructure Bank in partnership with The Nature Conservancy. The Workshop provided a community-driven process to assess current hazard and climate change impacts and to identify projects, plans, and policies for improved resilience.</p>	Town-wide	<p>Effectiveness: High</p> <p>Enforcement/ Maintenance: Managed by the Planning Dept</p>	<p>Numerous hazard mitigation actions were identified and prioritized through this community-driven process, including actions to mitigate flooding. Measures identified in this report have the potential for funding assistance through the MRP Action Grant Program administered by the Rhode Island Infrastructure Bank (RIIB).</p> <p>Refer to <b>Appendix 6.1</b> for an overview of the SOF actions and measures that were reviewed for inclusion in the <i>HM&amp;FM Action Plan</i>. Those selected have been noted accordingly in the <i>Action Plan</i>.</p>
<b>The Code of the Town of Westerly RI: Chapter 90 Building Construction Rhode Island General Law, Chapter 23-27.3 State Building Code</b>			
<p>Rhode Island administers a State Building Code through the <b>Rhode Island Building Code Commission (BCC)</b>. The BCC is tasked with protecting public health, safety and welfare by establishing minimum standards of construction in Rhode Island. Safe structures are achieved through a combination of code-based design &amp; construction practices, and an inspection process that ensures compliance with the established standards. The building codes of Rhode Island adopt the International Building Code.</p> <p>The <b>International Building Code (IBC)</b> is a model building code developed by the <b>International Code Council (ICC)</b>. It has been adopted for use as a base code standard by most jurisdictions in the United States. The International Code Council (ICC) is the leading global source of model codes and standards and building safety solutions that include product evaluation, accreditation, technology,</p>	Town-wide	<p>Effectiveness: High</p> <p>Enforcement/ Maintenance: Building Official</p>	<p>The Planning, Zoning, and Building Departments exercise a high level of regulatory control over proposed new construction and renovations in flood-prone areas. Regulating development in flood-prone areas is a critical component in flood mitigation and is a requirement for participating in the National Flood Insurance Program (NFIP). The Town of Westerly elects to comply with the requirements of the National Flood Insurance Act of 1968 (P.L. 90-488, as amended) which allows property owners to purchase flood insurance through the NFIP.</p> <p>The NFIP standards for wind, and snow loads are an integral part of the RI State Building Code, ensuring that all new construction and substantial improvements meet national flood resistant standards through consistent statewide application of the NFIP minimum criteria.</p>

Description	Area Served	Effectiveness & Enforcement/ Maintenance	Key Discussion Points/ Plan Integration Considerations
<p>training, and certification. The Code Council's codes, standards, and solutions are used to ensure safe, affordable, and sustainable communities and buildings worldwide.</p> <p>The Building Code is implemented statewide and enforced locally through the building official. The Code consists of uniform regulations to control construction, reconstruction, repair, removal, demolition, and inspection of all buildings.</p> <p>Westerly's Building Official is responsible for ensuring new structures and substantial improvements meet Building Code requirements. Before a building permit is issued for construction in the SFHA (A or V flood zones), a thorough review of the proposed work is compiled for flood zone requirements, and an elevation certificate may be required to verify the proposed structure meets the minimum first-floor elevation requirements.</p>			<p>Key Building Code requirements related to hazard mitigation include:</p> <ul style="list-style-type: none"> <li>• New buildings south of Route 1A are required to be designed to withstand wind speeds of 120 mph (Category 3 hurricane)</li> <li>• Bridges must be built to withstand seismic forces based on the bridge classification and site-specific geophysical conditions</li> </ul> <p>Maintaining Elevation Certificates per CRS guidelines may qualify for credit under CRS Activity 310. Additional building code related credit may be obtained under CRS Activity 430.</p>
<b>The Code of the Town of Westerly RI: Chapter 127 Floodplain Management</b>			
<p>The Town of Westerly elects to comply with the requirements of the National Flood Insurance Act of 1968 (P.L. 90-488, as amended), which allows property owners to purchase flood insurance through the NFIP.</p> <p>The purpose of this chapter is to ensure public safety, minimize hazards to persons and property from flooding, to protect watercourses from encroachment, and to maintain the capability of floodplains to retain and carry off floodwaters.</p>	<p>Town-wide, with emphasis on the SFHA (Flood Zones VE, AE, and A)</p>	<p>Effectiveness: Moderate</p> <p>Enforcement/ Maintenance: Managed by Building Official and Floodplain Administrator</p>	<p>As proper stormwater management can have a positive impact on flood mitigation, enforcement of these regulations is important.</p> <p>Improvements to these regulations could be made to make them more effective in achieving the purpose.</p> <p>These regulations may qualify for CRS Activity 450 credit.</p>
<b>The Code of the Town of Westerly RI: Chapter 162-2 Burning Restricted</b>			
<p>This regulation helps to prevent fire hazards within the Town. The provision states that no person shall burn trash, lumber, leaves, straw or any other combustible material, in any street, alley or vacant lot, within the compact part of the Town, except by special permission of the Chief of the Fire Department; when such burning shall be done in screened metallic receptacles and under such proper safeguards as he may direct as to time and weather. The Chief of the Fire Department may issue a general permit by publication during certain seasons of the year for the burning of leaves or other material when conducted during daylight and with an adult in constant attendance.</p>	<p>Town-wide</p>	<p>Effectiveness: High</p> <p>Enforcement/ Maintenance: Fire Departments</p>	<p>The restrictions on burning will assist in mitigating human initiated wild/brush fires. In Westerly it is prohibited to conduct outdoor burning without obtaining a permit from the Fire District where the burning will take place. All outside burning is prohibited during high or extreme fire dangers.</p>
<b>The Code of the Town of Westerly RI: Chapter 224 Stormwater Management</b>			
<p>The purpose of this chapter is to establish minimum stormwater management requirements and controls to protect and safeguard the general health, safety, and welfare of the public residing in watersheds within the Town of Westerly. This chapter seeks to meet that purpose through the following objectives:</p> <ul style="list-style-type: none"> <li>• Minimize increases in stormwater runoff from any development in order to reduce</li> </ul>	<p>Town-wide</p>	<p>Effectiveness: Moderate</p> <p>Enforcement/ Maintenance: Managed by Engineering &amp; Building Departments &amp; Planning Board</p>	<p>As proper stormwater management can have a positive impact on flood mitigation, enforcement of these regulations is important.</p> <p>Improvements to these regulations could be made to make them more effective in achieving the purpose.</p> <p>These regulations may qualify for CRS Activity 450 credit.</p>

Description	Area Served	Effectiveness & Enforcement/ Maintenance	Key Discussion Points/ Plan Integration Considerations
<p>flooding, siltation, increases in stream temperature and stream bank erosion and maintain the integrity of stream channels</p> <ul style="list-style-type: none"> <li>Minimize increases in nonpoint source pollution caused by stormwater runoff from development which would otherwise degrade local water quality.</li> <li>Reduce stormwater runoff rates, soil erosion and nonpoint source pollution, wherever possible, through stormwater management controls and to ensure that these management controls are properly maintained and pose no threat to public safety.</li> </ul>			
<b>The Code of the Town of Westerly RI: Chapter 260 Zoning</b>			
<p>The Zoning Ordinance has may Articles that support the goals and objectives of the <i>HM&amp;FMP</i>, including the following:</p> <p><b>Article X Overlay Zoning Districts:</b> Overlay zoning districts are intended to provide additional regulations for particular areas of the Town, including the following:</p> <ul style="list-style-type: none"> <li>§ 260-52 Aquifer and Wellhead Protection Overlay District</li> <li>§ 260-53 Salt Pond Overlay District</li> <li>§ 260-55 Historic Overlay District</li> <li>§ 260-56 River Corridor Overlay District (not yet created)</li> </ul> <p><b>Article XII - § 260-89 Erosion and Sediment Control :</b> The purpose of this section is to prevent soil erosion and sedimentation from occurring as a result of nonagricultural development within the Town by requiring proper provisions for water disposal, and the protection of soil surfaces during and after construction, in order to promote the safety, public health, and general welfare of the Town.</p>	Town-wide	<p>Effectiveness: High</p> <p>Enforcement/ Maintenance: Planning Office &amp; Engineering Department</p>	<p>As zoning provides the legal framework for land governance and can impact hazard mitigation, enforcement of these regulations is important. All proposed zoning changes should consider how the change will impact natural hazard mitigation.</p> <p>Some zoning regulations may qualify for credit under CRS Activity 430.</p>
<b>The Code of the Town of Westerly RI: Chapter A261 Land Development and Subdivision Regulations</b>			
<p>All development and subdivision projects in the Town of Westerly are reviewed by the Planning Board in accordance with RI General Laws and the Town Planning Board Rules and Regulations. In Westerly the planning process is collaborative and the Planning Board has the authority to call upon other departments, boards, committees and officials of the Town of Westerly and upon regional, state, and federal agencies for information and assistance in the performance of its duties.</p> <p>The Land development and Subdivision Regulations has may Articles that support the goals and objectives of the <i>HM&amp;FMP</i>, including the following:</p> <p><b>Article III - § A261-15 Land Unsuitable for Development:</b> When determining the number of residential building lots or units permitted on any parcel, land included in all of the</p>	Town-wide, with emphasis on coastal and flood-prone areas	<p>Effectiveness: Low</p> <p>Enforcement/ Maintenance: Planning Board, and Planning Dept</p>	<p>Subdivision and development regulations allow for an important review process. Those with input into this process should familiarize themselves with the <i>HM&amp;FMP</i>. How development in the floodplain is handled is critical in terms of flood mitigation. The Subdivision regulations have very minimal regulations on floodplain management, and improvements to these regulations are needed to adequately address development in the floodplain. Environmental Impact Statements can be requested to help assess the short- and long-term cumulative environmental impacts including flooding and drainage. However, this has not been exercised in the past.</p> <p>Depending on the recommendations and implementation of a project, credit may be obtained under CRS Activities 450, 520, or 530.</p>

Description	Area Served	Effectiveness & Enforcement/ Maintenance	Key Discussion Points/ Plan Integration Considerations
<p>following categories may be considered unsuitable for development and may be deducted from the minimum building acreage of the parcel:</p> <ul style="list-style-type: none"> <li>• Freshwater wetlands, except that area of perimeter wetland within 50 feet of the edge of any bog, marsh, swamp or pond; or any applicable one-hundred-foot or two-hundred-foot riverbank wetlands, as defined by RIGL 2-1-20 (1987), as amended.</li> <li>• Coastal wetlands, except any directly associated contiguous areas, as defined by RIGL 46-23-6 (1990), as amended.</li> <li>• [Amended at time of adoption of Code (see Ch. 1, General Provisions, Art. I)]</li> <li>• Areas within the one-hundred-year flood zone as defined by FEMA.</li> <li>• Land within any publicly or privately held easement on which aboveground utilities, including but not limited to electrical transmission lines, are constructed.</li> </ul> <p><b>Article VI - § A261-30.1 Bioretention and Stormwater Management:</b> The purpose of bioretention practices is to improve stormwater problems and to enhance the principle of zero net runoff from all properties. These practices reduce the use of curb and gutter construction and encourage sheet flow to retention areas and grass swales, which reduce runoff volume that creates downstream flooding during major storm events. The practice also reduces runoff velocity by increasing the time of concentration that water remains in filter soil and planted areas, which can filter pollutants and recharge groundwater. The planted portions of these bioretention areas shall enhance aesthetics and provide habitat for native flora and fauna.</p>			
<b>Westerly Debris Management Plan (2016)</b>			
<p>The Westerly Debris Management Plan was developed through a cooperative effort involving the eight contiguous mainland communities of Charlestown, Exeter, Hopkinton, Narragansett, North Kingstown, Richmond, South Kingstown, and Westerly. The primary objective of the plan was the identification, assessment, and coordination of debris management resources.</p>	Town-wide	<p>Effectiveness: High</p> <p>Enforcement/ Maintenance: Managed by Emergency Management/ DPW</p>	<p>This plan anticipates and plans for debris management needs that may result from any type of disaster event that could create unusual or extensive debris management challenges that would temporarily overwhelm existing solid waste, recycling, and composting programs.</p>
<b>Westerly Route 1 Corridor Report (2022)</b>			
<p>The Westerly Route 1 Corridor Report combines new analysis (2022) with work previously done by various parties, in an effort to develop a cohesive, implementable strategy for the Route 1 Corridor that will guide Town departments, the Planning Board, the Economic Development Commission, private properties owners and investors, and state agencies.</p>	Along Route 1 Corridor	<p>Effectiveness: Potential High</p> <p>Enforcement/ Maintenance: Planning Office, Planning Board, EDC</p>	<p>The Town of Westerly has developed a draft strategic plan for the Route One Corridor to encourage the type of development the Town and community would like to see along Route One to meet the goals of the 2020-2040 Comprehensive Community Plan.</p> <p>Once adopted, it is recommended that the Westerly Route 1 Corridor Report be reviewed on an annual basis concurrent with reviewing and updating both the <i>HM&amp;FMP</i> and the</p>

Description	Area Served	Effectiveness & Enforcement/ Maintenance	Key Discussion Points/ Plan Integration Considerations
<p>In an effort to improve travel along Route 1 so that it flows logically with clear wayfinding and is safe and convenient for all modes of transportation, the study proposes consolidation of curb cuts, improved access management between businesses and other uses; improved pedestrian connection and safety through consistent sidewalks and more appropriately signalized crossings; and establishment of aesthetically consistent sign standards. Because Route 1 is owned by the State of Rhode Island, implementation will require significant coordination with RIDOT. This should begin with a Road Safety Audit, which will help to determine deficiencies and to direct interventions.</p>			<p>Comprehensive Community Plan. Coordination with the <i>HM&amp;FMP</i> will assist in implementing infrastructure or other improvements that take into consideration the projected impact of natural hazards along the corridor.</p> <p>Refer to <b>Appendix 6.1</b> for an overview of the Route 1 Corridor Study actions and measures that were reviewed for inclusion in the <i>HM&amp;FM Action Plan</i>. Those selected have been noted accordingly in the <i>Action Plan</i>.</p>

**REGIONAL/STATE** *(the capabilities have been listed in alphabetical order)*

Description	Area Served	Key Discussion Points/ Plan Integration Considerations
<b>Association of State Floodplain Managers (ASFPM)</b>		
<p>The ASFPM is a professional association with a membership of almost 1,000 state employees that, assists communities with the NFIP. ASFPM has developed a series of technical and topical research papers and a series of proceedings from their annual conferences.</p>	Town-wide	<p>Town staff engaged in stormwater management should consider membership in the ASFPA, and utilize the networking and resources to help insure flood mitigation best practices are implemented in Westerly.</p>
<b>Coastal Resources Management Council (CRMC)</b>		
<p>The CRMC plans for and manages RI's coastal resources. Their Management Program includes numerous policies and programs for the protection of coastal resources, including coastal wetlands and other shoreline features. The adoption of <i>Section 145 Climate Change and Sea Level Rise Policy</i> has helped the State and local communities prepare for climate change impacts through adaptation efforts and coastal resiliency measures.</p> <p>CRMC has statutory authority to restrict the alteration of coastal wetlands for preservation purposes, and to implement regulations requiring erosion setbacks, coastal buffer zones, and to prohibit construction on beaches, in dunes, and on barrier spits that are identified as undeveloped or moderately-developed. The preservation of wetlands from development and destruction will provide for the natural and beneficial use of wetlands as related to flood retention and natural buffers from coastal storms.</p> <p>CRMC staff give numerous presentations to professional groups and the general public on coastal hazards, climate change and other topics. They also partner with communities, State Departments, and other stakeholders (The Nature Conservancy, URI, Sea Grant, Save The Bay, etc.) to examine sea level rise (SLR) impacts, recovery from storm events, and other issues related to coastal preservation.</p>	Coastal Areas (including Salt Ponds and rivers)	<p>Various CRMC's resources and tools, including those listed below, were used in developing this <i>HM&amp;FMP</i> and should be consulted when reviewing/updating the <i>Plan</i> and as applicable when implementing actions.</p> <p>In 2018, CRMC adopted the <b>Shoreline Change Special Area Management Plan (Beach SAMP)</b> it developed in conjunction with URI, various State and local agencies, stakeholders, and coastal residents. The plan provides science-backed policies and planning tools to assess flood inundation coupled with SLR and shoreline erosion, to better inform State and local planning efforts and decision-making. Through a five-step permitting process, the plan targets the areas most vulnerable to climate change, including beaches, historic waterfronts, bluffs, peninsulas, and salt marshes. The Coastal Hazard Application Process will be implemented by regulatory amendments to CRMC's Red Book to address the coastal hazard issues detailed in the Beach SAMP chapters.</p> <p>The <b>Coastal Property Guide</b> provides regulations and policies adopted by Federal and State regulatory agencies and encourages people to understand what it means to live and build along the water.</p> <p><b>STORMTOOLS</b> is a method to map coastal storm inundation, with and without sea level rise, for varying return period storms that covers all of Rhode Island's coastal waters. STORMTOOLS uses an ArcGIS platform and can be accessed online.</p> <p><b>RI STORMTOOLS Design Elevation Maps (SDE)</b> have been designed to represent the once in one-hundred-year flooding and associated wave environment, and explicitly include the effects of sea level rise. Following FEMA methodology, the maps are provided in the form of Base Flood Elevations (BFE) and can be used to assist in the design of structures and</p>

Description	Area Served	Key Discussion Points/ Plan Integration Considerations
		<p>infrastructure in the State. They have also been specifically structured to support CRMC's Coastal Hazard Application permit requirement.</p> <p>The purpose of <b>Sea Level Affecting Marshes Model (SLAMM) Maps</b> is to show how coastal wetlands will likely transition and migrate onto adjacent upland areas under projected sea level rise scenarios of 1, 3 and 5 feet in the coming decades.</p> <p><b>RI Coastal Environmental Risk Index (CERI)</b> has been designed as an on-line Geographic Information System (GIS) based tool, and hence is fully compatible with current flood maps. The basic framework and associated GIS methods can be readily applied to any coastal area. The approach can be used by local and state planners to objectively evaluate different policy options for effectiveness and cost/benefit.</p> <p>RI CRMC <b>Coastal Hazard Application (CHA)</b> Worksheet and Viewer is to notify the applicant of potential coastal hazards that should be taken into consideration when planning shoreline development. These hazards include SLR, storm surge and associated flooding, and shoreline erosion. The CRMC's goal is to increase understanding and awareness of these potential hazards among the development community (property owners, builders, realtors, financial institutions and insurers) with the hope of guiding development and investment away from vulnerable areas.</p> <p><b>Rapid Property Assessment and Coastal Exposure (Rapid PACE)</b> is a tool for identifying coastal flooding risk and possible impacts on your property and community.</p> <p><b>Salt Pond Region Special Area Management Plan (SAMP)</b> was established within the municipalities of Westerly, Charlestown, South Kingstown, and Narragansett to provide for the integration and coordination of the protection of natural resources, the promotion of reasonable coastal-dependent economic growth, and the improved protection of life and property.</p> <p><b>The Pawcatuck River Estuary and Little Narragansett Bay: An Interstate Management Plan (1992)</b> describes the current status of the resources within the estuary, characterizes its watershed, identifies estuary resources of concern, and recommends management strategies and other initiatives.</p>
<b>Narragansett Bay National Estuarine Research Reserve (NBNERR)</b>		
<p><b>The Narragansett Bay National Estuarine Research Reserve</b> is one of 30 <b>National Estuarine Research Reserves</b> located around the country. Established to provide long-term protection of coastal lands so they can serve as platforms for research, education, and recreation. The Reserve is supported and administered by NOAA and managed by the RIDEM.</p>	Coastal Areas	The NBNERR is a good partner for outreach and education programs as well as a resource for science-based publications.
<b>Resilient Rhode Island Act</b>		
<p>In 2014, the General Assembly approved the <b>Resilient Rhode Island Act</b> which established the <b>Executive Climate Change Coordinating Council (EC4)</b> which is a 12-member council chaired by the RIDEM Director. The Council was charged with taking a lead role in developing a comprehensive approach, including both emissions reductions and adaptation planning, to address the potential threats from climate change to the state's environment, economy, and people. The EC4 will track greenhouse gas emissions to determine if the program targets are achieved. The targets are in terms of a reduction below 1990 levels of: 10 percent by 2020; 45 percent by 2035; and 80 percent by 2050.</p>	Town-wide	The Resilient Rhode Island Act also set specific greenhouse gas emissions reduction targets; established an advisory board and a science and technical advisory board to assist the Council; and incorporated consideration of climate change impacts into the powers and duties of all state agencies. These measures support hazard mitigation.

Description	Area Served	Key Discussion Points/ Plan Integration Considerations
<b>Resilient Rhody: Municipal Resilience Program</b>		
<p>In 2017, Governor Gina Raimondo signed an Executive Order appointing the State's first Chief Resilience Officer, to drive climate resilience efforts across the state, both within government and in collaboration with business, academic, and nonprofit partners, with the mission to develop a Statewide Climate Resilience Action Strategy by July 2018.</p> <p>In July 2018 Governor Raimondo introduced the <b>Resilient Rhody: Municipal Resilience Program (MRP)</b> which outlines a comprehensive Climate Resilience Action Strategy for the State. Through the MRP program the State is providing support to communities to engage in a municipal-driven process referred to as <b>Community Resilience Building (CRB)</b> which was developed by The Nature Conservancy.</p>	Town-wide	<p>In March 2019, the Town of Westerly submitted an application to participate in the Municipal Resilience Program and was selected as a first round recipient to complete the CRB process (August 2019) and be designated as a Resilient Rhody Municipality. Additional Information on the Town's 2019 CRB Workshop is provided in <b>Section 2.2</b>.</p> <p>The Rhode Island Infrastructure Bank (RIIB) continues to support the Town of Westerly through this program, providing check-ins on the progress made on addressing concerns and implementing projects. MRP Action Grants are available to implement mitigation projects.</p>
<b>Rhode Island Building Codes</b>		
<p>As indicated in the LOCAL section above, Rhode Island administers a State Building Code through the Building Code Commission. The Building Code is implemented statewide and enforced locally through the building official. The Code consists of uniform regulations to control construction, reconstruction, repair, removal, demolition, and inspection of all buildings.</p>	Town-wide	<p>As discussed in the LOCAL section above, Building Codes are an important regulatory tool for hazard mitigation.</p>
<b>Rhode Island Department of Administration (RIDOA) - Rhode Island Division of Statewide Planning (RIDSP)</b>		
<p>RIDOA plays a role in hazard mitigation and risk reduction in the State and manages the Rhode Island Climate Change website and other online resources. Technical assistance is provided by RIDOA divisions that have hazard mitigation and risk reduction capabilities, including the Office of Management and Budget, and Division of Statewide Planning. The Division of Statewide Planning prepares, maintains, and encourages the implementation of plans within the framework of the State's development goals and policies.</p>	Town-wide	<p>Various RIDOA resources, including mapping and modeling tools, were consulted when developing the <i>HM&amp;FMP</i> and should continue to be consulted for future updates and to assist in prioritizing <i>HM&amp;FMP</i> projects and implementing community outreach.</p> <p>The <b>Climate Change Website</b> serves as the State's primary portal for information and resources on climate change and resiliency. It addresses how to adapt to the projected effects of climate change such as coastal hazards like sea level rise and storm surge, as well as high heat, drought, and inland flooding.</p> <p><b>Risk Reduction for Small Business Resilience</b> Experience shows that 40% of small businesses affected by disaster never reopen; another 25% that do reopen fail. To help reduce this impact, the Risk Reduction for Small Business Resilience in RI project developed tools to support small businesses (less than 50 employees) to better prepare for extreme weather events.</p> <p><b>Statewide Planning's 2015 Technical Paper 164 - Vulnerability of Transportation Assets to Sea Level Rise</b> assesses transportation assets under state jurisdiction.</p> <p><b>Statewide Planning's 2016 Technical Paper 167 - Vulnerability of Transportation Assets to Sea Level Rise and Storm Surge</b> assesses transportation assets under state jurisdiction.</p> <p><b>Westerly, RI Coastal Sea Level Rise and Storm Surge Transportation Fact Sheet</b> provides municipal leaders and practitioners with a survey of Westerly's transportation infrastructure elements that may be affected by sea level rise and storm surge.</p> <p><b>Westerly RI Socioeconomics of Sea Level Rise Coastal Factsheet</b> To support local planning efforts, Statewide Planning developed the Socioeconomics of Sea Level Rise project. Among other things, the project identifies population characteristics of the people located within sea level rise (SLR) inundation zones 1, 3, 5 and 7 feet.</p>

Description	Area Served	Key Discussion Points/ Plan Integration Considerations
<b>Rhode Island Department of Environmental Management (RIDEM)</b>		
<p>RIDEM serves as the chief steward of the State’s natural resources, with a mission to protect, restore, and promote the environment. RIDEM protects resources through development and enforcement of environmental laws; and works with partners to restore lands and waters, to conserve wildlife and marine resources, and to monitor environmental quality in order to build healthy, more resilient communities.</p>	Town-wide	<p>Various RIDEM resources were consulted when developing the <i>HM&amp;FMP</i>. The RIDEM website should be perused on a regular basis for information that will support hazard mitigation decision making in the Town of Westerly.</p> <p><b>Implications of Climate Change for RI Wastewater Collection &amp; Treatment Infrastructure</b> assesses the projected implications of climate change on the state’s nineteen public wastewater treatment systems and recommends adaptive strategies.</p> <p>The following resources should be utilized in implementing stormwater related actions from this <i>Plan</i>:</p> <p>Effective management of stormwater requires attention to both the quantity (volume and peak rate) and quality of stormwater runoff. All stormwater management practices in RI must be consistent with the <b><i>RI Stormwater Design and Installation Standards Manual (Amended March 2015)</i></b> and the <b><i>RI Soil Erosion and Sediment Control Handbook</i></b>. This includes demonstrating that a proposed project provides for protection of life and property from flooding.</p>
<b>Rhode Island Department of Health (RIDOH)</b>		
<p>The mission of RIDOH is “To prevent disease and protect and promote the health and safety of the people of Rhode Island.”</p>	Town-wide	<p>RIDOH resources, including the following, should be used to assist in implementing community outreach for a variety of topics including climate change, water quality, and assisting vulnerable populations during hazard events.</p> <p>The <b><i>Climate Change and Health Program</i></b> has a number of resources that raise awareness about the connection between climate change and health. <b>Program Publications:</b></p> <p><b>Brochures</b></p> <ul style="list-style-type: none"> <li>• Climate Change and Air Quality (English) (Spanish)</li> <li>• Climate Change and Heat (English) (Spanish)</li> <li>• Climate Change and Mosquitoes (English) (Spanish)</li> <li>• Climate Change and Storms / Flooding (English) (Spanish)</li> <li>• Climate Change and Ticks (English) (Spanish)</li> <li>• Climate Change and Water (English) (Spanish)</li> </ul> <p><b>Guides</b></p> <ul style="list-style-type: none"> <li>• Climate Change and Health Teaching Resources</li> <li>• Climate Change and Your Health: A Guide for Rhode Islanders (English) (Spanish) (Portuguese)</li> <li>• Sustainability Pledge and Guide</li> </ul> <p><b>Plans</b></p> <ul style="list-style-type: none"> <li>• RI Climate Change Health Adaptation</li> </ul> <p><b>Reports</b></p> <ul style="list-style-type: none"> <li>• Climate Change and Health Needs Assessment (2021)</li> <li>• Climate Change and Health Resiliency (2015)</li> </ul> <p><b>The Rhode Island Climate Change and Health Program: Building Knowledge and Community Resilience</b> discusses improving climate resiliency as a key strategy to help RIDOH meet its overarching goals of addressing the socio-economic and environmental determinants of health for all Rhode Islanders.</p> <p><b>Rhode Island Special Needs Emergency Registry</b> allows first responders to better prepare for and respond to community needs during a hurricane, storm, or other emergency. The Town of Westerly encourages those who may need extra help during an emergency to register.</p> <p><b>SafeWater RI: Ensuring Safe Water for Rhode Island's Future</b> helps to address the implications of climate change to drinking water utilities.</p>

Description	Area Served	Key Discussion Points/ Plan Integration Considerations
<b>Rhode Island Department of Public Safety (RIDPS)</b>		
The Department of Public Safety oversees all the State of Rhode Island's public safety agencies to ensure efficient delivery of the services those agencies provide.	Town-wide	RIDPS supports hazard mitigation through its <b>E 911 Uniform Emergency Telephone System</b> which provides prompt transfers of emergency 911 calls to the appropriate responding public safety and rescue agencies utilizing call location technology.
<b>Rhode Island Department of Transportation (RIDOT)</b>		
RIDOT designs, constructs, and maintains state designated roads, bridges, and bike paths, some of which are within the Town of Westerly. In 2016, RIDOT underwent a complete restructuring based on passage of the \$5 billion RhodeWorks legislation that provides planning, execution, management and funding to bring Rhode Island's infrastructure into a state of good repair by the year 2025.  The <b><i>Rhode Island State Transportation Improvement Program (STIP)</i></b> is prepared by the Division of Statewide Planning and implemented through RIDOT.	Town-wide - roadway and bridge corridors under the authority of RIDOT	Westerly has important transportation infrastructure that is vulnerable to sea level rise. As such consideration of actions related to transportation improvements and the accessibility of the Town's emergency evacuation route during hazard events was a consideration in the <i>HM&amp;FMP</i> . The Town is interested in working with RIDOT and neighboring municipalities to ensure roadway vulnerabilities, including SLR, is adequately addressed.
<b>Rhode Island Emergency Management Agency (RIEMA)</b>		
RIEMA's mission is to reduce the loss of life and property for the whole community while ensuring that as a State we work together to build, sustain, and improve our capability to prepare for, protect against, respond to, recover from, and mitigate all natural, human-caused, and technological hazards.	Town-wide	The RIEMA website contains information on hazard mitigation, floodplain mapping, floodplain regulations, flood insurance, etc. It is an excellent resource and should be perused on a regular basis for information that will support hazard mitigation decision making in the Town of Westerly.  RIEMA's <b>2019 State Hazard Mitigation Plan (SHMP) Update</b> was a key resource in the development of this <i>HM&amp;FMP</i> . The SHMP provides comprehensive guidance for hazard mitigation with the intent of making homes, businesses, and communities in RI more resilient to the impacts of climate change, hurricanes, floods, tornadoes, earthquakes, winter storms, and other natural hazards.  Refer to <b>Appendix 6.1</b> for an overview of the RI State Hazard Mitigation Plan actions and measures that were reviewed for inclusion in the <i>HM&amp;FM Action Plan</i> . Those selected have been noted accordingly in the <i>Action Plan</i> .
<b>Rhode Island Energy - PPL Corporation (formerly National Grid/Narragansett Electric)</b>		
The Narragansett Electric Company was sold by its parent company, National Grid, in February 2022. The new owner, PPL Corporation, has changed the name to <b>Rhode Island Energy</b> .  In 2020, National Grid released its <b>Net Zero by 2050 Plan</b> . The Plan outlines the company's approach to exploring a wide range of solutions until they can deliver the affordable, reliable clean energy future customers want and deserve. It is unclear if PPL will implement the Net Zero by 2050 Plan which identifies 10 key areas of focus: <ul style="list-style-type: none"><li>• Reducing demand through energy efficiency and demand response;</li><li>• Decarbonizing the gas network through use of renewable natural gas and hydrogen;</li><li>• Reducing methane emissions from gas network while working with the industry to reduce emissions through the entire value chain;</li><li>• Integrating innovative technologies to decarbonize heat;</li><li>• Interconnecting large scale renewables with a 21<sup>st</sup> century grid;</li><li>• Enabling and optimizing distributed generation;</li></ul>	Town-wide	In compliance with State law, each year the utility submits a <i>Gas and Electric Infrastructure Safety and Reliability Plan</i> to the State of Rhode Island. The Plan is designed to enhance the reliability of their distribution system. The resiliency of this network is important to RI communities at all times, but particularly during a natural hazard event.  The Town appreciated National Grid's Net Zero Plan which supports hazard mitigation through helping to curb climate change by decreasing greenhouse gas emissions, and would appreciate if Rhode Island Energy chooses to implement the plan.  In the past, National Grid conducted tree inspection of its power line corridors roughly every three years and would take down problem limbs/trees as needed. With increased storm events that can jeopardize the electrical grid, the Town supports Rhode Island Energy continuing or accelerating their tree maintenance program.

Description	Area Served	Key Discussion Points/ Plan Integration Considerations
<ul style="list-style-type: none"> <li>• Utilizing storage;</li> <li>• Eliminating SF6 emissions;</li> <li>• Advancing clean transportation; and investing in large scale carbon management.</li> <li>•</li> </ul>		
<b>Rhode Island Flood Mitigation Association (RIFMA)</b>		
<p>RIFMA was formed In October 2006 with the goal of forming a network of associates who share their ideas and experiences. The result of the Association is a network of floodplain managers who can improve the effectiveness and efficiency of all aspects of floodplain management in the State of Rhode Island. RIFMA regularly provides training opportunities and an annual floodplain conference.</p>	Town-wide	Town staff engaged in stormwater management are members in the RIFMA, and utilize the networking and resources to help insure flood mitigation best practices are implemented in Westerly.
<b>Rhode Island Geographic information System (RIGIS)</b>		
<p>The Rhode Island Geographic Information System (RIGIS) is a group of government and private organizations which promote the use of the latest GIS data. They manage and provide free access to an extensive database of geospatial data for the State.</p>	Town-wide	Many of the Town's ArcGIS layers were acquired from RIGIS and used to prepare the maps in the <i>HM&amp;FMP</i> . As it is important to maintain a current geodatabase, on an annual basis the Town should review their RIGIS layers and update or add new layers as appropriate.
<b>Rhode Island Office of Energy Resources (RIOER)</b>		
<p>RIOER's mission is to lead the State toward a clean, affordable, reliable, and equitable energy future. OER develops policies and programs that respond to the State's evolving energy needs, while advancing environmental sustainability, energy security, and a vibrant clean energy economy.</p>	Town-wide	<p>RIOER supports hazard mitigation through developing, administering, and monitoring a variety of programs designed to promote energy efficiency, renewable energy, and alternative fuels which will help to curb climate change by decreasing greenhouse gas emissions.</p> <p>In January 2016, RIOER and National Grid contracted with CHA Consulting on behalf of Westerly and other municipalities to assist in Rhode Island Infrastructure Bank (RIIB) applications. In Westerly, this included completing Technical Energy Audit Reports for the Police Station and the Town Hall. Energy conservation measures recommended for the Police Station included HVAC control improvements, and replacing existing HID and fluorescent lighting with LED.</p>
<b>Rhode Island Sea Grant</b>		
<p>Rhode Island Sea Grant is a state-based program with federal funding from NOAA. They collaborate with scientists from URI and other institutions, to further understand the science and policy implications of climate change. They also work with coastal communities, including Westerly to support long-term, sustainable solutions.</p>	Coastal Areas	<p>Various resources from the Sea Grant website were consulted during development of the <i>HM&amp;FMP</i>. The Sea Grant often collaborates on research including fact sheets to highlight impacts to the built environment, public health and welfare, and natural resources. Some of the documents consulted include:</p> <ul style="list-style-type: none"> <li>• <b>Precipitation and Storms in Rhode Island: Trends and Impacts</b></li> <li>• <b>Sea Level Rise in Rhode Island: Trends and Impacts</b></li> <li>• <b>Smart Growth for Coastal and Waterfront Communities</b></li> <li>• <b>Climate Change in Rhode Island: What's Happening Now &amp; What You Can Do</b></li> </ul> <p>Sea Grant resources should be considered especially when implementing hazard mitigation education and outreach activities.</p>
<b>Salt Ponds Coalition (SPC)</b>		
<p>The Salt Ponds Coalition (SPC) is the official State-designated watershed council for RI Coastal Ponds. SPC was founded in 1985 with the intent to protect and enhance the health of the six major salt ponds they monitor (two of which are in Westerly) for the benefit of wildlife and people.</p>	Salt Pond Watershed	<p>Salt ponds and salt marshes aid hazard mitigation in a number of ways and it is therefore important for the Town to work with the SPC to actively protect these areas. The two salt ponds monitored by the SPC in Westerly are the Winnapaug (or Brightman's) Salt Pond and the Quonochontaug (or Quonnie) Salt Pond.</p>

Description	Area Served	Key Discussion Points/ Plan Integration Considerations
<b>Wood-Pawcatuck Watershed Association (WPWA)</b>		
<p>The Wood-Pawcatuck Watershed Association (WPWA) was formed in 1983 as a non-profit organization, with the mission to preserve and protect the integrity of the lands and waters of the Watershed for the benefit of our natural and human communities.</p> <p>As the designated council for the watershed, WPWA has legal standing to advocate on behalf of the Wood-Pawcatuck Watershed. When necessary to serve the best interest of the watershed resource and the general public, WPWA will take a position on significant matters of land use, surface and groundwater use, water quality, threats to habitat, growth issues, and river corridor concerns.</p>	Wood-Pawcatuck Watershed	<p>As many of the WPWA's activities are directed toward educating and informing residents, visitors, and public officials about the watershed's pristine lands and water resources, the Town may want to coordinate certain outreach activities with the WPWA.</p> <p>In August 2017, WPWA and consultant Fuss &amp; O'Neill completed the <b>Wood-Pawcatuck Watershed Flood Resiliency Management Plan</b>. The document was prepared in partnership with several stakeholder organization and all watershed communities, including the Town of Westerly. As part of its efforts for Wild and Scenic designation, WPWA worked to identify a range of approaches and efforts to protect and restore numerous natural resources within the Wood-Pawcatuck Watershed. In the plan, conclusions led to prioritized recommendations under five (5) primary categories – dams and impoundments, culverts and bridges, floodplains and river corridors, wetlands, and stormwater. While many of the recommendations focused on improving water quality, some also supported hazard mitigation.</p>
<b>Wood-Pawcatuck Wild &amp; Scenic Stewardship Council</b>		
<p>The Wood-Pawcatuck Wild and Scenic Rivers Stewardship Council was established in early 2019 with representatives from the twelve towns in the watershed, along with state agency and other non-profit conservation organizations. Up to two council members (representative and alternate) are appointed by each Town Council and represent a broad range of expertise and interests related to protecting and enhancing the Wood-Pawcatuck watershed.</p> <p>Funding from the National Park Service Partnership Wild &amp; Scenic Rivers Program is controlled and managed by the Stewardship Council, but held by the Wood Pawcatuck Watershed Association (WPWA).</p>	Wood-Pawcatuck Watershed	<p>There may be opportunities for the Town to work in conjunction with the Council on education programs that have hazard mitigation components.</p> <p>By the end of 2018, the <b>Wood-Pawcatuck Wild and Scenic Rivers Stewardship Plan</b> was adopted by the Study Committee and 12 watershed towns.</p>
<b>FEDERAL</b> <i>(the capabilities have been listed in alphabetical order)</i>		
<b>Americans with Disabilities Act Guide for Small Towns</b>		
<p>The Americans with Disabilities Act (ADA) gives civil rights protections to individuals with disabilities. This guide presents an informal overview of some basic ADA requirements and provides cost-effective tips on how small towns can comply with the ADA.</p>	Town-wide	<p>In the development of the <i>HM&amp;FMP</i>, it was important for the Town to recognize how various vulnerable populations might be more severely impacted from certain hazards. In doing so, the opportunity to mitigate these impacts exists.</p>
<b>Clean Water Act</b>		
<p>The Federal Clean Water Act (CWA) employs regulatory and non-regulatory tools to reduce direct pollutant discharges into waterways, finance municipal wastewater treatment facilities, and manage polluted runoff. These tools are employed to achieve the broader goal of restoring and maintaining the chemical, physical, and biological integrity of the nation's surface waters so that they can support "the protection and propagation of fish, shellfish, and wildlife and recreation in and on the water." Evolution of CWA programs over the last decade has included a shift from a program-by-program, source-by-source, pollutant-by-pollutant approach to more holistic watershed-based strategies. Under the watershed approach, equal emphasis is placed on protecting healthy waters and restoring impaired ones.</p>	Town-wide	<p>As water quality can be impacted by hazard events, actions to mitigate water contamination or improve water quality were included in the <i>HM&amp;FMP</i>.</p>

Description	Area Served	Key Discussion Points/ Plan Integration Considerations
<b>Federal Disaster Mitigation (some key Acts)</b>		
<p>FEMA was established in 1979 through an Executive Order signed by President Carter that gave the agency the dual mission of emergency management and civil defense. The agency's authorities were further defined and expanded by the <b>Disaster Relief and Emergency Assistance Amendments of 1988</b> also known as the <b>Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1988</b>. The Stafford Act provided clear direction for emergency management and established the current statutory framework for disaster response and recovery through presidential disaster declarations. The Stafford Act authorizes technical, financial, logistical, and other assistance from the Federal government to state and local governments during declared major disasters and emergencies.</p>	Town-wide	<p>The following two acts are particularly beneficial to hazard mitigation.</p> <p>The <b>Disaster Mitigation Act of 2000</b> amended the Stafford Act and the Public Works Act to include grants for economic development and to require local governments to prepare hazard mitigation plans as a precondition for receipt of Hazard Mitigation Grant Program project funds. The Disaster Mitigation Act encourages communities to reduce preventable, repetitive disaster losses by mitigating natural hazards, vulnerability, and risk.</p> <p>The <b>Post Katrina Emergency Management Reform Act (PKEMRA) of 2006</b> clarified and modified the Homeland Security Act with respect to the organizational structure, authorities, and responsibilities of FEMA and the FEMA Administrator. It enhanced FEMA's responsibilities and its authority within DHS and transferred many functions of DHS's former Preparedness Directorate to FEMA.</p>
<b>Federal Emergency Management Agency (FEMA)</b>		
<p>FEMA was established in 1979 through an Executive Order signed by President Carter that gave the agency the dual mission of emergency management and civil defense. The agency's authorities were further defined and expanded by the Disaster Relief and Emergency Assistance Amendments of 1988 also known as the Stafford Act. The Stafford Act provided clear direction for emergency management and established the current statutory framework for disaster response and recovery through presidential disaster declarations.</p>	Town-wide with some resources more applicable to coastal and inland areas subject to flood inundation	<p>Numerous FEMA resources were consulted during the development of the <i>HM&amp;FMP</i>. The FEMA website contains information and tools related to hazard mitigation, floodplain mapping, floodplain regulations, flood insurance, emergency management, grants, etc. It is an excellent resource and should be perused on a regular basis for information that will support hazard mitigation decision making in the Town of Westerly. Some of the resources used can be found on the following webpages:</p> <ul style="list-style-type: none"> <li>• <a href="https://www.fema.gov/emergency-managers/risk-management/hazard-mitigation-planning">https://www.fema.gov/emergency-managers/risk-management/hazard-mitigation-planning</a></li> <li>• <a href="https://www.fema.gov/emergency-managers/national-preparedness/climate-change">https://www.fema.gov/emergency-managers/national-preparedness/climate-change</a></li> <li>• <a href="https://www.fema.gov/flood-maps/tools-resources/flood-map-products/hazus">https://www.fema.gov/flood-maps/tools-resources/flood-map-products/hazus</a></li> <li>• <a href="https://www.hurrevac.com/">https://www.hurrevac.com/</a></li> <li>• <a href="https://www.floodsmart.gov/">https://www.floodsmart.gov/</a></li> </ul> <p>As discussed in <b>Section 4</b> of this <i>Plan</i>, the Town has consistently taken the required steps, and will continue to do so, to participate in the NFIP federally-backed flood insurance program. Additionally, the Town participates in the CRS Program.</p> <p><b>National Flood Insurance Program (NFIP):</b> Regulating development in flood-prone areas is a critical component in flood hazard mitigation and is a requirement for participating in the NFIP, of which Westerly has been a member since 07-28-1972 (CID 445410). The NFIP makes flood insurance available to communities that enact minimum floodplain management regulations. The Town Building Official is the designated keeper of flood maps for Westerly.</p> <p><b>Community Rating System (CRS):</b> The Community Rating System (CRS) is a voluntary incentive program designed to encourage communities to engage in various community focused activities, promoting a comprehensive approach to floodplain management beyond the minimum NFIP requirements. As the Town participates in the CRS program, the Advisory Committee followed the 10-Step planning process used for FEMA's CRS Activity 510 in developing the <i>HM&amp;FMP</i>.</p>

Description	Area Served	Key Discussion Points/ Plan Integration Considerations
<b>National Oceanic and Atmospheric Administration (NOAA)</b>		
<p>NOAA’s mission to better understand our natural world and help protect its precious resources extends beyond national borders to monitor global weather and climate, and work with partners around the world. NOAA’s many assets — including research programs, vessels, satellites, science centers, laboratories and a vast pool of distinguished scientists and experts — are essential, internationally recognized resources. NOAA works with other nations to advance their ability to predict and respond to changes in climate and other environmental challenges that imperil Earth’s natural resources, human life and economic vitality.</p> <p>NOAA has a number of line offices including:</p> <ul style="list-style-type: none"> <li>• <b>National Weather Service (NWS)</b></li> <li>• <b>National Marine Fisheries Service</b></li> <li>• <b>National Ocean Service</b></li> <li>• <b>National Environmental Satellite, Data, and Information Service (NESDIS)</b></li> <li>• <b>Oceanic and Atmospheric Research</b></li> <li>• <b>Office of Marine and Aviation Operations &amp; NOAA Corps</b></li> </ul>	<p>Town-wide with some resources more applicable to coastal and inland areas subject to flood inundation</p>	<p>In preparing this <i>HM&amp;FMP</i>, numerous NOAA resources were used. NOAA provides reliable science-based information which should continue to be used by the Town on a regular basis to support hazard mitigation decision making. A few of the resources used include:</p> <p><b><i>Adapting to Climate Change: A Planning Guide for State Coastal Managers, NOAA (2010)</i></b>, which highlights guidance on adaptation planning to the built environment, public health and welfare, and natural resources.</p> <p>The National Hurricane Center’s <b><i>Sea, Lake and Overland Surges from Hurricanes (SLOSH)</i></b> model for Narragansett Bay which uses the bathymetry of the Bay and the topography of coastal Rhode Island to predict the coastal flooding effect from hurricanes that could be experienced in the region. The SLOSH model is used to determine the potential for storm surge and delineate hurricane evacuation zones.</p> <p>NOAA sponsored <b><i>Office for Coastal Management</i></b> has some excellent tools (for example Digital Coast) to address issues commonly associated with a changing climate and a growing population.</p> <p>NOAA has facilities, staff, programs, and activities based in, or focused on Rhode Island, including the Office of Ocean Exploration and Research Regional Office in Narragansett, and the Narragansett Bay National Estuarine Research Reserve on Prudence Island.</p>

# APPENDIX 5-2

## Administrative and Technical Capabilities

---

# Appendix 5-2

## Administrative and Technical Capabilities

The following Table provides an overview of the critical administrative and technical capabilities that play a role in the Town of Westerly's natural hazards mitigation effort. The information provided in the Table was obtained through the identified capability's website, Westerly's Comprehensive Community Plan, Westerly's 2018 Hazard Mitigation Plan, and/or Advisory Committee input.

<b>LOCAL</b> <i>(the capabilities have been listed in alphabetical order)</i>
<b>Ambulance Services</b>
The Westerly Ambulance Corps is a private, non-profit volunteer organization (8 full-time paid staff and 20 active volunteer members), located at 30 Chestnut Street including a fleet of five Type III ambulances and three four-wheel drive rescue vehicles. The Ambulance Corps provides basic life support (BLS) and advanced life support (ALS) emergency medical services to Westerly and portions of Stonington, Connecticut. Other services include routine medical transportation, a Rescue Squad (composed of 20 to 30 active members), 911 dispatching services, and first aid training courses.
<b>Boards &amp; Commissions</b>
A number of local boards and commissions support Town Departments to develop, implement, and update policies and plans to promote the safety of residents and minimize risk to the community.
<p><b>Conservation Commission</b></p> <p>The Conservation Commission consists of seven full members appointed by the Town Council for three-year terms; and one auxiliary member appointed for a two-year term. The Commission generally meets on the second Tuesday of the month at 7pm at the Westerly Town Hall. The duties of the Commission include gathering information, dispersing information, and making recommendations on the use and management of natural resources, such as soil, water, forests, wildlife and minerals. They support hazard mitigation by making information on natural resources available the Town Council, Zoning Board, Department of Public Works and the Planning Board in order to help locate industry, roads, housing, and other developments in such a way that complementary uses of the Town's natural resources will not be jeopardized.</p>
<p><b>Economic Development Commission (Coordination with Local Business Community and Economic Resiliency Planning)</b></p> <p>The Town Council established the Economic Development Commission (EDC) to support: activities that promote orderly growth and diversification of development (with respect to the natural characteristics of the land); activities that increases the quality and quantity of job opportunities and the overall economic well-being of the Town and its residents; local business activities by promoting the revitalization and development; and the implementation of the economic development goals and the intent of the Town's Comprehensive Plan. The EDC is a seven-member public body appointed by the Town Council for three-year terms, and supported by the Department of Development Services. The Commission meets the first Tuesday of each month (4:00pm) at the Town Hall.</p> <p>An action item in the 2020 Comprehensive Plan for Westerly is to quantify the value of all property and resulting tax revenue that would be impacted by increased flooding, sea level rise, and storm events. To this end, the EDC engaged with Northeastern University to conduct a targeted study of the Winnapaug Pond area to utilize as a model for expanding the study. <a href="#">Click here</a> to view a summary of this work</p>
<p><b>Harbor Commission (under consideration)</b></p> <p>The Draft Harbor Management Plan recommends the Town establish a Harbor Commission comprised of seven members appointed by the Town Council for two-year staggered terms. Should the Commission be established, duties may include reviewing activities in the harbor and developing/recommending additional policies, rules and regulations for the Harbor Management Plan subject to the Town Council approval and CRMC review as appropriate; assisting the harbormaster in the management of the harbor; acting as a Board of Appeals to hear complaints from individuals aggrieved by enforcement of the Harbor Management Plan; maintaining mooring and enforcing standards; and approving Inspection Contractors.</p>
<p><b>Planning Board</b></p> <p>The Planning Board consists of seven full members appointed by the Town Council for five-year terms; and one auxiliary member appointed for a two-year term. The Board generally meets on the third Tuesday of the month at 6pm at the Westerly Town Hall. The Planning Board acts in an advisory capacity to the Town Council in matters concerning the Comprehensive Community Plan, Zoning Ordinance and Town-owned properties,</p>

land use, and physical growth and development of the Town of Westerly in a manner consistent with State Law and Town Ordinances. The Planning Board is the sole authority of the Subdivision Regulations and is responsible for administering and enforcing them. As these factors impact hazard mitigation, it is important the Planning Board is familiar with the *HM&FMP* goals and actions. The Planning Board has the discretion to require applicants to submit a peer review fee to the Town to cover third-party engineering review of development/ subdivision proposals, including compliance with storm water regulations, erosion control, and standards related to development within the flood plain and/or within proximity to a wetland or coastal feature.

#### **Public Works Committee**

The Public Works Committee consists of six full members (4 from general public serving three-year terms and 2 council members serving concurrent with their Council term). This Committee serves as an advisory board to the Town Council on Public Works, Water & Sewer, and Engineering projects.

#### **Westerly Municipal Land Trust**

The mission of the Westerly Municipal Land Trust is to preserve and protect the Town's natural resources. The Land Trust oversees a stewardship program for properties under their authority and assists Town departments and commissions in the execution of policies related to land use and preservation and the implementation of the Comprehensive Community Plan. The Land Trust engages in public awareness for all open space properties in Westerly and may be a good partner to support hazard mitigation messaging. There are seven trustees appointed for five-year terms.

#### **Coordination with Area Colleges and Universities**

The Town of Westerly has and will continue to coordinate with area colleges and universities on hazard mitigation and other planning initiatives. Some of the partners that Westerly has worked with in the past include the **University of Rhode Island's Coastal Institute, Natural Resource Science, and Planning and Public Administration Departments** in Kingston, RI, Northeastern University D'Amore-McKim School of Business, in Boston, MA and University of Connecticut Technical Assistance for Brownfields Program (TAB) Municipal Assistance Program (MAP) in Storrs, CT.

#### **Coordination with Neighboring Municipalities**

The Town of Westerly has a positive relationship with neighboring municipalities and works to identify vulnerabilities from shared risks and coordinate applicable efficiencies. The Town will continue to coordinate with these communities on hazard mitigation planning, specifically transportation and flood vulnerabilities. Upon request, neighboring communities support one another with mutual aid. The communities bordering Westerly include: **Charlestown RI, Hopkinton RI, North Stonington CT, and Stonington CT.**

#### **Drills and Exercises**

The Town of Westerly has participated in a number of drills and exercises to better prepare for an emergency event. To ensure personnel are adept with equipment, policies, procedures, and maintaining necessary skills, the Emergency Management Director works with the Town Manager and the Department Heads to ensure that the employees are up to date on trainings such as the National Incident Management System (NIMS) Incident Command System (ICS) training opportunities. The Emergency Management Director also shares training opportunities offered by the State or other providers to encourage additional training throughout the year. The Emergency Management Director (as well as representatives from the local Fire Districts) attend trainings such as Code Red and MedPod, as well as at least one FEMA or RIEMA sponsored training annually, if available.

Over the past several years, the drills were conducted through real world events, responding to the COVID-19 pandemic. The Town held several clinics a month for approximately eight months and vaccinated over 10,000 people. This allowed the Town personnel to practice their ICS structure and implementing a MEDS-POD repetitively. The EMA Director also holds an annual meeting (generally in July or early August) for hurricane preparedness with Town Departments, the Fire Districts and the Ambulance Corps to ensure the community is prepared for a hurricane. The Town has had some turnover in Department Heads and is working towards ensuring all are trained to the appropriate standard in ICS.

#### **Emergency Shelter**

##### **Human Shelter**

Emergency shelters play an important role during hazard response and recovery. They provide temporary shelter, sanitary facilities, and food service during a local emergency. They can also serve as a focal point for distribution of food and clothing for people who choose not to use the shelter for temporary accommodation. Shelter use is not easily predicted because each emergency situation has different variables that impact use. Variables include the severity of the impending hazard, warning period, necessity to evacuate, and awareness of the shelter location and facilities available. Shelter use may be higher in the winter if homes are without heat. In 2017, RIEMA regionalized all of the emergency shelters in Rhode Island and Westerly has been told that in the event of an emergency to direct all Westerly residents to use the Westerly Senior Center as the community's designated regional emergency shelter. In terms of warming and cooling shelters, the Town will use the Westerly Public Library and the Westerly Senior Center.

- **Westerly Armory** (6 Dixon Street) Short-term occupancy (300), Long-term occupancy (150); and, if needed, may be used as a staging area for emergency volunteers and National Guard troops
- **Westerly Senior Center** (39 State Street) Short-term occupancy (350), Long-term occupancy (175)

In addition, the American Red Cross has opened five storm shelters across Rhode Island. The closest to Westerly is the South Kingstown High School (215 Columbia Street, Wakefield, RI). These shelters are opened to all who need a safe place during the storm. The emergency shelters may not be able to provide adequate supplies of food (especially for those with special dietary requirements), water, and bedding, so individuals coming to

shelters should bring prescription and emergency medication, personal hygiene supplies, foods for special dietary requirements, chargers for electronics, extra clothing, comfort items, bedding items, flashlights and batteries, important papers, and books and quiet games for entertainment.

**Animal Shelter**

The Westerly Animal Shelter, located at 33 Larry Hirsch Lane, is a municipally owned building that was financed by Stand Up For Animals, a local non-profit organization. It opened in 2009 as a space where animals could be housed and maintained until adopted. The Animal Shelter is run by the Animal Control Officer, a member of the Westerly Police Department, with assistance from an Assistant Director (civilian) and numerous volunteers. Stand Up For Animals continues to provide monetary assistance to operate the shelter.

As human disaster shelters cannot accept pets due to health and safety regulations and other considerations (with the exception of service animals that assist people with disabilities), it is important to have a local animal shelter that accepts domestic animals during a major weather event. It is recommended that pet owners create a pet kit containing identification and supplies for each pet in the event that a pet must be temporarily placed in an emergency animal shelter.

**Evacuation Zones and Routes**

In 2013, the United States Army Corps of Engineers (USACE) Hurricane Evacuation Study created an **Evacuation Route Map** to reflect the areas in Westerly that are recommended to be evacuated during potential worst-case Hurricane Surge Inundation. As discussed in **Section 4-4**, portions of the evacuation route may be compromised due to flooding. In Rhode Island, the decision to evacuate is made by local officials. For vulnerable evacuation roadways, the Town should consider potential alternate routes or improvements to the existing route to mitigate flood risks.

**Fire Protection Services**

The Town of Westerly is divided into seven incorporated Fire Districts (Bradford, Dunn’s Corners, Misquamicut, Shelter Harbor, Watch Hill, Weekapaug, and Westerly). Four of the districts have Fire Departments (Dunn’s Corners, Misquamicut, Watch Hill, and Westerly); Bradford and Shelter Harbor Districts contract with Dunn’s Corners Fire Department; and Weekapaug District contracts with Misquamicut Fire Department. Services provided by the Fire Departments are paid through fire district taxation and include fire prevention and extinguishment, protection and preservation of life and property endangered by fire and related emergencies, water rescue, and maintenance of fire district property such as beaches and facilities.

The departments also provide ongoing training programs that meet National Fire Protection Agency (NFPA) standards 1500 and 1501. The Fire Departments work closely with one another and provide support as requested in the form of Mutual Aid amongst themselves, as well as with all fire departments in Rhode Island under the State of Rhode Island Mutual Aid Agreement and fire departments in New London County, Connecticut utilizing the New London County Chiefs’ Association.

Fire Department	Station	Apparatuses
Dunn’s Corner	1 Langworthy Road	3 Engines, 1 Tower, 1 Tanker, 1 Brush, and 1 Squad
Misquamicut	65 Crandall Avenue	2 Engines, 1 Rescue Boat, 1 Truck (4x4), 1 ATV, and 1 Jet Ski
Watch Hill	222 Watch Hill Road	2 Engines, 1 Aerial Ladder 2 Rescue Boats, 1 EMS Response, 1 Car, and 1 ATV
Westerly	7 Union Street 180 Beach Street	4 Engines, 1 Aerial Ladder, 1 Portable Boat, 1 Special Hazards, Chief’s Vehicle, 2 Pickup Trucks

Sources: DCFD, MFD, WHFD, and WFD, 2023

**Map Information Services**

As a public service (free of charge), upon request the Engineering, Planning, and/or Building Departments will provide inquirers with information from the community’s Flood Insurance Rate Maps (D-FIRMs) and other sources to inform about the local flood hazard and flood-prone areas that require special protection because of their natural functions. Key information provided includes:

- Whether a property appears to be in or out of the Special Flood Hazard Area (SFHA) as shown on the current D-FIRM
- Additional flood insurance data for a site, such as the FIRM zone and the base flood elevation or depth, if shown on the FIRM
- Handouts on the flood insurance through NFIP
- Copies of completed FEMA Elevation Certificates for buildings built in the floodplain (elevation certificates can also be accessed on the Town’s website)

Community education and outreach on the hazards associated with flooding and sea level rise is an important goal of the *HM&FMP*. As such, this ongoing activity aligns with the goals of the *HM&FMP* and, if documented per FEMA requirements, may qualify for points under CRS Activity 320.

### Medical Facilities and Services

Westerly has a number of well-maintained and high-performing medical facilities and services, which play an important role in the quality of life for the community, and are of particular benefit should a natural hazard event create casualties.

- **Westerly Hospital:** The 60-bed community hospital, which dates back to 1925, is now part of Yale New Haven Health, and provides a full range of inpatient and outpatient services (emergency, medical, surgical, radiology, laboratory, and rehabilitative).
- **South County Health:** The 15,600 square foot center offers numerous services including an anti-coagulation clinic, behavioral health specialist, cardiology, dermatology, diabetes care, diagnostic imaging, laboratory services, nutrition services, oncology and hematology, orthopedics, physical therapy, podiatry, primary care and family medicine, an Urgent/Walk-in Care, wound care, and services provided by the Center for Women's Health.
- **Wood River Health Services:** This non-profit community health center is a satellite office (main facility in Hopkinton RI) which offers numerous services including family medicine, women's health, behavioral health, care management, and laboratory facilities.
- **Hope Recovery Center of Westerly:** As a member of the Westerly Prevention and Wellness Partnership, the Center offers numerous programs and outreach services to individuals in need of support for mental illness, addiction, and recovery from abuse, and is a recognized resource for the Westerly Police Department.

### Senior Citizen Services

The following two organizations are well-positioned to get hazard mitigation information to Westerly's senior population.

- **Westerly Senior Citizens Center:** The Center is a non-profit organization providing social and transportation services to the senior and elderly population in Westerly and nearby communities. Social services include support groups, nursing services and a monthly mini clinic, postal services, recreational/social activities, and assistance with finances, taxes, health insurance. Transportation services include meal pickups and medical appointments through RIPTA's Riders with Disabilities program, and additional transportation services to grocery stores, pharmacies, banks, shopping centers, libraries, etc.
- **Age Friendly Westerly:** This program is an affiliate of the Age-Friendly RI organization, a coalition of community and state agencies, healthcare and social service providers, advocacy and faith-based organizations, businesses, academic institutions, municipal leaders, and community members committed to healthy aging. Age Friendly Westerly provides resources to aging community members and their loved ones and raises awareness about the value of building a community that supports older adults.

### The Westerly Land Trust

The Westerly Land Trust's programs and activities are directed to the protection and enhancement of the environment, agriculture, and water resources. The Town has a strong relationship with the Land Trust and should continue to explore opportunities to collaborate on hazard awareness programs and mitigation projects.

### Town Administration and Departments

Town Departments, with support from local boards and commissions, and other stakeholders, work together to develop, implement, and update policies and plans to promote the safety of residents and minimize risk to the community. Local government employees and officials' participation in and familiarity with this *Hazard Mitigation & Flood Management Plan* will ensure that they are prepared to enact mitigation and recovery efforts safely and efficiently. Town staff also participate in associations and organizations that support natural hazard risk reduction capabilities. Public facilities and services provided by the Town are crucial resources for preparing for natural hazard events, as well as responding to and mitigating such events. The Town has enacted and enforces a number of regulatory restrictions designed to reduce the potential impacts of flooding to property by limiting development in and around wetlands and floodplains. An overview of key staff engagement in hazard mitigation is provided below in alphabetized order. **The Town has the ability, and continues to expand on and improve its capabilities, to effectively address hazard mitigation and floodplain management.**

#### Building

The Town's Building Official implements and enforces the State Building Code ensuring new structures or those substantially renovated are compliant. In addition, Westerly has implemented several zoning ordinances which place even greater restrictions on certain types and locations of development. In order to ensure that no violations exist, routine, daily, on-site inspections are made while work is in progress. The Building Official is educated on the current NFIP policies and ordinances. The current and historical FIRMs, flood insurance studies, and Letters of Map Amendment are maintained on the Town website and in the Building Office. A FIRM is a map developed and issued by FEMA for floodplain management and insurance purposes. The Building Official also retains copies of completed FEMA Elevation Certificates for buildings constructed in the floodplain. Elevation Certificates are used to obtain the elevation of a building to determine whether it is within the floodplain and, if so, by how much. The cost of flood insurance for a property is related to the information on the Elevation Certificate. If an Elevation Certificate has been prepared for your property, you may be able to obtain a copy from the Building Department. Elevation certificates from 2013 forward are available on the Town's website (**Elevation Certificates**). They also have some older elevation certificates on file in the office. If an elevation certificate is not available and a resident requires one, they can hire a licensed land surveyor to prepare it. Additionally the Building Official (The Department of Development Services) incorporates the Association of State Floodplain Managers (ASFPM) **No Adverse Impact Floodplain Management (NAI)** into local floodplain management programs and municipal plans. For the convenience of both property owners and contractors, the Town of Westerly employs an **online permit system**.

### **Emergency Management Coordinator**

The Westerly Emergency Management (EM) Coordinator develops, organizes, directs, and coordinates the Town's emergency management program with the goal of saving lives and protecting property by maintaining emergency operational capabilities that mitigate, prepare for, respond to, and recover from any emergency or disaster. The EMA provides a series of tools and opportunities for citizens to be informed and educated, including an online training course titled *Westerly Hazard Mitigation Education*, which aims to improve the preparedness of course-takers for hurricanes, winter storms, and flooding.

The **Community Emergency Response Team (CERT) Program** is also supported by the EMA. The mission of the CERT Program is to educate Westerly residents about disaster preparedness for natural hazards and to provide training for basic disaster response skills.

### **Engineering**

The Engineering Department provides engineering advice and support to the Town Manager's Office, other municipal departments, boards, and the Town Council. The Department provides in-house engineering or oversees consultants for water, wastewater, roads, and stormwater drainage projects. The Town Engineer is educated on NFIP policies and ordinances, including floodplain management, and functions as the Town's CRS Coordinator. In the event of a natural disaster, Westerly must coordinate interstate response and recovery efforts with the bordering Connecticut towns of Stonington and North Stonington. Of particular concern are bridges in the SFHA that span the Pawcatuck River connecting Westerly with these two towns. The Engineering Department should be engaged in the effort to maintain or redesign the transportation network to better serve the Town and region in the event of a natural disaster requiring evacuation.

### **Finance**

In addition to other responsibilities, the Finance Department is critical in managing the financial aspects of hazard mitigation projects and associated grant funding.

### **Information Technology**

The Town of Westerly Information Technology Department provides technology solutions and services utilized by general government operations. The department supports hazard mitigation through website management and management of the geographic information system (GIS).

### **Planning**

The Planning Department oversees land use planning, reviews development projects and subdivisions, facilitates community development activities, administers federal and state grant programs, and oversees or maintains a number of the strategic planning efforts that are instrumental to decision making and mitigation planning. It provides staff support to a number of different local boards and commissions including the Planning Board. The Town Planner and Principal Planner are educated on NFIP policies and ordinances, and will play a lead role in the maintenance and implementation of projects and initiatives that support the *HM&FMP*.

### **Police Department**

The Police Department has 64 staff members (excluding constables and community service officers), 51 of whom are sworn officers. The 27,700-square foot headquarters, located at 60 Airport Road, centralizes all police operations including Patrol, Community Policing, School Resource, Dispatch, Investigations, Detention of Prisoners, Marine Patrol, Harbor Management, Animal Control, Maintenance of Fleet, and Administration. Over the past several years, the dispatch center was upgraded with new consoles, radios, computers, wall monitors, and access controls and now serves as a state-of-the-art facility for public safety. In the event of a disaster, the facility serves as a regional emergency operations center.

**Harbormaster:** The Westerly Harbormaster is required to be an employee of the Town and is currently the Chief of Police. The Harbormaster, in conjunction with the appropriate State and Federal agencies, is responsible for coordinating all harbor activities and enforcing the regulations in order to ensure the safety of navigation and the security of the harbor. Specific duties include, but are not necessarily limited to: administering designated mooring areas; issuing permits, keeping records, and overseeing a waiting list for all moorings; managing Assistant Harbormasters as appointed by the Town Council; and enforcing any ordinance or provision of the Harbor Management Plan, the Harbor Ordinance, or any state boating laws as applicable.

### **Public Works**

The Department of Public Works (DPW) general responsibilities include maintenance of municipal buildings, grounds, and parks; maintenance of local roads (including snow plowing, roadway treatments, and storm cleanup), sidewalks, and streetlights; maintenance of stormwater drainage system; tree trimming/tree maintenance (parks and Town-owned public rights-of-way); vehicle equipment maintenance; and the solid waste program.

In terms of hazard mitigations, the DPW is critical in the implementation and maintenance of projects that support the *HM&FMP*. The Department works to mitigate flood issues throughout the Town and engages in clean-up measures associated with hazard events. With respect to the stormwater drainage system, the Town of Westerly is a Municipal Separate Storm Sewer Systems (MS4) regulated community. MS4 is part of the Rhode Island Pollutant Discharge Elimination System (RIPDES) Program. A key goal of the program is to reduce the contamination of stormwater runoff and prohibit illicit discharges. MS4 communities are required to submit an Annual Report documenting progress made towards achieving the requirements of the program, as well as reporting ongoing maintenance of their stormwater system. Successful hazard mitigation is an ongoing

process with many actions requiring regular maintenance and repair. The Town aggressively engages in maintenance and repair measures which help to ensure the safety of residents and mitigate impacts from natural hazards.

### **Town Council**

The Town of Westerly, established in 1669, operates under a charter form of government, which provides for a council-manager structure. This structure combines the strong political leadership of elected officials in the form of a seven-member Town Council, with the strong professional managerial experience of an appointed Town Manager. Currently the Town Council has two-year terms with two term limits. However in the November 2022 regular elections, a Town referendum passed modifying the Town Council term limits. Starting with the November 2024 elections, the four candidates with the most votes will serve 4-year terms, and the following three 3 vote getters will serve two-year terms. At the regular biennial elections, beginning in 2026, Council members will be elected for staggering four-year terms. Each Council sets their own meeting schedule. The current Council intends to meet regularly twice a month (first & third Wednesday) with additional meetings as necessary. The Town Council is responsible for enacting local legislation; making decisions related to the Town's property, affairs, and government; setting the budget for both the municipal side and the school side; and appointing a Town Manager who executes the laws and oversees the administration of the Town government.

### **Town Manager**

The Town Manager is appointed by the Town Council as the Chief Administrative Officer responsible for carrying out the policies of the Town Council, appointing all other employees (except for School Department personnel), and overseeing the day-to-day operation of Town Departments and services. As this Plan will be adopted by the Town Council, the Town Manager will provide the leadership to ensure the *HM&FMP* actions are implemented across Town Departments. Also, in terms of drought management, the Town Manager is responsible for coordinating with the RI Water Resource Board in periods of drought or extended dry conditions that require an emergency response to reduce water usage.

### **Utilities**

The Utilities Division oversees the infrastructure (such as main lines and laterals up to the property line and/or curb valve/cleanout) for the Sanitary Sewer System and the Drinking Water System. The Town's consultant, Jacobs, is responsible for the pumps and Sanitary Sewer Treatment Plant maintenance. Both of these systems can be compromised from the impacts of natural hazards, most notably flooding. The Utilities Division strives to reduce illegal connections of private sump pumps and floor drains that exacerbate heavy wastewater flows in excess of the design of the sewer system which can cause manhole overflows and sewer backups into residences. Division has also worked with the Town's consultant to take proactive measures to floodproof the Wastewater Treatment Facility and pump stations located in the SFHA.

### **Zoning**

The Town development review process works to ensure that residential, commercial, and industrial developments have minimal impact on surrounding land uses and the environment. The Zoning Official's primary responsibility is the review applications for compliance with the Town's Zoning Ordinance.

### **Town Communication (Website, Twitter, and Facebook)**

The Town's **website** is regularly updated to keep content current. Updates are handled through the IT Department in conjunction with the Town Departments. To better prepare community members and reinforce individual pro-active hazard mitigation measures, the Town continues to improve its outreach and education programming efforts.

A number of Town webpages, including the following have information related to hazard mitigation:

- Coastal Barrier Resources System (CBRS); Coastal Erosion; CodeRed Emergency Notification Signup; COVID-19 Resources; Elevation Certificates; Emergency Management; FEMA Flood Insurance Rate Maps (FIRMs) & Flood Insurance Study (FIS); FEMA Technical Bulletins & Publications; Flood Zone Management & Protection; HM&FMP Project; Hurricane Evacuation Information; Letters of Map Amendments (LOMAs); Local Hydrography; Pawcatuck Watershed Management Plan; Planning, Fire District Information; V-Zone and Coastal A Zone Design Certificate

Westerly also uses **Facebook** and has approximately 5.6K followers as of February 2023) as a means of conveying Town information to its citizens.

Most telecommunications infrastructure in Westerly is overhead and physical telephone lines are owned by Verizon Communications, Inc. This can be problematic if a hazard event compromises the above ground infrastructure. The Town is interested in implementing a Municipal Broadband Infrastructure Upgrade and Expansion project, which would develop a fiber optic infrastructure (transmitting information as light impulses through optical fibers) enabling the ability to receive fiber optic connection across the Town. Development of 5G (Fifth Generation Wireless) networks in the Town is also a consideration for the future. These improvements would aid in getting emergency information to the public.

The Town's website may qualify for points under CRS Activities 330 and 350.

### **Warning and Notification Systems**

Westerly's Emergency Management Operation Center is located in the Westerly Police Department at 60 Airport Road, Westerly, RI. The Town has an Emergency Management Director and oversees coordination and integration of all activities necessary to build, sustain, and improve the capability to mitigate against, prepare for, respond to, and recover from threatened or actual natural disasters, acts of terrorism, or other man-made disasters.

The Town of Westerly is a **StormReady** certified community which means it has complied with a set of standards including having a system that continually monitors local weather conditions and has mechanisms to alert the public to severe weather warnings. The Town monitors NOAA Weather Radio All Hazards (NWR), which is a network of radio stations broadcasting continuous weather information directly from a nearby National Weather Station (NWS) office.

The Town uses the **CodeRED Emergency Notification System** to alert residents and businesses in emergency situations through any or all of the following: telephone, cell phone, text message, and emails. The alert system is for an array of emergency situations including Amber Alerts, notifications of hazardous incidents, boil water advisories, evacuation notices, parking bans, and severe weather alerts. The Town encourages community members to sign up for this free program and recently upgraded the system to include a text to enroll option. CodeRED is promoted on the Town Website in the *Resident* section. The Town also promotes CodeRED at various community events. As of January 2023, the Town has 26,588 registered numbers signed up to receive CodeRED notifications. You do not have to be a Westerly resident to sign up for Westerly CodeRed alerts. This allows family members not residing in Westerly, or residents of other local jurisdictions that do not use CodeRed, to be serviced by this automated process.

If the Emergency Management Director decides it would be advantageous to alert people in vulnerable areas via a siren alarm, the Town's emergency vehicles are equipped with sirens and PA systems.

The Town's warning and notification systems may support CRS Activity 610.

### **Westerly Education Center**

The Westerly Education Center was founded in 2017, and is managed by the State Of Rhode Island. The Center is a public-private collaboration designed to bring together higher education, business, industry, and community partners to expand postsecondary attainment in degrees, certifications and industry-recognized credentials. There may be opportunities for the Town to work with the Center to include hazard mitigation within courses or as special seminars.

### **Westerly Library**

The Westerly Library, owned and operated by the Memorial and Library Association of Westerly, is located on an approximately 14.7-acre property shared with Wilcox Park in the heart of Downtown Westerly. The Library has undergone a number of renovations, continually improving the space and experience for users. The library is well-equipped to manage and publicize programs on special topics, and the venue is often used for meetings, workshops, presentations, and programs related to hazard mitigation and is also used as both a warming a cooling center.

The library houses books and publications required to obtain credit for a community flood protection library under CRS Activity 350.

### **Westerly Public Schools**

Westerly's public school system provides education from pre-kindergarten through high school graduation at five school locations: Dunn's Corners School, Springbrook Elementary School, State Street School, Westerly Middle School, and Westerly High School.

The School District is an important partner to the municipal government. With respect to hazard mitigation, the Town works to mitigate natural hazard risks at the school facilities and properties. There may be opportunities to collaborate on hazard mitigation awareness in courses, clubs, or special programs at the schools. The schools can also support Town programs by disseminating the information through their website, social media, and school district network.

## **REGIONAL/STATE** *(the capabilities have been listed in alphabetical order)*

### **New England States Emergency Consortium (NESEC)**

Established in 1991, the Northeast States Emergency Consortium (NESEC) is a not for profit all-hazards emergency management organization, located in Wakefield, Massachusetts(26 Princess Street, Suite 102 - (781) 224-9876). NESEC develops, promotes, and coordinates comprehensive "all-hazards" emergency management and resiliency activities throughout the Northeast. This includes all phases of emergency management: preparedness, response, recovery, and mitigation. NESEC works in partnership with federal, state and local governments, non-profits and private organizations to reduce losses of life and property by becoming more resilient before the next disaster strikes the Northeast. NESEC conducts public awareness and education programs on natural disaster and emergency management activities throughout New England. Brochures and other resources are available on topics including hurricane safety and flood preparedness.

### **Rhode Island Red Cross**

The **American Red Cross in Rhode Island** offers a variety of programs to help adults and children better prepare for emergencies. Their website houses several free online preparedness trainings for both adults and children.

As indicated under the **Emergency Shelter** in the LOCAL section, the American Red Cross has opened five storm shelters across Rhode Island. The closest to Westerly is the South Kingstown High School (215 Columbia Street, Wakefield, RI). These shelters are opened to all who need a safe place during the storm.

<p><b>Save The Bay</b></p>
<p>Save The Bay is a nonprofit organization which works to protect and restore the ecological health of the Narragansett Bay region through advocacy, education, and habitat restoration and adaptation projects. Save The Bay has been a welcomed partner with the Town of Westerly on numerous projects. As applicable, when implementing actions from this <i>Plan</i>, coordination with Save The Bay should be considered. Their knowledgeable staff have proven an asset to many projects in Westerly and across the State. Save The Bay's bi-annual Tides Magazine is a good resource to maintain awareness of Save The Bay action updates including education, restoration, and advocacy.</p>
<p><b>Southern Rhode Island Conservation District (SRICD)</b></p>
<p>In RI, Conservation Districts were established in 1944 as quasi-public organizations with a wide breadth of opportunity to focus efforts on the environmental and conservation concerns within our communities. There are three Districts in Rhode Island:</p> <ul style="list-style-type: none"> <li>• Southern RI Conservation District (<a href="#">SRICD</a>), serving Washington and Kent Counties</li> <li>• Northern RI Conservation District (<a href="#">NRICD</a>), serving Providence County</li> <li>• Eastern RI Conservation District (<a href="#">ERICD</a>), serving Newport and Bristol Counties</li> </ul> <p>The mission of the SRICD is to promote and achieve a healthy environment and sustainable use of natural resources for the people of Kent and Washington Counties and the State of Rhode Island, now and for the future, by coordinating partners to provide technical, educational and financial resources. The SRICD is a good partner for outreach and education programs as well as a resource for stormwater management best practices. Their services include:</p> <ul style="list-style-type: none"> <li>• Conservation Planning and Technical Services</li> <li>• Mapping Services</li> <li>• Municipal Resilience</li> <li>• Outreach and Education</li> <li>• Parcel Mapping Services</li> <li>• Signage for Public Access on Public Lands</li> <li>• Site Plan Review</li> </ul> <p>Conservation Districts have a unique relationship with USDA Natural Resources Conservation Service (NRCS). SRICD works directly with USDA NRCS to accomplish and improve the process for NRCS Outreach and Education, Conservation Technical Assistance, Wetland Restoration, enhancing Fish and Wildlife Habitat, Grassland and Forestland Ecosystems, improving Soil Quality, Water Management, Water Quality, Energy Conservation, and Forest/Farmland Conservation.</p> <p>As applicable, when implementing actions from this <i>Plan</i>, coordination with the SRICD should be considered.</p>
<p><b>StormSmart Coasts Rhode Island</b></p>
<p>A resilience-related web resource that provides tools for collaboration and is dedicated to helping decision makers in coastal communities address the challenges of storms, flooding, sea level rise, and climate change.</p>
<p><b>The Nature Conservancy (TNC)</b></p>
<p>The Nature Conservancy began when leading scientists, committed citizens and dedicated leaders came together with a shared vision to protect and care for nature. Today, TNC is tackling the dual threats of accelerated climate change and unprecedented biodiversity loss across more than 70 countries and territories. TNC maximizes their impact to affect change by bringing together real-world solutions, policy expertise, sustainable financing, and collaborative partnerships. As applicable, when implementing actions from this <i>Plan</i>, coordination with The Nature Conservancy should be considered.</p>
<p><b>University of New Hampshire Stormwater Center (UNHSC)</b></p>
<p>UNHSC is dedicated to the protection of water resources through effective stormwater management. Center researchers evaluate and enhance the ability of stormwater treatment systems to treat the pollution in stormwater runoff and reduce the flooding that it can cause. When designing stormwater BMPs, the Town should consider reviewing the Center's research/resources and/or partnering with the Center, as appropriate.</p>
<p><b>University of Rhode Island</b></p>
<p><b>Coastal Institute:</b> The URI Coastal Institute was founded to advance knowledge, encourage interdisciplinary partnerships, and develop solutions to environmental problems in Rhode Island's coastal ecosystems. The Institute works in partnership with local, state, federal, and international agencies.</p> <p>One of the Coastal Institute's Climate Response Demonstration Sites is in Westerly (Natural Area - Napatree Point in Watch Hill). At Napatree Point, research focuses on monitoring ecosystem changes in response to coastal storms and on tracing natural recovery over time. CI support has furthered invasive plant removal, Rhody Natives plantings, lagoon research, and elimination of cross-dune social trails. Collaborators include the Watch Hill Conservancy and the Watch Hill Fire District.</p>

**Natural Resources Science Department:** The research program of the department addresses areas in: aquatic ecology, avian ecology, biodegradation and bioremediation, forest ecosystem ecology, landscape ecology, spatial data analysis, pedology, soil ecology, terrestrial remote sensing, watershed science, wetland science and management, and wildlife and conservation biology. The National Park Service's Coastal Field Station and Inventory and Monitoring Program, both located at the University of Rhode Island, afford research opportunities for faculty and students.

## FEDERAL *(the capabilities have been listed in alphabetical order)*

### National Flood Insurance

The **National Flood Insurance Act of 1968** established the **National Flood Insurance Program (NFIP)** with the intent of reducing the need for post-disaster Federal aid by allowing property owners in participating communities to purchase federally backed flood insurance. Nationwide, over 21,000 communities participate in the NFIP by adopting and enforcing floodplain management ordinances to reduce future flood damage. The Town of Westerly meets the minimum requirements and participates in the National Flood Insurance Program. The Town also participates in NFIP's **Community Rating System (CRS) Program**, which is designed to encourage communities to engage in various community focused activities that promote a comprehensive approach to floodplain management beyond the minimum NFIP requirements.

In addition to providing flood insurance and reducing flood damages through floodplain management regulations, the NFIP identifies and maps the Nation's floodplains. Mapping flood hazards creates broad-based awareness of the flood hazards and provides the data needed for floodplain management programs and to actuarially rate new construction for flood insurance. Additional information on the National Flood Insurance Program can be found in **Section 4-4**.

The **Biggert-Waters Flood Insurance Reform Act of 2012** made significant changes to the NFIP. This act requires the NFIP to raise subsidized insurance rates to actuarial rates in an effort to make the program more financially stable. Rate increases began on January 1, 2013, for owners of subsidized policies on non-primary/secondary residences in a Special Flood Hazard Area (SFHA) with 25% increases annually until rates reflect true risk. On October 1, 2013, the same increases were applied to owners of subsidized policies on property that had experienced severe or repeated flooding and on business/non-residential properties in a Special Flood Hazard Area.

### National Warning and Alert Systems

The **National Warning System (NAWAS)** is used to convey warnings to United States-based Federal, state and local governments, as well as the military and civilian population. NAWAS has proven invaluable to local emergency managers responding to or coping with natural disasters.

The **Emergency Alert System (EAS)**, is a national public warning system that requires TV and radio broadcasters, cable TV and wireless cable systems, satellite digital audio radio service providers, direct broadcast satellite service providers and wireline video service providers to offer to the President the communications capability to address the American public during a national emergency. The system also may be used by state and local authorities to deliver important emergency information such as AMBER (missing children) alerts and emergency weather information targeted to a specific area. A state emergency manager can use the EAS to broadcast a warning from one or more major radio stations in a particular state. EAS equipment in other radio and television stations, as well as in cable television systems in that state, can automatically monitor and rebroadcast the warning.

### Nationwide Programmatic Environmental Documents

In order to receive federal funding, projects must comply with the **National Environmental Policy Act (NEPA) of 1969**, which requires Federal agencies to consider the effects of proposed projects on the natural and human environment. In order to eliminate repetitive discussions, nationwide programmatic environmental documents have been developed. If a given project meets the scope, impacts, and mitigation covered in the related programmatic environmental document, then no further NEPA documentation will be required. The documents differ somewhat per FEMA Region. Region 1 documents are accessible through the following link: **Region 1 - Environmental Documents and Public Notices**

### Pandemic and All-Hazards Preparedness Act

The **Pandemic and All-Hazard Preparedness Act of 2006** had broad implications for the Department of Health and Human Service's preparedness and response activities, including providing new authorities for programs such as development and acquisition of medical countermeasures and the establishment of a quadrennial National Health Security Strategy. The act was reauthorized in March 2013.

### Voluntary Organizations Active in Disasters (VOAD)

In 1970, seven national disaster response organizations convened for the first time to find a way to better coordinate responses and more effectively serve disaster survivors and their communities. As an outcome, *National VOAD* was formed as a forum for sharing knowledge and coordinating resources, money, materials and manpower throughout the disaster cycle: preparation, response, and recovery.

# APPENDIX 5-3

## Financial Capabilities

---

# Appendix 5-3

## Financial Capabilities

The following Table provides an overview of the critical financial capabilities that play a role in the Town of Westerly's natural hazards mitigation effort. The information provided in the Table was obtained through the identified capability's website, Westerly's Comprehensive Community Plan, Westerly's 2018 Hazard Mitigation Plan, and/or Advisory Committee input. Following the Table is a list of the hazard mitigation related grants awarded to the Town over the past five years.

<b>LOCAL</b> <i>(the capabilities have been listed in alphabetical order)</i>
<b>Community Organizations</b>
There are a number of local organizations that may be able to provide support and assistance to the community in the event of a natural disaster. Some of these include Age Friendly Westerly, area churches, Chamber of Commerce, Johnnycake Center, WARM Center, Westerly Education Center, Westerly Land Trust, and YMCA.
<b>Flood Relief Funds</b>
After a disaster, local businesses, residents, and out-of-town groups often donate money to local relief funds. These funds may be managed by the local government, churches, or other groups. If a disaster declaration has been made, it may be prudent to hold the local funds until applicants exhaust all sources of public disaster assistance. Doing so allows the funds to be used for mitigation and other assistance that cannot be funded elsewhere.
<b>Town Budget - Capital Improvement Program (CIP)</b>
<p>Maintaining a resilient local economy is important to enable providing high quality municipal services, including protecting against natural hazard risks. According to the Town's Certified Budget, for the fiscal year FY2021-22, the municipal operating budget was \$37,934,672 and the School District budget was \$57,137,967. The Town Council is responsible for setting the budget for both the municipal side and the school side. Governmental activities cover most of the Town's basic services such as police, public works, school, and general administration. Property taxes finance most of these activities, supplemented by State funding. In Westerly, fire protection services are provided by the local Fire Districts and paid through fire district taxation.</p> <p>As part of the budget process, each year the Town adopts a five-year Capital Improvement Program (CIP) identifying projects that should be undertaken during the upcoming five years. The Town has continually funded its capital requirements aggressively and, to limit borrowing requests, maintains a pay as you go funding for most of its capital needs. There is an important connection between the CIP and the effective implementation of the HM&amp;FMP. The Westerly Planning Board has a legal responsibility to review the Town's capital improvement requests annually and meet with the Town Manager and Finance Director to review Department plans for the budgeting of both capital improvements and maintenance expenditures as outlined in each year's CIP. Risk assessment and mitigation must become a regular part of this discussion. Prioritization of action items needed to build community resilience and development of a variety of finance options to address those needs are critical steps in protecting the Town's residents and economic vitality.</p>
<b>REGIONAL/STATE</b> <i>(the capabilities have been listed in alphabetical order)</i>
<b>Narragansett Bay Estuary Program (NBEP)</b>
The Narragansett Bay Estuary Program, through its host, <b>Roger Williams University</b> , is providing oversight for the <b>Green Infrastructure Project Planning Grant Program</b> . Grant funding will support planning activities that advance future implementation of green infrastructure projects in the Narragansett Bay, Little Narragansett Bay, Coastal Ponds, and their watersheds in Rhode Island, Massachusetts, and Connecticut.
<b>Rhode Island Department of Environmental Management (RIDEM)</b>
<p><b>319 Non-Point Source Grant</b></p> <p>The RIDEM Office of Water Resources administers funding from the US Environmental Protection Agency (EPA) under Section 319 of the Federal Clean Water Act for grants to assist in the implementation of projects that protect and restore water quality from nonpoint sources of pollution and to improve or restore aquatic habitats.</p> <p><b>Clean Water &amp; Drinking Water</b></p> <p>The Clean &amp; Drinking Water State Revolving Fund was set up to help ensure the State's drinking and recreational waters are clean and safe.</p>

**Climate Resilient Fund Grant**

To support the implementation of climate resilience projects – specifically restoring and improving the climate resilience of vulnerable coastal habitats, as well as river and stream floodplains and related habitat.

**DEM’s Green Space Grant Programs** fund land conservation, recreational land acquisition and development, and recreational trail development and improvements. Each of the following programs operates under a set of rules and regulations with Committee and Department oversight:

- **Local Open Space Grants** - This grant program provides up to 50% matching funds to municipalities, land trusts and non-profit conservation land organizations to preserve valuable open space throughout the state.
- **Outdoor Recreation Grants** - This grant program provides matching funds for the acquisition, development, and renovation of outdoor recreational lands and facilities.
- **Recreational Trail Grants** - This grant program provides financial assistance to municipalities and non-profit organizations for the development and maintenance of recreational trails and trail-related projects.

**Natural & Working Lands Program**

This program protects farmland and forested lands and the associated economic and ecosystem benefits.

**Rhode Island Department of Health (RIDOH)**

RIDOH offers various grants to communities. To assist communities with Covid-19, RIDOH was administering grants for community vaccination medical pods. In addition, they provide grant opportunities to support and expand upon Environmental Health Risk Assessment Program’s (EHRAP’s) efforts to engage with and educate communities on the impact environmental hazards have on public health.

**Rhode Island Department of Transportation (RIDOT)**

RIDOT has pledged more than \$100 million over a 10-year period to ensure compliance with the Clean Water Act and a number of remedial measures under a consent decree with the Environmental Protection Agency. This initiative will reduce pollution from stormwater flowing into Narragansett Bay and hundreds of lakes, ponds and rivers throughout Rhode Island.

**Rhode Island Emergency Management Agency (RIEMA)**

RIEMA administers the **Emergency Management Preparedness Grant (EMPG) Program** which assists local units of government in building, sustaining, and delivering a whole community emergency management program. The funding objective is to sustain current capability levels and fills identified gaps in Planning, Organization, Equipment, Training, and Exercise activities in order to prevent, protect against, mitigate, respond to, and recover from acts of terrorism or catastrophic events.

**Rhode Island Foundation**

The Foundation was organized at the Rhode Island Hospital Trust Co. in June 1916 by a small group of prominent Rhode Islanders. It was modeled after the first community foundation established in Cleveland two years earlier. The founders advocated that the charitable problems of each generation can and should be solved by the best minds of each generation. The Foundation administers a number of grant programs, each having a different purpose, application requirement, and deadline. The **Community Grant Program** which supports community-building activities in cities and towns throughout Rhode Island, may be applicable for certain hazard mitigation or resilience activities.

**Rhode Island Infrastructure Bank (RIIB) – MRP Action Grant**

MRP Action Grants are competitively available to Resilient Rhody municipalities for eligible projects in the year they participate, and as directed by RIIB may be available in subsequent years. Eligible projects are required to be identified through the Community Resilience Building process, improve climate resilience, and a capital investment resulting in construction. MRP Action Grants are not available for research-related activities such as studies and strategic plans. Grant eligibility must fall under Rhode Island Infrastructure Bank’s broad portfolio of programs and can include but not limited to, dam repair and removal, road elevation, hardening or elevation of pump stations, berms and levees, culvert repair, green stormwater infrastructure, back-up power and energy efficiency, watershed restoration, urban tree planting, and coastal erosion control. Municipalities will be required to match grants with a 25% local project cost share.

**Southern New England Program (SNEP)**

SNEP Watershed Grants provide funding assistance to municipalities and other local organizations in Rhode Island and Massachusetts to accomplish the goals of EPA’s SNEP program: a resilient ecosystem of safe and healthy waters, thriving watersheds and natural lands, and sustainable communities. The SNEP Network is managed by the **New England Environmental Finance Center (EFC)**, one of 10 university-based Environmental Finance Centers in the nation and serves the six New England states of EPA Region 1. Its mission is to build local capacity to pay for the growing costs of protecting the environment and to be better prepared to manage the chronic and acute problems of environmental protection and finance. The New England EFC is based at the University of Southern Maine.

**Volunteer Organizations**

Organizations, such as the American Red Cross, Salvation Army, Habitat for Humanity, Interfaith, Mennonite Disaster Service, Lions Club, Elks Club, and VFW are often available to help after disasters. These organizations may be able to assist with food, shelter, clothing, and other necessities. Habitat for Humanity and the Mennonite Disaster Service provide skilled labor to help rebuild damaged buildings incorporating mitigation or flood proofing concepts. The offices of individual organizations can be contacted directly, or the FEMA Regional Office may be able to assist.

# FEDERAL *(the capabilities have been listed in alphabetical order)*

## American Rescue Plan Act (ARPA)

The **American Rescue Plan Act of 2021**, also called the **COVID-19 Stimulus Package** or **American Rescue Plan**, is a \$1.9 trillion economic stimulus bill passed by the 117th United States Congress and signed into law by President Joe Biden on March 11, 2021, to speed up the country's recovery from the economic and health effects of the COVID-19 pandemic and the ongoing recession. First proposed on January 14, 2021, the package builds upon many of the measures in the CARES Act from March 2020 and in the Consolidated Appropriations Act, 2021, from December.

## Department of Commerce - US Economic Development Administration (EDA)

The EDA's primary mission is to promote innovation and competitiveness, preparing American regions for growth and success in the worldwide economy. The EDA administers various grants and funding assistance. Key stimulus programs over the past several years were the 2021 American Rescue Plan and the 2022 CARES Act, both prompted by the economic downturn caused by the Covid-19 pandemic.

## Department of Homeland Security Grant Program (HSGP)

**State Homeland Security Program (SHSP)** - The SHSP is the core assistance program in this suite - it provides funds to build capabilities at the state and local levels and to implement the goals and objectives included in state homeland security strategies and initiatives in their State Preparedness Reports.

## Federal Emergency Management Agency (FEMA)

FEMA administers a number of grant programs related to hazard mitigation and resilience including:

- **Hazard Mitigation Grant Program (HMGP)**  
Assists in implementing long-term hazard mitigation planning and projects following a Presidential major disaster declaration.
- **Flood Mitigation Assistance (FMA) Program**  
Provides funds for planning and projects to reduce or eliminate risk of flood damage to buildings that are insured annually under the National Flood Insurance Program.
- **Building Resilient Infrastructure & Communities (BRIC)**  
Support for states, local communities, tribes and territories as they undertake hazard mitigation projects, reducing the risks they face from disasters and natural hazards.
- **Pre-Disaster Mitigation (PDM) Program**  
Provides funds annually for hazard mitigation planning and projects.

## National Oceanic and Atmospheric Administration (NOAA)

Working at national, regional, and local levels, NOAA funded projects educate and inspire people to use Earth systems science to improve ecosystem stewardship and increase resilience to environmental hazards. NOAA has various grant programs including **Climate Program Grants**, as well as grant collaborations with other agencies or groups such as the National Fish and Wildlife Foundation (NFWF).

## US Army Corps of Engineers Programs (USACOE)

USACOE administers a number of grant and assistance programs including:

- Planning Assistance to States (PAS) Program
- Flood Plain Management Services Program (FPMS)
- Continuing Authorities Program (CAP)
- Inspection of Completed Works (ICW) Program
- Rehabilitation and Inspection Program (RIP)
- Beach Restoration and Shoreline Protection Program
- General Investigation (GI)

## US Department of Agriculture Natural Resources Conservation Service (USDA)

The USDA NRCS has several financial assistance programs including:

- **Agricultural Management Assistance (AMA)** - which helps agricultural producers use conservation to manage risk and solve natural resource issues through natural resources conservation.
- **Conservation Stewardship Program (CSP)** - which helps agricultural producers maintain and improve their existing conservation systems and adopt additional conservation activities to address priority resources concerns.
- **Environmental Quality Incentives Program (EQIP)** - which provides financial and technical assistance to agricultural producers to address natural resource concerns and deliver environmental benefits such as improved water and air quality, conserved ground and surface water, increased soil health and reduced soil erosion and sedimentation, improved or created wildlife habitat, and mitigation against increasing weather volatility.

**US Department of Housing and Urban Development****HUD CDBG Disaster Recovery Assistance (CDBG-DR):**

This program makes funding available to prevent further damage to an affected area after a disaster. The focus is on assisting communities in low-income areas. The goals of the program align with those in the SHMP, especially in regard to those most at risk. Although this program is focused on the recovery process, the leading mitigation technique for this funding program is Plans and Regulations through code enforcement and slum/blight prevention after a disaster occurs. These grants may be used for infrastructure improvement, public services, or development and planning. 70% of the project must benefit low-and moderate-income persons. CDBG-DR money can be used as matching funds for the FEMA HMA grant programs.

**HUD Block Grant Program (CDBG):**

U.S. Housing and Urban Development Community Development Block Grant Program - a flexible program that provides communities with resources to address a wide range of unique community development needs, particularly the Disaster Recovery Assistance Program which provides grants to help cities, counties, and states recover from residentially-declared disasters, especially in low-income areas, subject to availability of supplemental appropriations.

**HUD Region 1 Providence Field Office**

380 Westminster Street, Suite 547, Providence, RI 02903  
(401) 277-8300

**US Economic Development Administration**

U.S. Economic Development Administration - empowers distressed communities to revitalize, expand, and upgrade their physical infrastructure to attract new industry, encourage business expansion, diversify local economies, and generate or retain long-term, private sector jobs and investment.

**US Environmental Protection Agency**

The mission of the EPA is to protect human health and the environment based on the best available scientific information. The EPA has an abundance of resources related to hazard mitigation to help inform the Town of Westerly.

**US Fish and Wildlife Service**

The US Fish and Wildlife Service's (FWS) primary responsibility is the conservation and management of fish, wildlife, plants, and their habitats. The FWS issues grants and other financial assistance, including those identified below:

- Farm Bill Conservation Programs
- Habitat Conservation Plan Land Acquisition Grants
- Habitat Conservation Planning Assistance Grants
- National Coastal Wetlands Conservation Grants
- North American Wetlands Conservation Act (NAWCA) Grants: US Small
- North American Wetlands Conservation Act (NAWCA) Grants: US Standard
- U.S. Fish and Wildlife Service Seeks Project Applications for \$38 Million in Fish Passage Funding

**FWS New England Field Office**

70 Commercial Street, Suite 300 Concord, NH 03301-5094  
(603) 223-2541

## Recent hazard mitigation related grants awarded to the Town

Project Description	Year Award/ Project Status	Program/Westerly Lead	Grant Source	Awarded Amount
Winnapaug Pond Dredging & Eelgrass Restoration	2019 Completed	Development Services	USACOE	\$2,900,000
Flood wall around New Canal Street Pump Station	2020 Completed	Public Works	RIDEM - Wastewater Treatment Facility Resilience Fund	\$249,550
Flood wall around Old Canal Street Pump Station	2020 Completed	Public Works	RIDEM -Municipal Resilience Program	\$191,000
Potter Hill Dam - Initial Design & Engineering	2020 Completed	Potter Hill Dam	Federal - NOAA	\$110,682
Potter Hill Dam Additional Studies- Portion being used for dam assessment	2020 Completed	Potter Hill Dam	Federal - USFW	\$43,500
Chapman Pond Boat Wash Station & Lake Management Plan - Non-Point Source for Chapman Pond	2020 <i>In progress</i>	Recreation	RIDEM - Clean Water Act, Section 319	\$68,500
Installation of Springbrook Road, South & West Fairway infiltration basins	2020 <i>In Progress</i>	Public Works/Town Engineer	RIBB -Municipal Resilience Program	\$113,000
NOAA Year 2 Match	2020 <i>Not Started</i>	Potter Hill Dam	Federal - NOAA	\$102,550
For Construction Project	2020 <i>Not Started</i>	Potter Hill Dam		\$600,000
Potter Hill Mill -Removal	2020 <i>Not Started</i>	Potter Hill Dam	Federal - American Rescue Plan Act (ARPA)	\$400,000
Refurbish two ambulances/equipment	2021 <i>In Progress</i>	Grant Administration	Federal - American Rescue Plan Act (ARPA)	\$310,000
Utility tractor and beach rake	2021 <i>In Progress</i>	Recreation	Federal - American Rescue Plan Act (ARPA)	\$92,068
Town Hall HVAC	2021 <i>In Progress</i>	Public Works	Federal - American Rescue Plan Act (ARPA)	\$1,300,000
Town Hall- Windows	2021 <i>In Progress</i>	Public Works	Federal - American Rescue Plan Act (ARPA)	\$400,000
Planning & regulation changes	2021 <i>Not Started</i>	Downtown Stormwater (Collaborative with SRICD)	SNEP (Regional) - Technical Assistance	Tech Assist
RIDOT/SRICD Charter for Planning of Stormwater Infrastructure Projects	2021 <i>Not Started</i>	Downtown Stormwater (Collaborative with SRICD)	RIDOT - Stormwater Charter	\$25,000
Planning, design, implementation ARPA	2021 <i>Not Started</i>	Downtown Stormwater (Collaborative with SRICD)	Federal - American Rescue Plan Act (ARPA)	\$250,000
construction of green infrastructure	2021 <i>Not Started</i>	Downtown Stormwater	SNEP (Regional) - SWIG (Watershed Implementation Grant)	\$200,000
Hazard Mitigation Plan update	2022 <i>In Progress</i>	Planning	FEMA though RIEMA- BRIC	\$56,250
Emergency Management Director and Assistant stipends	2022 <i>In Progress</i>	Police Department	FEMA though RIEMA	\$7,500
Emergency Management Training	2022 <i>In Progress</i>	Police Department	RIDOH - MEDS PODS	\$7,500
Tide Gauge in Watch Hill Cove	2022 <i>In Progress</i>	Harbor Management	Federal - U.S. Geological Survey	\$12,375
NBEP Grant for Planning of Stormwater Infrastructure Projects	2022 <i>Not Started</i>	Downtown Stormwater (Collaborative with SRICD)	Narragansett Bay Estuary Program - Green Infrastructure Planning	\$75,000
MRP Action Grant. Greening Downtown Westerly	2022 <i>Not Started</i>	Downtown Stormwater (Collaborative with SRICD)	RIBB -Municipal Resilience Program	\$500,000

# APPENDIX 6-1

## Possible Actions

---

# Appendix 6-1

## Possible Actions

As it is good practice, and in support of CRS Activity 510 Planning Process - Step 7, an array of possible activities was reviewed for inclusion in the *2023-2028 Action Plan*. The activities considered were those previously identified in the following Town of Westerly planning documents, those identified by Public Opinion Survey respondents, and those offered by Committee members, members of the public, or other stakeholders.

- Town of Westerly - Hazard Mitigation Plan (2018)
- Town of Westerly - Comprehensive Community Plan (2020)
- Rhode Island State Hazard Mitigation Plan (2019)
- Westerly MRP Community Resilience Building (CRB) Workshop Summary of Findings (2019)
- Westerly Route 1 Corridor Report (2022)
- Harbor Management Plan (2016-Revised 10/28/2019)
- Wood-Pawtucket Watershed Flood Resiliency Management Plan (2017)
- Wood-Pawcatuck Wild & Scenic Stewardship Plan (2018)
- Energy Management Plan (2016)
- HM&FMP Public Opinion Survey (2022) - *HM&FMP Outreach Activity #6*

In undertaking this extensive plan integration process, the Town has successfully linked these documents with the 2023 hazard mitigation strategy and actions. The Town also reviewed actionable suggestions made by residents and other stakeholders as part of the Public Opinion Survey. The actionable items were extracted from the Public Opinion comments and organized into 20 categories, many of which have been integrated into the *2023 Action Plan*.

Each of the possible actions in the following resources has been identified as being included or not in the *2023 Action Plan*. For actions included, the 2023 Action number has been provided. **It should be noted that the specification "included" refers to the general intent of the reviewed action (i.e. the wording may vary or some particular aspects may not be included – however, the action in some form is essentially represented). Similar actions from various sources were combined and rewritten for inclusion in the 2023 Action Plan.** For actions not included in the 2023 Action Plan, a reason has been provided.

# Town of Westerly Hazard Mitigation Plan (2018)

Please refer to **Section 5.3** for a detailed review and status of the 2018 HMP actions listed below.

Possible Activity	2023 Action Plan	
	Included	Reason Not included
<p><b>5.5.1 Action #1: Elevate Repetitive Loss Structures</b> As grants become available, the Town plans to continue to offer funding obtained through FEMA to assist owners of Repetitive and Severe Repetitive Loss properties, Repetitive Loss Areas, and other properties susceptible to flood inundation in elevating their homes and/or their utilities in order to reduce the vulnerability to flooding and storm surge. The program criteria will be modified as needed throughout the life of this plan.</p>	Action 2023- 4.3-D	
<p><b>5.5.2 Action #2: Improve Misquamicut Drainage– Phase II</b> The Town completed the Phase I study for the Misquamicut Beach Drainage Project in 2014. Phase II implementation includes the installation of a collection system, using natural resources such as replenished dunes, planted vegetation, and the removal of impervious surfaces such as paved parking lots. The incorporation of an ISDS management policy is also part of the drainage project.</p>	Action 2023- 3.3-A	
<p><b>5.5.3 Action #3: Improve Main Street Drainage</b> Main Street from the Bridge restaurant to Beach Street is particularly susceptible to flooding caused by overflow from the Pawcatuck River. This action considers building a berm along the river with a pump system to pump stormwater over the berm into the river.</p>	Action 2023- 3.1-B	
<p><b>5.5.4 Action #4: Improve Reliability of Water Distribution Infrastructure and Well Fields</b> The purpose of this action is to upgrade aging waterlines to improve reliability and reduce the likelihood of service disruption or contamination from storm events. The action would also construct a berm to protect well fields White Rock #1 and #2 from flooding.</p>	Action 2023- 3.2-D	
<p><b>5.5.5 Action #5: Evaluate Drainage Options for Pierce &amp; Ann Streets</b> The purpose of this action is to conduct an engineering study to map the existing drainage system supporting Pierce and Ann Street. Future actions will be to develop and implement actions to improve drainage infrastructure, inspect, clean, augment, and replace necessary components.</p>	Actions 2023- 3.1-B	
<p><b>5.5.6 Action #6: Reduce Residential Flooding of North End Neighborhood</b> Promote flood resiliency through adaptive strategies by encouraging higher flood protection standards to reduce future losses. Develop and mail an informational flyer to North End residents. Include flood resistant building design ideas and low impact development suggestions.</p>	Action 2023- 1.1-A	
<p><b>5.5.7 Action #7: Improve Drainage on Critical Roads Subject to Flooding</b> This action will reduce flooding on critical transportation routes through and roadway elevation and improved drainage by enlarging culverts, providing open drainage swales, and increasing underground stormwater pipe storage. Aging waterlines will be replaced (see action #4) while exposed for roadway improvements. Wherever possible and prudent, overhead utility lines will be placed underground. A memorandum of agreement will be established RIDOT to address issues with state owned roads.</p> <p><b>Critical roads subject to flooding:</b> Atlantic Ave. &amp; adjacent roads*, Bridge Road, Route 91*, Airport Road, Sunset &amp; Wauwinnet Avenues, Watch Hill Road*, Bay Street, Canal Street*, Dunn’s Corners, Pound Roads, Perkins Avenue, Langworthy*, Bradford, Bowling Lane, Maplewood*, &amp; Ranger Roads, Weekapaug Road*, Breach Drive, Spruce Street, Narragansett Avenue, Friendship Street, Pierce, Pond, Pleasant Streets, Cottage and Wall streets, Springbrook and White Rock Roads, Main Street at School and Cross Streets *Priority will be given to roads that are part of the evacuation route.</p>	Action 2023- 3.1-B	

Possible Activity	2023 Action Plan	
	Included	Reason Not included
<p><b>5.5.8 Action #8: Dam Management</b> The purpose of this action is to continue to monitor dams in need of repair, reconstruction or removal. All of the dams in Westerly are classified as a low hazard (Woody Hill Reservoir, Olaf Farm Pond, Misquamicut Country Club Pond, Boiling Springs, and Stillmanville). Clarification of responsible parties is needed where there are jurisdictional boundaries. If dam conditions change, additional actions may be required.</p>	Action 2023- 4.2-A	
<p><b>5.5.9 Action #9: Improve Downtown Areas Subject to Pawcatuck River Flooding</b> The purpose of this action is to reduce vulnerability and improve resiliency by educating business owners about retrofitting buildings to mitigate flood water and debris damage. This action may be supplemented by improvements to the drainage systems in the future.</p>	Action 2023- 1.1-A	
<p><b>5.5.10 Action #10: Reduce Contamination from Textile Mills, Dye Plants, and Hazardous Materials Handlers</b> The purpose of this action is to reduce the potential for hazardous materials contamination resulting from textile mills, dye plants, and hazardous materials handlers located in flood zones through zoning restrictions, acquisition, relocating businesses, and retrofitting sites.</p>	Action 2023- 4.1-B	
<p><b>5.5.11 Action #11: Improve Drainage along Babcock Cove &amp; Mastuxet Brook at Watch Hill Road</b> The purpose of this action is to improve roadway drainage &amp; elevate, cleanup TMDL's in Mastuxet Brook and Airport Road, and maintain wetlands for floodwater storage.</p>	Action 2023- 3.1-B	
<p><b>5.5.12 Action #12: Construct Breachways/Seawalls/Jetties/Causeways in Avondale, River banks on Canal Street</b> The purpose of these action is to protect the built environment, retail district, and improve submerged vegetative cover. Actions include: (A) Build seawalls on the Pawcatuck River to protect manufacturing district and low lying residential property. (B) Proposed work along Bay Street includes replacement of curbing, sidewalk, pavement, and lighting. Although the elevation will not drastically change, slight changes will allow stormwater to drain to catch basins. (C) Dredge Weekapaug Breachway to improve pond flushing.</p>	Actions 2023- 2.1-D & 4.2-C	Work along Bay Street completed
<p><b>5.5.13 Action #13: Reduce Contaminants from Private Septic Systems (OWTS Units) in Flood Prone Areas</b> The purpose of this action is to reduce contamination emanating from private septic systems located with flood prone areas by encouraging owners to inspect, repair, pump out, upgrade, or replace systems. Included in a direct mailing would be information on the Community Septic System Loan Program (CSSLP) which provides low interest loans for septic repairs and replacements.</p>	Actions 2023- 1.1-A & 1.1-B	
<p><b>5.5.14 Action #14: Expand Stormwater Retention &amp; Detention Ponds</b> The purpose of this action is to improve stormwater retention capacity in developments by incorporating into subdivision design &amp; development plan applications review maintenance schedules during application process, improve design standards for landscaping, and incorporate into zoning &amp; land development regulations. This action also calls for the increasing the detention capacity at Argyle Drive, Westerly Middle School, Springbrook School, Linnate, Davenport, Walton Streets &amp; Yankee Drive Trolley Lane, and Brandywine.</p>	Action 2023- 3.1-B	
<p><b>5.5.15 Action #15: Raise Boombridge Road Bridge</b> Boombridge Road Bridge (Pawcatuck River) has been closed for nearly 10 years due to safety concerns. If the bridge were to be repaired/rebuilt, it should also be elevated. Increasing the clearance beneath bridge will improve flood passage.</p>		Completed
<p><b>5.5.16 Action #16: Protect Pumping Stations and WWTF from flooding</b> Protect auxiliary power, generators, and other equipment from flooding. Specific actions as per the RIDEM study on Implications of Climate Change on Rhode Island Wastewater Treatment Facilities (2016). <b>Action 16a Protect Secondary Clarifiers at WWTF from Flooding</b> Protect facility entrances with flood barriers. Replace sludge pumps with submersibles. Store replacement drive components on site. Pumps may be temporarily augmented. <b>Action 16b Protect Disinfection Components at WWTF from Flooding</b> Elevate or relocate disinfection system components. <b>Action 16a Protect New Canal Pump Station from Flooding</b></p>	Action 2023- 3.2-B	Most of the identified projects (16a,b,c) have been completed

Possible Activity	2023 Action Plan	
	Included	Reason Not included
Protect facility entrances with flood barriers and relocate building penetrations for louvers. Elevate back-up generator system. <b>Action 16b Protect Old Canal Pump Station from Flooding</b> Protect facility entrances with flood barriers. Elevate back-up generator systems. <b>Action 16c Protect Old Canal Pump Station from Flooding</b> Protect facility entrances with flood barriers.		
<b>5.5.17 Action #17: Protect Homes and Buildings Subject to Wildfire (Continued action)</b> The purpose of this action is to reduce the vulnerability of homes and buildings to wildfire by removing damaged trees, clearing underbrush, and conducting controlled burns. The action also calls for a fire safety program to inform homeowners.	Action 2023- 1.1-A	

## Town of Westerly Comprehensive Community Plan (2020)

Possible Activity	2023 Action Plan	
	Included	Reason Not included
<b>Natural Hazards and Resiliency</b>		
<b>GOAL RES-1:</b> Westerly will be a resilient community, prepared for immediate and long-term environmental threats.		
<b>Policy RES-1.1:</b> Prioritize and protect at-risk municipal structures, property, and utilities.		
<b>Action RES-1.1.A:</b> Include floodplain management criteria in any future decisions by the Town to acquire or sell property located within the Special Flood Hazard Area (SFHA) or 500-year floodplain.	Action 2023- 4.1-C	
<b>Action RES-1.1.B:</b> Work with the State of Rhode Island, the State of Connecticut, the Town of Stonington, the Town of North Stonington, and USACE to re-engineer and prevent potential failure of bridges in the event of a flood.	Action 2023- 3.1-A	
<b>Action RES-1.1.C:</b> Work with utility companies in identifying and replacing utility infrastructure that is determined to be vulnerable to natural hazards.	Action 2023- 3.4-B	
<b>Action RES-1.1.D:</b> Identify and pursue grant opportunities to mitigate the vulnerability of existing utility infrastructure, such as requiring the installation of utilities underground in new developments to avoid damage from high winds and/or falling trees.	Action 2023- 3.4-B	
<b>Policy RES-1.2:</b> Anticipate new development, redevelopment, structural elevations, and, if necessary, retreat from coastal shorelines and riparian zones in especially vulnerable areas.		
<b>Action RES-1.2.A:</b> Require design and construction in strict conformance with building code requirements and hazard mitigation strategies in the floodplain.	Action 2023- 4.3-D	
<b>Action RES-1.2.B:</b> Adopt regulations reinforcing CRMC requirements and conditions to protect and preserve existing native vegetation in vulnerable areas.	Action 2023- 4.3-C	
<b>Action RES-1.2.C:</b> Replace native vegetation on publicly owned open space properties within the SFHA where missing, damaged, or lost due to storm surge, beginning with the barrier beach/dune restoration.	Action 2023- 2.1-D	

Possible Activity	2023 Action Plan	
	Included	Reason Not included
<b>Action RES-1.2.D:</b> Determine changes needed to the Land Development and Subdivision Regulations and Zoning Ordinance for better protection of infrastructure within the SFHA and areas under regulation by the Shoreline Change SAMP.	Action 2023- 4.3-C	
<b>Policy RES-1.3:</b> Prepare for the occurrence of extreme weather events and develop mitigation policies and procedures that best reduce fiduciary risk.		
<b>Action RES-1.3.A:</b> Comprehensively study existing and future land uses in areas most vulnerable to coastal erosion and storm surge and, with robust public engagement, evaluate alternatives to mitigate risk.	Action 2023- 4.3-B	
<b>Action RES-1.3.B:</b> Discuss, as a community, how best to curtail new development in the Coastal Barrier Resource System (CBRS), and all areas directly exposed to the Atlantic Ocean, in order to maintain natural resources that attract tourists and seasonal renters, while best providing for the safety of residents and visitors.	Action 2023- 4.3-B	
<b>Action RES-1.3.C:</b> Establish a protocol to pre-position public works forces and/or equipment prior to anticipated flood events to better remove flood debris as it is accumulating.	Action 2023- 2.1-D	
<b>Action RES-1.3.D:</b> Pursue completion of the action outlined in the Hazard Mitigation Plan and update the Plan at least every five years, as needed, and after every major natural hazard event which impacts the community.		Identified in <i>HM&amp;FMP</i> narrative
<b>Action RES-1.3.E:</b> Establish a Resilience Committee to strategically plan for and operationalize more economic, social, ecological, and infrastructure resilience across the municipality.	Action 2023- 1.1-B	
<b>Action RES-1.3.F:</b> Dredge Winnapaug Pond and western Quonochontaug Pond in an ecologically responsible manner and use soils for local salt marsh restoration and beach nourishment projects.	Action 2023- 4.2-C	
<b>Action RES-1.3.G:</b> Develop a priority map for the preservation of natural areas across the municipality that are not currently protected and will enhance resilience and plan for their acquisition.	Action 2023- 4.1-A	
<b>Policy RES-1.4:</b> Improve the water quality and navigability of the Pawcatuck River and Little Narragansett Bay.		
<b>Action RES-1.4.A:</b> Secure funding and remove the Potter Hill Dam.  <i>Please Note: Whether to remove or make improvements to the Potter Hill Dam is an ongoing issue as the Town gathers and reviews technical data. Action 2023-4.2-A is a general action related to all five dams in Westerly.</i>	Action 2023- 4.2-A	
<b>Action RES-1.4.B:</b> Propose local and State legislation requiring any new bridges and/or bridge replacements crossing the Pawcatuck River to include decks that fully span the River between abutments and avoid any structural need for piers or piles.	Action 2023- 3.1-A	
<b>Action RES-1.4.C:</b> Repair the Stillmanville Bridge and remove the Stillmanville Dam as a combined construction project. ( <i>Note: Stillmanville Dam is not a functioning dam; however debris from the former dam remains in the river</i> )	Action 2023- 4.2-A	
<b>Natural Resources</b>		
<b>GOAL NAT-1:</b> Westerly's natural resources will be available for the future enjoyment of its residents and visitors.		
<b>Policy NAT-1.1:</b> Provide long-term conservation of natural resources.		
Action NAT-1.1.A: Support the local land trusts in the acquisition of open space and, when applicable, trail creation and maintenance.	Action 2023- 4.1-C	
Action NAT-1.1.B: Provide annual training opportunities to land-use decision-makers on natural resource protection and management.	Action 2023- 1.1-B	

Possible Activity	2023 Action Plan	
	Included	Reason Not included
<b>Action NAT-1.1.C:</b> Implement the Salt Pond Region SAMP.	Action 2023- 4.3-C	
<b>Policy NAT-1.2:</b> Ensure the sustainable use and management of natural resources.		
<b>Action NAT-1.2.A:</b> Promote and encourage the utilization of voluntary conservation methods for conserving farmlands and forested areas zoned for residential use.	Action 2023- 4.1-C	
<b>Action NAT-1.2.D:</b> Revise the Zoning Ordinance to update the classification of uses permitted in special flood hazard areas and the APOD.	Action 2023- 4.3-C	
<b>Action NAT-1.2.E:</b> Establish a River Corridor Overlay District to complement the Pawcatuck River's federal designation as Wild and Scenic.	Action 2023- 4.3-C	
<b>Action NAT-1.2.G:</b> Amend regulations to provide conditions and standards that protect and create sustainable use of natural resources as part of the land-use decision-making process.	Action 2023- 4.2-C	
<b>Action NAT-1.2.H:</b> Develop and adopt coastal greenway regulations, green infrastructure, and other soft stormwater control methods and implement in the development review process for projects in proximity to the Pawcatuck River and in the shore communities.	Action 2023- 4.3-C	
<b>Infrastructure</b>		
<b>GOAL INF-1:</b> Sustainable infrastructure will be in place to ensure water quality, efficient wastewater treatment, and effective stormwater management.		
<b>Policy INF-1.1:</b> Enhance the resiliency of Westerly's water system by developing programs and projects that improve maintenance and provide protection and redundancy.		
<b>Action INF-1.1.B:</b> Prepare a <i>Source Water Protection Plan</i> to reduce or eliminate existing and potential risks to the drinking water quality of the public water system.	Action 2023- 3.2-A	
<b>Action INF-1.1.C:</b> Assess the current condition of all active well sites and the possibility of physical damage or contamination by either man-made or natural hazards. Create a monitoring and maintenance program to ensure long-term viability.	Action 2023- 3.2-D	
<b>Action INF-1.1.F:</b> Study existing and projected effects of drought on local public health and safety, economic activity, and environmental resources in preparation for a drought response plan.	Action 2023- 3.2-C	
<b>Action INF-1.1.I:</b> Continue annual communications from Utilities Division informing residents about actions they can take to improve water quality.	Action 2023- 1.1-A	
<b>Policy INF-1.3:</b> Improve stormwater drainage treatment and conveyance systems.		
<b>Action INF-1.3A:</b> Prioritize stormwater treatment and conveyance systems for repair and replacement based on age and condition and incorporate green infrastructure.	Action 2023- 3.3-A	
<b>Action INF-1.3.C:</b> Identify detrimental land uses in the existing Aquifer Protection Overlay District (APOD) and revise land-use regulations to mitigate negative environmental impacts and limit new development of detrimental land uses in this area.		Completed
<b>Action INF-1.3.D:</b> Revise the Zoning Ordinance and Land Development and Subdivision Regulations to reduce the amount of impervious surface allowed in new development and redevelopment projects.	Action 2023- 4.3-A	
<b>Action INF-1.3.E:</b> Revise the Stormwater Management Ordinance to require green infrastructure in new private and public projects during road creation or improvement, installation of pedestrian rights-of-way (including sidewalks), and surface parking areas.	Action 2023- 3.4-A	
<b>GOAL INF-2:</b> Proactive management and maintenance of all physical assets under the town's control, including buildings, roads, and land.		

Possible Activity	2023 Action Plan	
	Included	Reason Not included
<b>GOAL INF-2:</b> Proactive management and maintenance of all physical assets under the town's control, including buildings, roads, and land.		
<b>Policy INF-2.1:</b> Maintain a Capital Improvement Program (CIP) that is consistent with the goals and policies of the Comprehensive Plan and provide timely implementation.		
<b>Action INF-2.1.B:</b> Program for new and improved infrastructure to ensure water quality, efficient wastewater treatment, and effective stormwater management.	Actions 2023- 3.2-A, 3.2-B, 3.3-A	
<b>Action INF-2.1.C:</b> Create orderly and efficient provision of infrastructure facilities and services through long-range capital facilities planning consistent with this Plan.	Action 2023- 2.1-A	
<b>Action INF-2.1.F:</b> Develop strategies to address potential SLR, storm surge, and other climate changes on Westerly's infrastructure.	Actions 2023- 2.1-A, 3.1-A, 3.1-B, 3.2- B, 3.2-D, 3.3-A, 3.4-B	
<b>Action INF-2.1.G:</b> Continue to improve the Town's GIS data on existing water, wastewater, and stormwater infrastructure.	Action 2023- 1.1-B	
<b>Services and Facilities</b>		
<b>GOAL SF-1:</b> Westerly will provide services critical to the community's continued health, safety, and well-being.		
<b>Policy SF-1.1:</b> Support the mission and activities of organizations and businesses that provide services to veterans, families, elderly persons, those of low- and moderate-income, those experiencing homelessness, and those with special needs.		
<b>Action SF-1.1.E:</b> Collaborate in obtaining grant funding to support services that align with this Plan.	Action 2023- 2.2-A	
<b>Policy SF-1.2:</b> Ensure continuous improvement to municipal programs, services, facilities, and the local government's interaction with human services organizations.		
<b>Action SF-1.2.L:</b> Publicize the Town website's <i>Notify Me</i> tool to increase the number of individuals subscribed to digital Town notifications.	Action 2023- 1.1-B	
<b>Action SF-1.2.N:</b> Upgrade emergency services radio network to digital along with wireless infrastructure upgrades to reduce impacts of wind-related communication interruptions.	Action 2023- 3.4-A	
<b>Action SF-1.2.O:</b> Improve use and awareness of evacuation routes across municipality via educational outreach, better mapping of alternative routes and closures, enhanced understanding of flood impacts, and installation of early warning systems.	Action 2023- 1.1-B	
<b>Transportation Network</b>		
<b>GOAL TRANS-2:</b> Transportation in and around Westerly will ensure safe, efficient, and equitable travel which enhances the quality of life for both residents and visitors.		
<b>Policy TRANS-2.2:</b> Ensure that the municipal transportation system, including, but not limited to roads, bridges, and culverts, effectively and resiliently meets the community's needs.		

Possible Activity	2023 Action Plan	
	Included	Reason Not included
<b>Action TRANS-2.2.A:</b> Increase enforcement of snow and ice removal from sidewalks to meet ADA standards to the greatest extent feasible and revise the Sidewalk Snow Removal Ordinance to include childcare centers, post-secondary schools, senior centers, and any place that serves as an emergency shelter and/or warming center.		Existing policy
<b>Historic and Cultural Resources</b>		
<b>GOAL HRC-1:</b> Westerly's identity and cultural heritage will be preserved and enhanced through reinvestment in its historic assets.		
<b>Policy HRC-1.2:</b> Achieve the objectives of historic preservation standards and guidelines to promote the unique characteristics of Westerly's neighborhoods and its overall sense of place.		
<b>Action HCR-1.2.D:</b> Establish a River Corridor Overlay District to complement Stonington's Pawcatuck River Greenway initiative.	Action 2023- 4.3-C	
<b>GOAL HRC-2:</b> Westerly's overall attractiveness and quality of life will be elevated by the continued vitality of historical and cultural investment.		
<b>Policy HRC-2.1:</b> Protect and promote scenic views, streetscapes, parks, rivers, major bodies of water, and natural and human-made landscapes.		
<b>Action HCR-2.1.A:</b> Identify cemeteries and burial grounds at risk from natural and human-made conditions.	Action 2023- 2.1-C	
<b>Action HCR-2.1.B:</b> Establish and maintain a municipal register of areas and structures of historical or architectural significance, historical landscapes, and public art, especially in those areas that are under the threat of climate change impacts.	Action 2023- 2.1-C	
<b>Housing Opportunities</b>		
<b>GOAL HSNG-1:</b> A broad range of integrated, inclusive, age-friendly, and affordable housing options town wide will securely meet the needs of all households and individuals in the community.		
<b>Policy HSNG-1.3:</b> Promote the development and rehabilitation of integrated affordable-by-design housing throughout the community.		
<b>Action HSNG-1.3.A:</b> Work to eliminate unsafe and non-compliant housing and improve housing conditions through enforcement of minimum housing requirements and building code compliance.		Existing policy
<b>Economic Vitality</b>		
<b>GOAL ECON-1:</b> A place-based approach to economic development will attract broad opportunities for all participants in the local economy.		
<b>Policy ECON-1.3:</b> Ensure that new economic development opportunities preserve community assets and character.		
<b>Action ECON-1.3.C:</b> Collaborate with other influencers on the restoration of the barrier beaches and Salt Pond shoreline access to safeguard both natural and economic value.	Action 2023- 4.1-D	
<b>GOAL ECON-3:</b> Sustain a local economy that is resilient to natural and human-caused disasters.		
<b>Policy ECON-3.1:</b> Anticipate the impact of catastrophic events on the local economy.		

Possible Activity	2023 Action Plan	
	Included	Reason Not included
<b>Action ECON-3.1.A:</b> Update the Hazard Mitigation Plan to incorporate a cost analysis for the upgrading and maintenance of the services and facilities that the local economy is most dependent on.		Outside project scope
<b>Action ECON-3.1.B:</b> Develop an economic action plan for catastrophic events to ensure a foundation for rebuilding that sustains the local economy through the recovery process.	Action 2023-2.1-B	
<b>Policy ECON-3.2:</b> Reduce the burden of climate change impacts on municipal finances and the local and regional economies.		
<b>Action ECON-3.2.A:</b> Work with relevant Federal and State agencies on shared objectives and guiding principles, such as those identified in Resilient Rhody to reduce the burden of climate change impacts on the local economy and municipal finances.	Action 2023-2.2-B	
<b>Action ECON-3.2.C:</b> Review the Town's procedures and responsibilities to ensure its readiness to and accountability for responding to catastrophic events.		Addressed in COOP & EOP
<b>Policy ECON-3.3:</b> Ensure economic resilience and sustainability through smart city and strong town strategies.		
<b>Action ECON-3.3.A:</b> Quantify the value of all property and resulting tax revenue that would be impacted by increased flooding, SLR, and storm events.	Action 2023-2.2-C	
<b>Action ECON-3.3.B:</b> Publicize the incentives available for business and residents to undertake adaptation and resiliency measures for their properties.	Action 2023-1.1-B	
<b>Energy</b>		
<b>GOAL NRG-1:</b> Renewable energy generation will be increasingly available to the community.		
<b>Policy NRG-1.1:</b> Encourage the development of and residential access to renewable energy resources.		
<b>Action NRG-1.1.A:</b> Seek partnerships with other organizations to facilitate renewable energy initiatives.		Address in Energy Plan update
<b>Action NRG-1.1.B:</b> Support RIRRC in any undertaking of a waste-to-energy program.		Address in Energy Plan update
<b>Action NRG-1.1.C:</b> Study the suitability of integrating wind energy systems within the municipality as part of a strategic energy plan.		Address in Energy Plan update
<b>Action NRG-1.1.D:</b> Revise the Zoning Ordinance and Land Development and Subdivision Regulations to encourage the installation of on-site renewable energy generation facilities in new developments and redevelopment projects.		Address in Energy Plan update
<b>Action NRG-1.1.E:</b> Review current regulations to further allow renewable energy generation in appropriate areas of the community.		Address in Energy Plan update
<b>Policy NRG-1.2:</b> Continue to reduce Westerly's dependence on fossil fuels.		
<b>Action NRG-1.2.A:</b> Review capital improvement requests to include steps towards carbon reduction.	Action 2023-1.3-A	
<b>Action NRG-1.2.B:</b> Consult the State of Rhode Island, the State of Connecticut, and neighboring municipalities on technological advances in the generation of electrical power for compatibility with the community and potential incorporation into municipal regulations.		Address in Energy Plan update
<b>Action NRG-1.2.C:</b> Through facility improvements and fleet replacement, decrease the overall annual volume of greenhouse gas emissions produced by municipal facilities and vehicles.	Action 2023-1.3-A	
<b>Action NRG-1.2.D:</b> Achieve at least 15% of the Town's total municipal thermal energy consumption being sourced from renewable energy by 2035 by including alternative energy technology in all municipal capital projects.		Address in Energy Plan update

Possible Activity	2023 Action Plan	
	Included	Reason Not included
<b>Action NRG-1.2.E:</b> Review and revise regulations to limit the amount of land disturbance during site development and construction to protect carbon sinks, such as forests and fields.	Action 2023-4.3-C	
<b>GOAL NRG-2:</b> Westerly will use energy resources efficiently to mitigate climate-related quality-of-life and public health impacts and reduce energy consumption.		
<b>Policy NRG-2.1:</b> Ensure all existing and future energy infrastructure is planned, constructed, and adequately monitored to avoid negative impacts to the local environment and the community's quality of life, including public health.		
<b>Action NRG-2.1.A:</b> Require re-vegetation, specifically the re-planting of trees, of properties disturbed through development of energy infrastructure to protect carbon sinks, such as forests and fields.	Action 2023-4.3-C	
<b>Action NRG-2.1.B:</b> Amend the Zoning Ordinance and Land Development and Subdivision Regulations to require the incorporation of elements for reducing surface solar heat conduction and wind velocity, such as by increasing the area(s) of proposed greenscapes and/or avoiding the use of thermal-conductive impervious materials.	Action 2023-4.3-A	
<b>Action NRG-2.1.C:</b> Pursue local agricultural production and food availability to reduce the community's energy consumption.		Address in Energy Plan update
<b>Policy NRG-2.2:</b> Reduce energy consumption across all municipal facilities and public infrastructure.		
<b>Action NRG-2.2.A:</b> Publicize State-level and non-profit programs which assist qualifying applicants in home weatherization activities to improve energy efficiency.	Action 2023-1.1-B	
<b>Action NRG-2.2.B:</b> Adopt a strategic energy plan in accordance with Energy 2035, the Rhode Island Greenhouse Gas Emissions Reduction Plan, and RIIB requirements, with assistance from a qualified energy consultant.		2016 Energy Plan created and Town intends to update
<b>Action NRG-2.2.C:</b> Pursue opportunities to provide publicly accessible electric charging stations and local government workplace charging through the Electrify RI Program.		Ongoing; EV charging station installed in Town parking lot
<b>Action NRG-2.2.E:</b> Require all newly constructed municipal buildings and public schools to be LEED-certified.		Completed LEED conversion where economically made sense
<b>Action NRG-2.2.F:</b> Require all new fixtures and appliances used in municipal buildings and public schools to be Energy Star© rated.		Address in Energy Plan update
<b>Action NRG-2.2.G:</b> Purchase hybrid and/or electric vehicles (EVs), including public school buses, to replace existing fossil fuel-powered vehicles.	Action 2023-1.3-A	Ongoing; school buses currently being replaced

## Rhode Island State Hazard Mitigation Plan (2019)

Category	Possible Activity	2023 Action Plan	
		Included	Reason Not included
Westerly Specific	<p><b>Activity 2019-49:</b> State-owned property retreat</p> <p>Identify and implement opportunities for retreat and infrastructure removal on state-owned properties. Implemented restoration projects should continue to be monitored to evaluate the effectiveness of different restoration practices and can serve as demonstration sites for shoreline adaptation.</p> <p>Retreat of state-owned properties reduces hazard impact and risk and ensures governmental continuity of operations after an event.</p>		RI State jurisdiction
	<p><b>Activity 2019-50:</b> Beach Ecosystem Preservation</p> <p>Preserve the dynamic nature of beaches and barriers in future management of these critical natural systems. Differentiation between developed and undeveloped systems is necessary when considering management approaches. New development should be minimized in undeveloped beach and dune areas and retreat incentivized as a coastal adaptation strategy where possible. Offshore sand sources suitable for beach replenishment should be identified and beaches should be prioritized for renourishment.</p> <p>As SLR occurs along Rhode Island’s shoreline, beach ecosystem management and retreat incentives enable the preservation of beaches and barriers and provides additional buffers to protect developments.</p>	<p>Actions 2023-4.1-A , 4.1-C, 4.1-D, 4.3-C</p>	

## Westerly Municipal Resilience Program Community Resilience Building Workshop Summary of Findings (2019)

### Recommendations to Improve Resilience

A common thread throughout the workshop discussions was the recognition that Westerly needs to be better prepared through longer term, community-based, contingency planning across all areas of concern. This need and additional highlights surfaced and prioritized by the workshop participants are provided below across several subcategories including capacity building, projects, plans/preparedness/studies/outreach, and policy. Mitigation actions from Westerly NHMP (2018) provided in Appendix. The workshop participants collectively identified several key priority areas stated here and reflected in the lists of potential actions below:

- Infrastructure improvements to wastewater treatment facilities, stormwater management systems, and the networks of roads and bridges.
- Natural system conservation and water quality for drinking and ecosystem health.
- Emergency preparedness, communications systems, and continuation of services.

Category	Possible Activity	2023 Action Plan	
		Included	Reason Not included
<b>Higher Priority</b> Capacity Building	Create a Resilience Committee to strategically plan for and operationalize more economic, social, ecological, and infrastructure resilience across municipality.	Action 2023-1.1-B	
<b>Higher Priority</b> Projects	Secure funding to make improvements to Westerly wastewater treatment plants including upgrades, installation of berms and flood gate, raising pump stations, providing generators for pumps, and limiting discharge quantities.	Action 2023-3.2-B	
	Install berms around municipal water supply wellheads and wastewater treatment facility to limit overtopping by floodwaters.	Actions 2023-3.2-B & 3.2-D	
	Redevelop offline drinking water supply wells and repair existing wells and pipes where needed to improve available distribution network.	Action 2023-3.2-D	
	Improve stormwater management system on Atlantic Avenue that incorporates green stormwater infrastructure (bioswales, filter stripes, etc.).	Action 2023-3.1-B	
	Secure funding and remove Potter Hill Dam.  <i>Please Note: Whether to remove or make improvements to the Potter Hill Dam is an ongoing issue as the Town gathers and reviews technical data. Action 2023-4.2-A is a general action related to all five dams in Westerly.</i>	Action 2023-4.2-A	
	Increase ability to reduce stormwater inputs to wastewater treatment plants through grey water program.		Existing ordinance
	Remove Stillman Avenue Dam and combine construction project with needed bridge repairs. (Note: Stillmanville Dam is not a functioning dam; however debris from the former dam remains in the river)	Action 2023-4.1-B	
	Improve resilience of Canal Street Substation using flood protection walls or berms along with green stormwater infrastructure to strengthen grid against major events.		RI Energy jurisdiction
	Bolster sea wall and install a one-way drainage tide gate in Watch Hill.	Action 2023-2.1-D	
	Dredge Winnapaug and Quonnie Ponds in ecologically responsible manner and use spoils for local salt marsh restoration/beach nourishment projects.	Action 2023-4.2-C	
	Upgrade emergency services radio network to digital along with wireless infrastructure upgrades to reduce the impacts of wind-related communication interruptions.	Action 2023-3.4-A	
	Continue to monitor the quality and quantity of drinking water available to residents.	Action 2023-3.2-A	
	Increase restoration of eelgrass beds to add additional layer of coastal protection and improve the resilience of coastal estuaries.	Action 2023-4.1-D	
	Explore with utility options to elevate National Grid transformer.		RI Energy jurisdiction
	Flood proof pump house for drinking water well system.		Well points are elevated and protected
Expand the prioritization and installation of green stormwater infrastructure in municipal rights-of-way as a way to help reduce localize flooding and improve water quality in coastal ponds, Pawcatuck River, and Little Narragansett Bay among other wetland assets.	Actions 2023-3.1-B & 3.3-A		

Category	Possible Activity	2023 Action Plan	
		Included	Reason Not included
Higher Priority Projects	Continue installing concrete diffuser over stone and capture of stormwater runoff from Atlantic Avenue into drainage easement.		Alternate SW management completed
	Accelerate the clean-up of the Bradford Dye Site.	Action 2023-4.1-B	
	Remove pavement on Atlantic Avenue and replace with gravel or shell along with the installation of natural infiltration options.		Economically not feasible in near-term
	Maintain dune system at Old Town Beach.	Action 2023-4.1-D	
	Maintain culverts on Route 91 and Pound Road near Chapman Pond and install beaver exclusion devices.	Action 2023-3.1-B	
	Install rain garden demonstration project at Senior Center and involve volunteers in the installation and maintenance of the system over time as an outreach effort via the Senior Center.	Action 2023-1.1-A	
	Improve use and awareness of evacuation routes across municipality via educational outreach, better mapping of alternative routes and closures, enhanced understanding of flood impacts, and installation of early warning systems.	Action 2023-1.1-B	
	Maintain and protect working waterfronts that build on the lessons learned in Point Judith.		Not relevant – no working waterfronts
	Explore opportunities to use clean dredge spoils for salt marsh elevation and restoration (i.e. broad-cast spraying).	Action 2023-4.2-C	
	Ensure translations services are provided for non-English speakers at main municipal facilities and shelters.	Action 2023-1.2-A	
	Implement a water efficiency program across Westerly to minimize residential and commercial use during summer months.	Action 2023-1.1-A	
	Examine the feasibility of expanding existing sewer system to all parts of municipality including those low-lying areas subjected to high groundwater and flooding.		Technical constraints limit town-wide expansion of sewer system
	Explore options to expand burying of powerlines in critical corridors vulnerable to impacts from high wind and ice hazards.	Action 2023-3.4-B	
	Assess the long-term cost and benefits of road elevation on Atlantic Avenue versus progressive "undevelopment" or abandonment to a pedestrian only road or path.		Inquiries with CRMC indicate road elevation not feasible
	Prioritize future salt marsh advancement zones for land acquisition to ensure existing marshes have room to expand as sea levels rise.	Action 2023-4.1-A	
	Enhance communications with and carefully considering the ramifications and liability for people that refuse to evacuate before a major disaster.	Action 2023-1.1-A	
	Consider incorporating resiliency into school facilities via new bond and construction projects that should include "green" building methods and materials.	Action 2023-3.3-A	

Category	Possible Activity	2023 Action Plan	
		Included	Reason Not included
Higher Priority Projects	Look to secure option to utilize parking for shuttle from airport to beaches as well as staging options to facilitate emergency responses.		Not viable option
	Conduct additional outreach and education for local business community to enable faster recovery and continuity before and after major events.	Action 2023-1.1-A	
	Comprehensively and directly discuss as a community coastal buyout options and more restrictive uses on high risk areas in coastal barrier island system and areas directly exposed to the Atlantic Ocean.		Not viable option in near-term
	Increase awareness of available emergency sheltering facilities for all displaced residents.	Action 2023-1.1-B	
	Identify the structures, especially of historic significance, within the 100-year flood zones in collaboration with state agencies including Watch Hill and Napatree which are both in the National Register of Historic Places.	Action 2023-2.1-C	
	Verify what evacuation routes are in place and that they are in fact navigable during various extreme weather events. Create a PSA Campaign to escalate awareness about preparedness, evacuation routes, and emergency protocols.	Actions 2023-1.1-B & 3.1-B	
	Develop Best Management Practices guide for all beach and coastal access point and work with community-based groups (i.e. Napatree Point Conservancy, etc.) to implement.	Action 2023-3.3-A	
	Continue to advocate for state bond funding during election year for open space protection and commercial recreation (OSCR) particularly for parcels that increase the overall resilience of the municipality.	Action 2023-2.2-B	
	Seek to develop a better process to determine the effectiveness and extend needed for mosquito spraying.	Action 2023-1.2-C	
	Publicize the opportunities to volunteer including the citizens emergency response team and develop ways to match interest and skills with options.	Action 2023-1.1-B	
	Continue to seek way to improve the water quality (i.e. stormwater runoff reduction) and navigability (i.e. dam removal) of the Pawcatuck River as well as Little Narragansett Bay.	Actions 2023-3.3-A & 4.2-A	
	Develop priority map for preservation of natural areas that are not currently protected and will enhance resilience across municipality.	Action 2023-4.1-A	
	Gather and/or conduct systematic studies of bridges and culverts across municipality, establish a 5-year infrastructure plan, and prioritize 4-5 immediate upgrades that are integrated into capital improvement budgets.	Actions 2023-3.1-A & 3.1-B	
	Increase awareness and outreach amongst residents and seasonal renters of stormwater management and green stormwater infrastructure options to minimize road and property flooding.	Action 2023-1.1-A	
	Need to conduct comprehensive study of where road raising is critical to maintain municipal functions and quality of life for residents.	Action 2023-3.1-B	
	Identify high impact areas for conversion of stormwater system to more natural or green stormwater infrastructure systems and drainage easements with integrated best management practices for maintenance and installation.	Action 2023-3.3-A	
	Increase coordination amongst the dozen or more conservation-orientated organization to elevate opportunities for open space protection and conservation efforts that increase resilience across municipality.	Action 2023-4.1-C	

Category	Possible Activity	2023 Action Plan	
		Included	Reason Not included
<b>Higher Priority</b>  Policy	Seek to address implications of seasonal denitrification flaws in privately-owned septic systems.		RIDEM jurisdiction
	Increase maintenance requirements on privately-owned septic systems to reduce poor management and failures.		RIDEM jurisdiction
	Implement zoning district for conservation as well as agricultural lands.	Action 2023-4.1-A	
	Continue to rewrite and establish aquifer protection regulations that take into account future growth and the implications of climate change (i.e. drought, heatwaves, etc.).		Completed
	Advance the establishment of wastewater management district in coastal areas with onsite wastewater treatment systems where pumping and inspections are required.		RIDEM jurisdiction
<b>Moderate Priority</b>  Capacity Building	Look to establish a network of neighborhood emergency coordinators to assist with local neighbor-helping-neighbor efforts and in person communications.	Action 2023-1.2-A	
<b>Moderate Priority</b>  Project	Look to improve stormwater management system by increasing storage, maintenance, and management which should include a more wholistic, upstream consideration of opportunity to reduce and retain runoff.	Action 2023-3.3-A	
	Continue to seek ways to minimize impacts of beaver dams at Westerly & Bradford Road.		Completed; beaver exclusion device installed
	Establish mobile food pantries and provisioning options for people in need after major events.		Outside project scope
	Ensure that medical facilities have back-up power for clients during times of crisis.	Action 2023-1.2-B	
	Improve the mapping of all culverts across municipality using new DOT tool.	Action 2023-1.1-B	
	Convert drinking water well pumps from fossil fuels to alternative fuel source.		Address in Energy Plan update
	More enforcement of stormwater management efforts and improved culvert clearing in Bradford area.	Action 2023-3.3-A	
	Improve the drainage at intersection of Route 78 and Route 1.	Action 2023-3.1-B	
	Conduct mechanical, electrical, and capital improvement studies to identify and prioritize improvements to wastewater treatment facility, water mains, and pipes.	Actions 2023-3.2-B & 3.2-D	
	Conduct improvement to Bridge and associated culverts before 2026.		Boombridge Road Bridge improvements completed in 2020
Prioritize and repair roads to reduce impacts from flooding on Atlantic Avenue, Bradford Avenue, Bradford Road, and Dunn's Corner.	Action 2023-3.1-B		

Category	Possible Activity	2023 Action Plan	
		Included	Reason Not included
<b>Moderate Priority</b>  Project	Complete mapping of stormwater infrastructure and evaluate maintenance and replacement/retrofit needs.	Action 2023-1.1-B	
	Remove river bed obstruction in the Pawcatuck River at Stillman Avenue.	Action 2023-4.2-A	
	Establish cooling centers in locations that will best serve low income and senior populations.	Action 2023-1.2-B	
	Look to ensure communications systems such as Reverse 911 are not limited to cell phones.		Completed
	Continue to conduct tree trimming and removal operations along transportation corridors.	Action 2023-3.4-B	
	Support routine and sustainable warming center for homeless population.	Action 2023-1.2-B	
	Ensure Johnny Cake center [local food pantry} remains funded.	Action 2023-1.2-B	
	Plant more street tree to improve aesthetics, reduce heat, and improve air quality.	Action 2023-1.3-A	
	Install residential rain garden demonstration project with disconnected downspout to help educate residents and landlords along with a tour for projects.	Action 2023-1.1-A	
<b>Moderate Priority</b>  Plans, Preparedness, Studies, Outreach	Continue and potentially expand educational outreach to community members on proper practices to reduce pollutants associated with stormwater runoff ( ex. Save the Bay).	Action 2023-1.1-A	
	Look to increase the number of community response and help centers for heating, cooling, and charging.		No evidence that existing emerg. centers are inadequate
	Consider options to make the food pantry more resilient and able to serve the needs of vulnerable populations on a routine basis as well as after major events including establishing satellite distribution points and having an MOU with the senior center.	Action 2023-1.2-B	
	For Little Narragansett Bay, establish the conservation protocol and vision for ecological resilience in partnership with state agencies.	Action 2023-4.1-A	
	Increase emergency response and recovery coordination amongst community facilities and services.	Action 2023-1.2-A	
	Conduct watershed-wide evaluation for all watersheds in Westerly to better understand, identify, and prioritize opportunities for impervious cover reduction using green infrastructure.		Economically not feasible in near-term
	Continue to conduct education of residents on emergency protocols.	Action 2023-1.1-B	
	Identify options to use open space recreation sites for flood and stormwater storage (i.e. Gingerella Sports Complex, Rotary Park, etc.).	Action 2023-3.3-A	
Revisit available engineering studies regarding culvert impairments and replacement/retrofit needs across municipality.	Actions 2023-3.1-B & 3.3-A		

Category	Possible Activity	2023 Action Plan	
		Included	Reason Not included
<b>Moderate Priority</b>  Plans, Preparedness, Studies, Outreach	Develop Pawcatuck River Greenway that would accelerate improvement to water quality standards, expand studies and testing of the entire river and bay, and establish added layers of protection for the resource.	Action 2023-4.3-C	
	Establish an evacuation plan for the Warm Center.		Outside project scope
	To help minimize the impacts of flooding to residential units in floodplains, upgrade failing culverts, execute longer-term zoning changes, install bioswales and/or other green stormwater infrastructure, and institute other LID practices.	Action 2023-3.3-A	
	Conduct comprehensive assessment of engineering studies of road elevation options to reduce flooding issues with a particular focus on Atlantic Avenue, Causeway Street, Weekapaug Road, and Winnapaug Road.	Action 2023-3.1-B	
	Encourage residents, renters, and tourists in the Bradford area to evacuate in advance of events that would cut off areas.	Action 2023-1.1-B	
	Develop Forest Management Plan for municipality.	Action 2023-4.1-A	
	Identify location and ownership of historic assets that may be lost as well as historic assets that may be movable during extreme weather events.	Action 2023-2.1-C	
	Follow CRMC guidelines and SAMP to conserve natural beach barrier.	Action 2023-4.3-C	
	Convene stakeholders associated with salt ponds for visioning exercise to determine the future of this resource given climate change.		Outside project scope
	Development of the Urban Coastal Greenway Program along the Pawcatuck River (i.e. pilot program used by future Cinder Restaurant) and greening of Main Street.	Action 2023-4.3-C	
	Look to reduce reliance on natural gas and fossil fuels and educate public on choices and alternative energy resource options and look at state options with OER.		Address in Energy Plan update
	Work with Utility to increase the rate of power line hardening in areas experiencing high winds along critical distribution corridors.	Action 2023-3.4-B	
	Accelerate voluntary buyouts of severe and repetitive loss properties.		Economically not feasible in near-term
	Conduct educational program in schools to reduce water consumption and increase efficient use of water in the home.	Action 2023-1.1-A	
	Look to expand the Coastal Barrier Resource System (CBRS) zone along coastline in areas that should not be developed or redeveloped due to high level of risk and exposure.		FEMA jurisdiction
	Identify organization to serve as conduit for resiliency education for business to help minimize interruption and increase continuity.	Action 2023-1.1-B	
	Discuss ways to preserve and sustain the historic downtowns ( e.g. Watch Hill, etc.) in balance with maintaining the natural resources and beauty that drives the economy.	Action 2023-2.1-C	
	Develop forest health and management plans with funding currently available through conservation districts.	Action 2023-4.2-B	

Category	Possible Activity	2023 Action Plan	
		Included	Reason Not included
<b>Moderate Priority</b>  Plans, Preparedness, Studies, Outreach	Continue to conduct outreach and education for residents and seasonal renters of the importance of nature infrastructure to reduce impacts of climate change and proper chemical use on lawns, and water use limitations.	Action 2023-1.1-A	
	Comprehensively consider the implications of coastal flooding and sea level rise in the Misquamicut community including options such as infrastructure relocation, shuttles from common parking areas, less permanent and portable structures, and restrictions in tourist/rental seasons.	Action 2023-4.3-B	
<b>Moderate Priority</b>  Policy	Enhance LID regulations and improve enforcement in proximity to freshwater resources in municipality (i.e. Chapman Pond).	Action 2023-4.3-A	
	Create restrictive areas or zones for rebuilding after storm events that are integrated into locally-tailored recovery plans.	Action 2023-4.3-B	
	Explore incentives for mobile business models and approaches to enable safe relocation during major events.	Action 2023-4.3-B	
	Amend and update the Aquifer Protection Overlay District to ensure consideration of climate change (i.e. extended drought and heatwaves) are built into the protection of this resource.		Ordinance amended in 2021
<b>Lower Priority</b>  Projects	Continue to monitor and seek to stabilize Town Beach Pavilion over time.	Action 2023-2.1-D	
	Relocate the National Historic Landmark Carousel to higher ground.		Economic and logistical constraints
	Continue to prune and remove limbs and trees where needed to ensure continuity of power during and after major events.		RI Energy jurisdiction
	Assess and inspect the condition and potential deterioration of existing bridges including the use of sensors or monitoring devices.	Action 2023-3.1-A	
	Purchase more land for protection of aquifer.	Action 2023-4.1-C	
	Install generator at Library and Park.		Westerly Library & Wilcox Park jurisdiction
	Ensure all schools have emergency generators.	Action 2023-1.2-B	
	Address flooding on road entering DPW complex.		Completed
	Incorporate emergency generator to the Senior Center renovations to increase options for temporary sheltering.		Completed
<b>Lower Priority</b>  Plans, Preparedness, Studies, Outreach	Consider dredging ponds nearby Atlantic Avenue to reduce overall flooding during major events.	Action 2023-4.2-C	
	Educate residents and tourists about risks of flooding on roadways and the need to avoid standing water (i.e. Atlantic Avenue).	Action 2023-1.1-A	
	Protect, celebrate, and strengthen historic areas, Watch Hill, and downtown area.	Action 2023-2.1-C	

Category	Possible Activity	2023 Action Plan	
		Included	Reason Not included
<b>Lower Priority</b>  Plans, Preparedness, Studies, Outreach	Secure and review state flyover imagery to locate wetlands of importance and sensitive environmental areas that may have been impacted as well as more accurately and routinely track changes in land use and land cover.		Not economically feasible in near-term
	Continue to ensure the Hospital is fully functional and ready via table top exercises and that that the access routes are maintained and clear of debris.	Action 2023-1.2-B	
	Explore longer-term option for greater resiliency and access at Town's Animal Shelter.	Action 2023-1.2-B	
	Seek to enhance long-term viability of barrier beaches through natural formation/erosion, replenishment when and where needed, limitations on development, and restoration of sea grass beds.	Action 2023-4.1-D	
	Encourage management to develop evacuation plan for Avondale nursing home.		Private facility
	Develop an emergency action plan for marinas and anchorages that would include protocols for moving boats away from marinas when storing to reduce risk from flooding and major events.	Action 2023-1.1-B	
	Improve understanding of bridge closure protocol and weight limits of various bridges that would preclude the use by emergency management vehicles.		RIDOT jurisdiction
	Establish inventory of all sea walls across coast in municipality and identify appropriate locations for living shorelines or non-structural approaches to increase stabilization and reduce erosion.	Actions 2023-2.1-D & 4.2-D	
	Identify alternative heating sources for residences and businesses in municipality.		Private utilities
	Seek out or create grant opportunities to elevate homes owned in low income neighborhoods.	Action 2023-4.3-D	
	Explore the potential use of floating docks in Marinas to help reduce the impacts of storm surge.		Not Town-owned property
Develop plan for temporary operations and debris pickup along with providing containers for use during flood clean-up.	Action 2023-2.1-D		

## Westerly Route 1 Corridor Report (2022)

Possible Activity		2023 Action Plan	
		Included	Reason Not included
<b>Infrastructure in the Corridor</b>			
Stormwater	Work with RIDOT and conduct an inventory and analysis of the existing stormwater infrastructure in the Corridor and its condition, and either disconnect or pretreat stormwater prior to conveyance.	Action 2023-3.1-B	
	Revise stormwater management and site development regulations to require green infrastructure and reduce the amount of impervious surface in all new private and public projects.	Action 2023-3.3-A	
	Implement a program of incentives for green infrastructure and reduction in the amount of impervious surface at existing uses and as part of redevelopment.	Action 2023-3.3-A	
	Develop a database of grant funding options for plan, design and construction of green infrastructure and publish it on the Town website.	Action 2023-2.2-A	
	Analyze the potential value of developing a public or private stormwater utility.		Outside project scope
Water Supply	Develop a water conservation program that is specifically aimed at businesses.	Action 2023-1.1-A	
	Protect groundwater through use of appropriate stormwater and wastewater management.	Actions 2023-3.2-A & 3.3-A	
	Plan, design and permit improvements and extension of water service as needed including capital funding as part of an update to the Westerly Water Supply Management Plan.	Action 2023-3.2-D	
	Construct improvements and extension of water service as needed.	Action 2023-3.2-D	
Undergrounding Cabling and Electrical Infrastructure	Develop a plan for undergrounding utility lines along the Route One Corridor.		Route 1 not a high hazard area
	Amend the zoning ordinance and development regulations and use the site planning processes to require underground utility lines as part of development proposals.	Action 2023-3.4-B	
	Develop an undergrounding process with the utility companies.		Outside project scope

## Harbor Management Plan (2016-Revised 2019)

Possible Activity	2023 Action Plan	
	Included	Reason Not included
<b>Natural Resources - Little Narragansett Bay- Transient Anchorage Area</b>		
a. Education for the public- signage for the conservation area of Napatree beach and Sandy Point.		Not Town-owned property
b. Protect shallows, wetlands, eelgrass beds, dunes and beach nesting areas.	Action 2023-4.1-D	
c. Establish setbacks and buffer zones where appropriate, allowing for seasonal changes. these shall be mapped and established by CRMC in conjunction with U.S. Fish and Wildlife.		CRMC & USF&W jurisdiction
<b>The Beaches</b>		
B. Protect shallows, wetlands, eelgrass areas and dunes.	Action 2023-4.1-D	
C. Maintain signs for public education regarding litter and Town ordinances.	Action 2023-1.1-A	
E. Establish dune restoration for all barrier beaches.	Action 2023-4.1-D	

## Wood-Pawtucket Watershed Flood Resiliency Management Plan (2017)

Category	Possible Activity	2023 Action Plan	
		Included	Reason Not included
River Corridor	<p>A detailed geomorphic assessment was performed for approximately 40 miles of rivers and streams in the watershed. Based on the results of the geomorphic assessment, river corridor planning recommendations were developed to identify restoration projects that will reduce flood hazards and downstream sediment loading and improve aquatic habitat.</p> <ul style="list-style-type: none"> <li>• Remove berm on left bank to restore floodplain connection and reduce flood impacts Downstream of Bradford Dam; (Downstream of Boom Bridge to top of former White Rock Dam impoundment – Paw. River)</li> <li>• Install instream structures to narrow channel, sort and store sediment, and provide cover for aquatic organisms (Downstream of Potter Hill Dam in Ashaway - Pawcatuck River)</li> <li>• Install riparian plantings on right bank near gravel pit to slow or halt bank erosion (At former location of White Rock Dam to Route 78 Bridge - Pawcatuck River)</li> </ul>	Action 2023-2.1-D	

Category	Possible Activity	2023 Action Plan	
		Included	Reason Not included
Road Stream Crossings	<p>Some of the Town’s road/stream crossings are hydraulically undersized, have high geomorphic vulnerability, have high flood impact potential, and/or limit or restrict aquatic passage. Recommendations include:</p> <ul style="list-style-type: none"> <li>• Replace and upgrade priority crossings to meet flood resilience and aquatic organism passage (AOP) goals: <ul style="list-style-type: none"> <li>➢ Priority Crossings: Forrestal Drive (32” Concrete Circular Conduit); Westerly-Bradford Road (24” CMP Circular Conduit); Broad Street (74’W x 14.5’H Concrete Bridge); Potter Hill Road (6” CMP Circular Conduit); White Rock Road (Triple 24” Concrete Circular Conduit); Ross Hill Road (12” CMP Circular Conduit); Hiscox Road (32” Concrete Circular Conduit); Spring Brook Road (1.5’H x 5’W Stone Masonry Box Culvert); Boom Bridge Road (3’H x 2.5’W Stone Masonry Arched Conduit); and Stillman Avenue (11’H x 117”W Concrete Bridge)</li> </ul> </li> <li>• Consider other upstream and downstream crossings and dams on the same river system</li> <li>• In general, replace downstream crossings first</li> <li>• Perform site-specific data collection, geotechnical evaluation, hydrologic and hydraulic evaluation, and structure type evaluation to support design</li> </ul>	Action 2023-3.1-B	
Dams	<p>Removal of Potter Hill Dam is considered a high priority; the other two dams are deteriorating or in disrepair, but considered low priority dams</p> <p><i>Please Note: Whether to remove or make improvements to the Potter Hill Dam is an ongoing issue as the Town gathers and reviews technical data. Action 2023-4.2-A is a general action related to all five dams in Westerly.</i></p> <p><b>Potter Hill Dam (Pawcatuck River)</b></p> <ul style="list-style-type: none"> <li>• The dam has an AOP structure, but previous studies indicate removal would be the most effective long term solution for flood resiliency; currently, barriers to removal exist</li> <li>• Failure could potentially impact Stillman Avenue and Route 1 bridges</li> <li>• Owner is currently in discussions with RIDEM to purchase the dam</li> </ul> <p><b>Stillmanville Dam (Pawcatuck River)</b></p> <ul style="list-style-type: none"> <li>• The concrete structure does not prevent fish passage or significantly impact flow regime</li> <li>• Consider removal for river restoration benefits</li> </ul> <p><b>Olaf Farm Pond Dam (Cedar Swamp Brook)</b></p> <ul style="list-style-type: none"> <li>• Repairs are recommended at this dam, including removal of dense vegetation and repair of erosion</li> <li>• The owner is currently maintaining the dam and wishes to maintain the impoundment</li> <li>• If the owner would agree to removal in the future, removal should be considered</li> </ul>	Action 2023-4.2-A	
Green Infrastructure	<p>When applied throughout the watershed, GI can help mitigate flood risk resulting from outdated and undersized storm drainage systems and increase flood resiliency, as well as improve water quality. Sites Identified for GI retrofits include:</p> <ul style="list-style-type: none"> <li>• Grace United Methodist Church (Bioretention adjacent to parking lot)</li> <li>• Bradford School (Underground infiltration and green roof demonstration project)</li> </ul>	Action 2023-3.3-A	

Category	Possible Activity	2023 Action Plan	
		Included	Reason Not included
Green Infrastructure continued	<ul style="list-style-type: none"> <li>State Street School (Bioretention and rain gardens)</li> <li>Westerly High School (Underground infiltration under parking area)</li> <li>Tower Street School and Community Center (Bioretention along parking area perimeter)</li> </ul>		
Land Use Policy and Regulations	<p>Municipal land use policies and regulations can help communities become more resilient to flooding by preserving undeveloped land, siting development in locations less vulnerable to flooding, and promoting designs that reduce runoff and are less likely to be damaged in a flood. A review was conducted of the land use policies, plans, and regulations of the watershed municipalities. Key recommendations of this review include:</p> <ul style="list-style-type: none"> <li>Consider developing a coastal resiliency plan to better protect public infrastructure from coastal flooding and sea level rise</li> <li>Consider adopting a No Adverse Impact (NAI) Floodplain Management policy</li> <li>Amend zoning ordinance to strengthen flood management standards</li> <li>Consider implementing fluvial erosion hazard zoning to address riverine erosion hazards</li> <li>Amend street and parking lot design standards to reduce impervious cover and remove barriers to LID</li> <li>Update design storm precipitation amounts</li> <li>Implement road stream crossing standards for new and replacement culverts and bridges</li> <li>Reference the Wood-Pawcatuck Flood Resiliency Management Plan in municipal planning documents</li> </ul>	<p>Actions 2023-3.1-A, 4.3-A, 4.3-B, 4.3-C</p>	

## Wood-Pawcatuck Wild & Scenic Stewardship Plan (2018)

Category	Possible Activity	2023 Action Plan	
		Included	Reason Not included
Preserve and protect water quality and quantity	Address impaired waters	3.3-A & 4.1-B & 4.3-A	
	Protect riparian buffers	4.1-A & 4.1-C	
	Protect water flow	3.1-A & 3.1-B & 3.3-A & 4.2-A	
	Conserve land	4.1-A & 4.1-C & 4.3-C	
	Increase green canopy	3.3-A	
	Protect drainage	4.1-C	

Category	Possible Activity	2023 Action Plan	
		Included	Reason Not included
	Improve water quality	3.3-A & 4.1-B & 4.3-A	
	Practice bioretention	3.1-B & 4.3-A	
	Encourage best practices for property owners	1.1-A	
	Consider water in land use planning	4.3-A & 4.3-C	
Preserve and protect important high- and medium-yield aquifers	Promote aquifer protection	3.2-A	
	Conserve water	1.1-A	
	Encourage rainwater reuse	1.1-A	
	Preserve hydrology	3.3-A & 4.3-A	
Develop flood resiliency	Protect floodplains & wetlands	4.1-A & 4.1-C & 4.3-C	
	Mitigate flooding	3.1-B & 3.3-A & 4.2-A	

## Energy Management Plan (2016)

Possible Activity	2023 Action Plan	
	Included	Reason Not included
<b>Strategy 1:</b> Reduce energy usage and increase energy efficiency in Westerly owned municipal facilities.		
<b>Action 1.1:</b> Identify and implement energy efficiency opportunities in Town owned municipal facilities		Completed
<b>Action 1.2:</b> Implement retro-commissioning and control system upgrades for buildings that have DDC HVAC control systems and high energy use		New controls installed at Police Station; new HVAC design for Town Hall in-progress
<b>Action 1.3:</b> Purchase utility company owned street lighting and convert to high efficiency LED lighting		Completed
<b>Action 1.4:</b> Implement plug load controls and power management software solution for computer, peripherals and other plug loads		Address in Energy Plan update
<b>Strategy 2:</b> Utilize cost-effective renewable energy for Town and School electricity usage.		

Possible Activity	2023 Action Plan	
	Included	Reason Not included
<b>Action 2.1:</b> Participate in a shared renewable energy project for Town and School electricity accounts through a “Public Entity Net Metering Financing Arrangement”		Address in Energy Plan update
<b>Action 2.2:</b> Implement a solar renewable energy demonstration project at the Town Department of Public Works		Completed on DPW facility
<b>Strategy 3:</b> Utilize zero-emission electric vehicles when practical and reduce fleet fossil fuel usage.		
<b>Action 3.1:</b> Participate in the “Charge Up!- Rhode Island Public Sector Vehicle Electrification Program” to purchase one electric vehicle and install one electric charging station		Address in Energy Plan update
<b>Action 3.2:</b> Replace 25% of end of life light-duty vehicles with zero emission vehicles and remaining end of life vehicle replacements with fuel efficiency in top 20% of category	Action 2023-1.3-A	
<b>Action 3.3:</b> Provide vehicle idling reduction control systems on select Police, other emergency vehicles & Public Works		Address in Energy Plan update

## HM&FMP Public Opinion Survey (2022)

Category	Possible Activity	2023 Action Plan	
		Included	Reason Not included
<b>Climate Change</b>	<ul style="list-style-type: none"> <li>As a community, Westerly should do as much as it can to implement actions that take climate change into consideration.</li> <li>Do a deep dive and prepare a sea level rise preparedness plan.</li> <li>Adopt plans to deal with sea level change including provisions for retreating/removing/relocating infrastructure from these areas</li> </ul>	Action 2023-4.3-B	
<b>Dams</b>	<ul style="list-style-type: none"> <li>Remove obstructions at stillman Ave bridge</li> <li>As being done all over USA to drain flooded wetlands so they can absorb and release slowly storm floods, remove the dam at Potter Hill. Funds are available at no cost to the Town.</li> </ul>	Action 2023-4.2-A	
<b>Economic Planning</b>	<ul style="list-style-type: none"> <li>Develop short-term (18 mo.), intermediate-term (2 years), and long-term (5 years) hazard prevention and mitigation plan/s.</li> </ul>	Action 2023-2.1-A	
<b>Economic Recovery</b>	<ul style="list-style-type: none"> <li>Start funding a "rainy day" account now to deal with critical infrastructure needs that may arise later during hazard events. Ensure legislation is in place to prevent the funds from being raided for non-related uses.</li> </ul>	Action 2023-2.1-B	
<b>Emergency Management</b>	<ul style="list-style-type: none"> <li>Hold regular drills/practice plans involving government, EMS, FD, PD, hospital.</li> <li>Continue to have the superb first responder services that it does</li> <li>Rapid response team to clean up and repair the inevitable hurricane damage.</li> <li>Public safety plan post hurricane to prevent looting and fly by night contractors</li> <li>Ensure townsfolk have multiple locations to shelter in case of an emergency.</li> </ul>	Action 2023-1.1-B	

Category	Possible Activity	2023 Action Plan	
		Included	Reason Not included
<b>Emergency Management</b> continued	<ul style="list-style-type: none"> <li>Review and improve evacuation routes and ensure there are multiple routes available from primary areas in case one or more routes become impassable.</li> <li>Make efficient and practical evacuation plans where needed.</li> </ul>		
<b>Emergency Management</b>	<ul style="list-style-type: none"> <li>Consider implementing a paid full time emergency service for fire/rescue and ambulance.</li> </ul>		Fire Districts jurisdiction
<b>Extreme Heat</b>	<ul style="list-style-type: none"> <li>The Town should continue to diligently pursue opportunities to implement mitigation activities in the form of projects (ex. shade structures at public facilities)</li> </ul>	Action 2023-2.1-A	
<b>Flood-related Hazards</b>	<b>Erosion:</b>		
	<ul style="list-style-type: none"> <li>Assess the Town Beach Pavilion area erosion and address the need to potentially move the beach pavilion away from the shore.</li> <li>protect the beaches from erosion</li> <li>Regularly help with dune maintenance in public areas and also offer to help with the same on private property (bring in sand, plant beach grasses)</li> <li>Build a more resilient coastal area.</li> </ul>	Action 2023-4.2-C	
	<b>Seawalls/Flood Barriers:</b>		
	<ul style="list-style-type: none"> <li>Consider raising the bulkheads and coastal areas.</li> <li>Upgrade and make higher sea walls.</li> <li>Consider a surge gate between Osbrook Point and Watch Hill.</li> <li>Continue efforts to improve Watch Hill's protection from severe flooding. Seawall may need work. Holdredge parking lot and boaters lot are vulnerable.</li> <li>Reinforcing and increasing the sea wall in Watch Hill.</li> <li>Work with nature, not fight nature: implement projects that REMOVE vulnerable structures that require costly maintenance, favoring projects that build resiliency through nature-based solutions (EG living coastlines vs sea walls)</li> </ul>	Action 2023-2.1-D	
	<b>Stormwater Management:</b>		
	<ul style="list-style-type: none"> <li>Remove impervious surfaces, site buildings accordingly</li> <li>Better protection of pervious surface; address flooding</li> </ul>	Action 2023-4.3-C	
	<ul style="list-style-type: none"> <li>Work on flooding in the Breen Road area.</li> </ul>	Action 2023-3.1-B	
	<ul style="list-style-type: none"> <li>Address flooding happening now in WH and up the river to the Town.</li> </ul>	Action 2023-2.1-D	
	<ul style="list-style-type: none"> <li>Dredge anywhere necessary to mitigate possible flooding.</li> <li>Advocate/fund additional dredging of coastal salt ponds.</li> <li>enhance capacity of natural landscapes to absorb flooding and other weather related risks.</li> </ul>	Action 2023-4.2-C	
	<ul style="list-style-type: none"> <li>The storm drains should be better maintained/cleaned out</li> <li>The Town should continue to diligently pursue opportunities to implement mitigation activities in the form of projects (ex. stormwater management - including tree wells)</li> </ul>	Action 2023-3.3-A	
<ul style="list-style-type: none"> <li>Acquire property above and adjacent to the flood elevation/expected sea level rise boundaries to provide a perimeter of undeveloped land that may be of use later if coastal retreat becomes necessary.</li> </ul>	Action 2023-4.1-C		
<ul style="list-style-type: none"> <li>Long term plan for Main Street south, downtown and possibly bits of Wilcox Park.</li> </ul>	Action 2023-2.1-D		

Category	Possible Activity	2023 Action Plan	
		Included	Reason Not included
<b>Flood-related Hazards</b>  continued	<b>Restrict Structures in Flood Zones:</b> <ul style="list-style-type: none"> <li>• restrict building new waterfront structures since high tide is getting closer to Atlantic Ave and other water front streets.</li> <li>• Don't allow building/rebuilding flimsy structures right on a barrier beach.</li> <li>• Limit construction in vulnerable coastal zones.</li> <li>• Limit new construction especially on or near wetlands</li> <li>• Stop building/paving.</li> </ul>	Action 2023-4.3-B	
	<ul style="list-style-type: none"> <li>• Ban rebuilding in flood zones or along shoreline if property is severely damaged.</li> <li>• Move or protect critical infrastructure to ensure quick restoration of utilities, safety after a natural hazard.</li> <li>• Do not rebuild on natural hazard sites - let nature take its course. However, I do believe the beaches and shoreline need to be maintained (minus structures).</li> <li>• Minimize rebuilding of destroyed structures on coast; develop plans for coastal retreat</li> <li>• Develop a long-range policy of gradual retreat from the coastline and especially within flood zones.</li> <li>• Minimize rebuilding in barrier beach areas after storm disasters. There are beachfront properties that should not have been allowed to be rebuilt/repared after Sandy</li> <li>• Better regulate flood prone areas and possibly adopt regulations that prevent building and prevent REBUILDING in high hazard locations.</li> <li>• retreat from the coastline</li> <li>• Develop retreat plans with the state and federal government that allows for the purchase of properties in the Salt Pond and beach areas as well as areas along the river and little Narragansett Bay. Most of our coastal businesses and residences are seasonal and in areas we should not encourage development.</li> </ul>	Action 2023-4.3-B	
	<ul style="list-style-type: none"> <li>• enforce fema rules</li> <li>• enforce building codes. Do not develop areas at risk.</li> <li>• Enforce coastal construction standards for storm erosion prevention and mitigation</li> </ul>	Action 2023-4.3-D	
	<b>Wetlands/Steams:</b> <ul style="list-style-type: none"> <li>• Stop issuing permits for filling swamps/wetlands.</li> <li>• Quit allowing property owners to fill in wetlands.</li> <li>• Wetland preservation. Less concrete and asphalt on roads, parking lots and driveways</li> <li>• Promote the wetlands conservation.</li> <li>• Protect wetlands</li> <li>• Establish riparian buffers along streams and rivers.</li> </ul>	Action 2023-4.3-C	
	<b>Infrastructure</b> <ul style="list-style-type: none"> <li>• Bury the electric lines... build the bridge back over the tracks</li> <li>• Upgrade improvements to electric/gas infrastructure and water/sewer system.</li> <li>• Insure infrastructure is maintained and modernized.</li> <li>• Identify and assess high-risk town property and infrastructure.</li> </ul>	Actions 2023-3.2-D & 3.4-B	
	<b>Outreach &amp; Education</b> <ul style="list-style-type: none"> <li>• More public education - teaching students and the community about the science of climate change and sea level rise and how to take action in our homes and on our property to minimize the threat of natural hazards.</li> <li>• better public communication and awareness of hazards; Town Council to make it a priority</li> <li>• Include indigenous community members in the conversation. They will have unique and valuable perspectives and offer a number of necessary solutions.</li> </ul>	Action 2023-1.1-A	

Category	Possible Activity	2023 Action Plan	
		Included	Reason Not included
<b>Outreach &amp; Education</b> continued	<ul style="list-style-type: none"> <li>• Doing public outreach programs (meet and greets) with westerly emergency responders to help build trust in the community.</li> <li>• Improve emergency management program to educate the public and prepare emergency responders better.</li> <li>• Better Communication and public education</li> <li>• The Town should continue to diligently pursue opportunities to implement mitigation activities in the form of educational/outreach programs</li> </ul>		
<b>Policy</b>	<ul style="list-style-type: none"> <li>• Urge lawmakers to vote to support common sense environmental laws.</li> </ul>	Action 2023-2.2-B	
<b>Public Assistance</b>	<ul style="list-style-type: none"> <li>• Provide public assistance to those who are endangered by natural hazards.</li> </ul>		State/ Federal jurisdiction
<b>Public Services</b>	<ul style="list-style-type: none"> <li>• Ensure townsfolk have multiple locations to shelter in case of an emergency.</li> </ul>	Action 2023-1.2-B	
<b>Roads</b>	<ul style="list-style-type: none"> <li>• Make sure roads and highways are maintained</li> <li>• Raise Beach Street's roadbed elevation at this area [near Westerly Yacht Club] since it's a main egress thoroughfare.</li> <li>• Better care of the roads in general, most of them are pot hole city</li> </ul>	Action 2023-3.1-B	
<b>Sewer</b>	<ul style="list-style-type: none"> <li>• Put public sewers in the misquamicut fire district such that sewage is not released into the environment during storms.</li> <li>• Monitoring of waste/septic systems (put in public sewer system by the beach and wetlands)</li> <li>• Run sewer to areas prone to flooding.</li> </ul>		Technical & economic constraints
<b>Wind-related Hazards</b>	<ul style="list-style-type: none"> <li>• Advocate more tree trimming around power/cable lines.</li> </ul>	Action 2023-3.4-B	
	<ul style="list-style-type: none"> <li>• Institute a tree tax</li> </ul>		Contrary to Town tree planting goals for shade and stormwater absorption
<b>Winter-related Hazards</b>	<ul style="list-style-type: none"> <li>• have plows ready to go, have small Katz ready for sidewalk.</li> <li>• Stop salting unnecessarily.</li> <li>• Better plowing and winter maintenance of roads and sidewalks.</li> </ul>	Action 2023-1.1-B	
<b>Zoning and Land Use</b>	<ul style="list-style-type: none"> <li>• Quit allowing over development.</li> <li>• Quit giving variances for more house on lots.</li> <li>• Honor the Comprehensive Plan of 2020 regarding building, additions on existing properties, truly limit variances to existing properties, especially in high density areas to "least remedy...", follow zoning guidelines</li> <li>• Encourage more open space in overall development plan for municipality</li> <li>• The Town should continue to diligently pursue opportunities to implement mitigation activities in the form of policies (ex. protecting wetlands and floodplains)</li> </ul>	Action 2023-4.3-C	

# APPENDIX 6-2

## STAPLEE Analysis

---

# Appendix 6-2

## STAPLEE Analysis

In accordance with the *Disaster Mitigation Act 2000 (DMA)*, the Steering Committee undertook a process to prioritize actions for implementation in order to develop a realistic approach toward mitigating risks. Each of the actions reviewed received a priority score based upon a general set of criteria common to public administration officials and planners, known as STAPLEE. As indicated below, the acronym stands for Social, Technical, Administrative, Political, Legal, Economic, and Environmental. The STAPLEE method includes a general benefit-cost review as part of prioritizing actions.

### Rating Scale

Cost	0 = no/insignificant cost		-1 = minimal cost		-2 = moderate+ cost	
Benefit	4 = exceptional	3 = highly beneficial	2 = beneficial	1 = somewhat beneficial	0 = not beneficial	

### STAPLEE Criteria for Selecting Mitigation Measures

Category	Criteria
Social	Does the proposed project have (or can easily gain) the support and acceptance of the community and is it compatible with present and future community needs and values? Will the action cause social disruption? Does the proposed project benefit a critical facility/infrastructure? Is there public support both to implement and to maintain the project?
Technical	Is the proposed project technically feasible? How effective is the proposed project in avoiding or reducing future losses for the long term? Will it create more problems than it solves? Does it solve a problem or only a symptom?
Administrative	Can the community implement the action? Is there someone to coordinate and lead the effort? Is there sufficient funding, staff, and technical support available? Are there ongoing administrative requirements that need to be met?
Political	Will the proposed project comply with comprehensive plan and land use elements, zoning activities, transportation, environmental, flood zone, historical and other long-range plans? Is the action politically acceptable?
Legal	Will the proposed project comply with local, state, and federal regulations? Are the proper laws, ordinances, and resolutions in place to implement the proposed project? Are there potential legal consequences or is the proposed project likely to be challenged by stakeholders who may be negatively affected?
Environmental	Is the proposed project consistent with community environmental goals? Will the action need environmental regulatory approvals? Will it meet local and state regulatory requirements? Are endangered or threatened species likely to be affected?
Economic	How will this action affect the fiscal capability of the community? Has funding been secured for the proposed action? Does the action contribute to other community goals, such as capital improvements or economic development?

# Goal 1: Protect public health and safety against impacts of natural hazards.

**Policy 1.1:** Improve the community's awareness and capacity to reduce or adapt to impacts from natural hazards.

**Policy 1.2:** Provide services critical to the community's continued health, safety, and well-being, especially during hazard events and to vulnerable populations.

**Policy 1.3:** Reduce the municipality's contribution to climate change, which is a threat multiplier for natural hazards.

Description of Action	Cost/ Benefit	Social	Technical	Administrative	Political	Legal	Environmental	Economic	Total	Prioritization
<b>Educate the public (including the business community and students) regarding steps they can take to reduce the impact of all profiled hazards, and regarding hazard response resources.</b> This action includes education around stormwater management, pollution prevention/ water quality, water conservation/drought management, earthquakes, extreme heat, wildfire/brush fire prevention, hurricane and nor'easter awareness (flooding, high-winds, and snow events), and infectious diseases (tick- or mosquito-borne; and influenza or coronavirus).	Cost	-1	-2	-1	0	0	0	0	-4	15
	Benefit	4	2	2	2	2	4	3	19	
<b>Improve the Town's capacity to strategically plan for and operationalize more economic, social, ecological, and infrastructure resilience across the municipality.</b> This action includes educating decision makers, proactive policy making, cost/benefit discussions, fiscal analysis, assessing staff resources, and organized collaborative responses.	Cost	-1	-2	-2	0	-2	0	0	-7	15
	Benefit	4	4	3	4	3	1	3	22	
<b>Implement policies and programs to reduce the impacts of infectious diseases (tick- or mosquito-borne; and influenza or coronavirus).</b> This action includes reviewing and updating the Town's policies and programs for controlling the mosquito and tick populations, and preventing the spread of influenzas and coronaviruses. Infectious disease programming will primarily be focused on public education, but should also include procedures for dealing with outbreaks. The Town will install tick- and mosquito-borne disease warning signs at high risk Town properties and encourage local conservation groups to take similar action.	Cost	-2	-1	-1	-2	-1	-1	0	-8	10
	Benefit	4	3	3	3	1	0	4	18	
<b>Increase emergency response and recovery coordination amongst community facilities and services, and members of the public, through an emergency services network, CERT program, and local neighbor-helping-neighbor program.</b> Creating direct connections between the critical service organizations and the public, through defined networks, will help get resources to those in need quicker during natural disasters. Improved translation services for non-English speakers should also be provided at critical service facilities and municipal facilities.	Cost	0	0	-2	-1	-1	0	-1	-5	14
	Benefit	4	3	3	3	2	1	3	19	
<b>Support emergency centers and critical public service facilities (including warming and cooling centers, homeless shelters, food pantries, medical facilities, schools, and animal shelter) by continuing to coordinate with, fund, and recommend improvements (such as backup generators) and table-top exercises/drills, that will allow such facilities to operate during hazard events.</b> When locating new facilities, consider accessibility for senior and low-income populations.	Cost	-1	0	-1	-1	0	0	-2	-5	11
	Benefit	4	2	3	4	0	0	3	16	

Description of Action	Cost/ Benefit	Social	Technical	Administrative	Political	Legal	Environmental	Economic	Total	Prioritization
<b>Incorporate carbon reduction strategies in Town operations and facilities, through facility efficiency improvements, fleet replacement, tree planting, and review of capital improvement requests.</b> This action includes updating, maintaining and implementing the Town's Energy Plan to identify and prioritize efficiency improvements for Town and School buildings, planning for use of alternative energy sources and electric vehicles, and requiring new capital requests employ energy efficient technology.	Cost	-1	-2	-2	-1	0	0	-2	-8	<b>9</b>
	Benefit	1	4	2	2	1	4	3	17	
<b>Goal 2: Sustain a local economy that is resilient to natural and human-caused disasters.</b> <b>Policy 2.1:</b> Prepare for the occurrence and anticipate the impact of extreme weather events and develop mitigation policies and procedures that best reduce fiduciary risk and impact on the local economy. <b>Policy 2.2:</b> Reduce the burden of climate change impacts on municipal finances and the local and regional economies.										
<b>Develop an economic action plan for catastrophic events to ensure a foundation for rebuilding that sustains the local economy through the recovery process.</b>	Cost	-2	-2	-2	-2	-1	0	-2	-11	<b>7</b>
	Benefit	3	3	3	3	2	0	4	18	
<b>Create orderly and efficient provision of infrastructure facilities and services through long-range capital facilities planning that addresses long-term resiliency.</b> Capital planning should include short- and long-term provisions for hazard prevention and mitigation projects.	Cost	-1	-2	-2	0	-1	0	-2	-8	<b>14</b>
	Benefit	3	4	3	4	3	1	4	22	
<b>Protect the built environment, industrial, and retail district by planning for and mitigating inland and coastal flooding and erosion.</b> This action includes protecting the banks of the Pawcatuck River and coastal areas against erosion by maintaining existing seawalls and investigating the use of living shorelines and other non-structural means (such as dune restoration/reinforcement) to achieve stabilization and reduce flooding.	Cost	-2	-2	-2	-2	-1	-2	-2	-13	<b>5</b>
	Benefit	3	2	1	3	2	3	4	18	
<b>Establish and maintain a municipal register of areas and structures of historical or architectural significance, cemeteries and burial grounds, historical landscapes, and public art, especially in areas vulnerable to natural hazards and under threat of climate change impacts, and investigate resilient ways to preserve and sustain these resources which drive the local economy.</b> This action includes mitigating natural hazards like flooding and storm surge impacts to these historic and cultural features through resilient retrofits, relocation, and other means.	Cost	0	-2	-2	0	-1	0	-2	-7	<b>7</b>
	Benefit	3	2	2	3	0	0	4	14	
<b>Develop a database and strategy of grant funding options and collaborate in obtaining grant funding to support hazard mitigation projects, especially those identified in the Hazard Mitigation &amp; Flood Management Plan.</b>	Cost	0	-2	-2	0	0	0	0	-4	<b>14</b>
	Benefit	3	2	2	3	1	3	4	18	
<b>Work with relevant Federal and State agencies on shared objectives and guiding principles, such as those identified in Resilient Rhody to reduce the burden of climate change impacts on the local economy and municipal finances.</b>	Cost	0	-1	-1	0	0	0	-1	-3	<b>14</b>
	Benefit	3	2	2	3	0	3	4	17	
<b>Quantify the value of all property and resulting tax revenue that would be impacted by increased flooding, SLR, and storm events.</b>	Cost	0	-2	-1	0	-1	0	0	-4	<b>5</b>
	Benefit	1	3	1	1	1	0	2	9	

**Goal 3: Sustainable infrastructure will be in place to ensure water quality, efficient wastewater treatment, effective stormwater management, and efficient transportation and transmission of essential utilities in the face of natural hazards and climate change impacts.**

**Policy 3.1:** Ensure that the municipal transportation system, including but not limited to, roads, bridges, and culverts, effectively and resiliently meets the community’s needs.

**Policy 3.2:** Enhance the resiliency of Westerly’s drinking water and wastewater systems by developing programs and projects that improve maintenance and provide protection, redundancy, and resilient design.

**Policy 3.3:** Improve stormwater drainage treatment and conveyance systems.

**Policy 3.4:** Ensure transmission of essential private utilities (electric, gas, internet, cell services) is resilient to natural hazard impacts.

Description of Action	Cost/ Benefit	Social	Technical	Administrative	Political	Legal	Environmental	Economic	Total	Prioritization
<p><b>Assess, monitor, maintain, and plan for replacement/ upgrades of existing bridges and construction of potential new bridges to ensure resiliency in design, continued service during hazard events, and improvements to floodwater conveyance beneath.</b> This action includes coordination with surrounding municipalities and state and federal agencies with jurisdiction over shared bridges and watercourses, and financial planning for these actions within the Capital Improvement Plan (CIP). To ensure floodwater conveyance and resiliency are maximized in construction and replacement, the Town may propose ordinances requiring that all new bridges fully span watercourses to avoid adding structures within the channels, especially in the Pawcatuck River.</p>	Cost	0	-2	-2	0	0	0	-2	-6	11
	Benefit	2	3	3	1	1	4	3	17	
<p><b>Assess, monitor, maintain, and plan for replacement/ upgrades of existing roadways and associated drainage infrastructure (including culverts) to mitigate flooding and incorporate resilient designs to ensure continued service during hazard events.</b> The biggest threat to continued service of roadways during hazard events is flooding; thus, management of stormwater along roadway rights-of-way and consideration for elevating roadways is the primary focus of this action. Higher priority roadways include evacuation routes and roads servicing critical facilities and areas of dense development (residential and commercial). A comprehensive study of possible options for raising roadways, especially those that are subject to sea level rise and storm surge and are part of the Town’s evacuation routes (including Watch Hill Road, Winnapaug Road, and Weekapaug Road), should be undertaken. For culvert replacements, perform site-specific data collection, geotechnical evaluation, hydrologic and hydraulic evaluation, and structure type evaluation to support design, and replace downstream culverts first. This action requires coordination with the Rhode Island Department of Transportation (RIDOT) on State roadways and Coastal Resources Management Council (CRMC) on roadways in the vicinity of coastal features and waters.</p>	Cost	-1	-2	-2	-1	-1	0	-2	-9	11
	Benefit	3	3	3	3	2	3	3	20	

Description of Action	Cost/ Benefit	Social	Technical	Administrative	Political	Legal	Environmental	Economic	Total	Prioritization
<p><b>Improve reliability of water distribution infrastructure and Well Fields, especially during hazard events, through monitoring, maintenance, and short- and long-term planning for protection and upgrades to the systems.</b></p> <p>The purpose of this action is to improve the overall resilience and reliability of the systems, and reduce the likelihood of service disruption or contamination from storm events. This action includes monitoring, maintenance, and replacement/upgrading of existing infrastructure, including the berms constructed around well heads at White Rock #1 and #2. Short- and long-term planning, including financial planning through the CIP, for improvements, replacements, redundancy, and potential expansion of water service are also intended as part of this action.</p>	Cost	0	-1	-2	0	-1	0	-2	-6	<b>8</b>
	Benefit	2	3	2	1	2	2	2	14	
<p><b>Reduce or eliminate existing and potential risks to the public water system, ensuring both the quality and quantity of drinking water sources and their contributing areas.</b> This action includes: preparing a Source Water Protection Plan, protecting the aquifers from hazardous materials, pollution, and development stressors, growth management, including the cumulative effect of development on potential drinking water resources, and considering a private septic system monitoring program.</p>	Cost	0	-1	-2	0	-2	0	-1	-6	<b>16</b>
	Benefit	4	3	2	3	3	4	3	22	
<p><b>Protect, maintain, and ensure resiliency of pumping stations and wastewater treatment facility (WWTF) from flooding by implementing mitigation measures identified in WWTF Facilities Plan.</b></p>	Cost	0	-2	0	-1	-2	0	-2	-7	<b>14</b>
	Benefit	3	3	1	3	3	4	4	21	
<p><b>Study existing and projected effects of drought on local public health and safety, economic activity, and environmental resources in preparation for a drought response plan.</b></p>	Cost	0	-2	-1	0	0	0	-1	-4	<b>11</b>
	Benefit	2	2	1	2	2	3	2	15	
<p><b>Expand stormwater management capacity through monitoring, maintenance, and upgrade/retrofitting of existing systems and integration of green infrastructure and Low-Impact Development (LID) standards throughout Town.</b> This action includes identifying potential sites for new green infrastructure on Town-owned properties, and retrofitting of existing infrastructure (such as culverts and catch basins), to expand the capacity for stormwater management and treatment. This action also includes amending the Stormwater Management Ordinance (Chapter 260) to require green infrastructure (such as stormwater infiltration areas and rain gardens) and LID in public and private development.</p>	Cost	-1	-2	-2	-1	-1	0	-2	-9	<b>13</b>
	Benefit	3	4	2	3	2	4	4	22	
<p><b>Work with private developers and utility companies to mitigate the vulnerability of existing infrastructure, including burying above-ground infrastructure like electric and telecommunications systems, especially in high wind and ice hazard areas.</b> This action includes: working with utility companies to identify and prioritize existing infrastructure for resiliency improvements and improve maintenance activities like tree trimming; pursuing grant funding opportunities for the Town to improve the resiliency of above-ground utility infrastructure in high risk areas; as well as amending the zoning ordinance to require private developers to install new utilities underground.</p>	Cost	-1	-2	0	-1	-1	0	-1	-6	<b>7</b>
	Benefit	3	2	1	2	2	0	3	13	

Description of Action	Cost/ Benefit	Social	Technical	Administrative	Political	Legal	Environmental	Economic	Total	Prioritization
<b>Upgrade emergency services radio network to digital along with wireless infrastructure upgrades to reduce impacts of wind-related communication interruptions.</b>	Cost	0	-1	0	0	0	0	-2	-3	<b>8</b>
	Benefit	2	3	1	2	2	0	1	11	
<p><b>Goal 4: Enhance the capability of the natural environment to protect Westerly from flooding, storm surge and sea level rise.</b></p> <p><b>Policy 4.1:</b> Provide long-term conservation of natural resources, particularly in vulnerable areas of Westerly.</p> <p><b>Policy 4.2:</b> Ensure the sustainable use and management of natural resources.</p> <p><b>Policy 4.3:</b> Anticipate new development, redevelopment, structural elevations, and, as necessary, retreat from or management of coastal shorelines and riparian zones in especially vulnerable areas.</p>										
<b>Reduce Contamination from Textile Mills, Dye Plants, and Hazardous Materials Handlers.</b> Mitigate hazardous materials contamination resulting from textile mills, dye plants, and hazardous materials handlers located in flood zones and other sensitive natural habitats through environmental assessment, acquisition, remediation, and retrofitting sites. Identified sites include the Bradford Dye Association (BDA) site and the Potter Hill Mill site, and the Stillman Avenue Bridge.	Cost	0	-2	-1	0	-2	0	-2	-7	<b>16</b>
	Benefit	4	2	2	4	3	4	4	23	
<b>Collaborate with other influencers on the restoration of the barrier beaches and Salt Pond shoreline access to safeguard both natural and economic value.</b> This action is intended to include protection and restoration of barrier beaches and dunes, wetlands, eelgrass beds, and beach nesting areas through conservation, restoration projects including revegetation and beach nourishment, limitations on development, and protection of buffers.	Cost	-1	-1	-1	-1	-2	0	-2	-8	<b>12</b>
	Benefit	4	2	2	3	1	4	4	20	
<b>Develop a priority map and plan for the preservation of such natural areas across the municipality that are not currently protected and will enhance resilience.</b> The priority map shall include areas for future salt marsh advancement zones, floodplains, wetlands and watercourses, aquifers and high quality groundwater, barrier beaches and dunes, salt ponds, forest, agricultural land, and other natural resource areas. The plan for preservation may include policies regarding acquisition and sale of Town properties within these natural areas, implementing zoning districts for conservation and/or agricultural lands, and other preservation techniques.	Cost	0	-2	-1	0	0	0	-1	-4	<b>17</b>
	Benefit	3	3	2	3	2	4	4	21	
<b>Coordinate with the local land trusts, conservation organizations, state and federal agencies, and local property owners in the acquisition and maintenance of open space, especially in flood hazard areas, aquifers, coastal migration areas, and other natural resource areas (ex. agricultural land) to improve resiliency.</b>	Cost	0	0	-1	0	-1	0	-1	-3	<b>13</b>
	Benefit	3	0	0	3	2	4	4	16	
<b>Monitor and manage dam conditions to assess need for repair, reconstruction or removal and clarification of responsible parties.</b> This action includes removing/retrofitting Potter Hill Dam, coordinating with the private property owner to repair/remove Olaf Farm Pond Dam (Cedar Swamp Brook), and removing the Stillman Avenue Dam debris and other obstructions in the Pawcatuck River or its tributaries.	Cost	-1	-2	-1	-2	-2	0	-2	-10	<b>10</b>
	Benefit	3	3	2	2	3	4	3	20	

Description of Action	Cost/ Benefit	Social	Technical	Administrative	Political	Legal	Environmental	Economic	Total	Prioritization
<b>Maintain and manage Winnapaug Pond and western Quonochontaug Pond in an ecologically responsible manner and use soils for local salt marsh restoration and beach nourishment projects.</b>	Cost	0	-2	-1	0	-2	0	-1	-6	<b>9</b>
	Benefit	2	2	1	3	0	4	3	15	
<b>Develop an Environmental Management Plan for the municipality, addressing forest and open space, and management strategies to mitigate natural hazard impacts and improve resilience in our natural environment.</b> This plan would be developed in collaboration with local conservation agencies and address strategies to mitigate the impacts of forest fire, drought, invasive species, flooding, and other natural hazards on the natural environment.	Cost	0	-2	-2	0	0	0	-2	-6	<b>10</b>
	Benefit	2	3	2	2	0	4	3	16	
<b>Elevate Repetitive Loss Structures and enforce building code requirements and hazard mitigation strategies in flood hazard areas.</b> As grants become available, the Town will support property owner applications for FEMA funding assistance to address Repetitive and Severe Repetitive Loss properties, and other properties susceptible to flood inundation. The program criteria will be modified as needed throughout the life of this plan. The Building Office will continue to enforce the building code and NFIP requirements, and work with property owners in flood hazard areas to eliminate existing unsafe and non-compliant housing conditions, through hazard mitigation strategies.	Cost	-2	0	-2	-1	-2	0	0	-7	<b>7</b>
	Benefit	2	2	2	2	3	0	3	14	
<b>Amend the Zoning Ordinance and Land Development and Subdivision Regulations to ensure appropriate resiliency and environmental protection is incorporated in new private and public development and redevelopment, especially in vulnerable areas.</b> This action is intended to revise existing ordinances and create new ordinances with consideration for climate change and natural hazards in land use planning, with guidance from state and federal environmental agencies like Coastal Resources Management Council (CRMC), Department of Environmental Management (DEM), Federal Emergency Management Agency (FEMA), and U.S. Fish and Wildlife Service. Incorporation of agency guidance documents, like the Salt Pond Region and Beach SAMPs (Special Area Management Plans) from CRMC, into local regulations is also intended with this action. Ordinance amendments would address development in special flood hazard areas, coastal erosion zones, areas subject to sea level rise, and sensitive natural habitats, and seek to protect carbon sinks and increase green space, thereby reducing carbon emissions and related climate change stressors, and improving the quality of public spaces. Specific ordinances and regulations intended to be revised/ created include the Salt Pond Overlay District (Section 260-53), River Corridor Overlay District (Section 260-56), Land Development and Subdivision Regulations (particularly Article VI Design and Improvements Standards), and Floodplain Management (Chapter 127).	Cost	-1	-2	-2	-1	-2	0	-1	-9	<b>8</b>
	Benefit	1	3	2	1	3	4	3	17	

Description of Action	Cost/ Benefit	Social	Technical	Administrative	Political	Legal	Environmental	Economic	Total	Prioritization
<p><b>Comprehensively study existing and future land uses in coastal areas most vulnerable to sea level rise, storm surge, and coastal erosion, and, through robust public engagement (including local stakeholders such as conservation agencies, non-profit organizations, and the business community), evaluate alternatives to mitigate risk.</b> This action includes extensive public engagement to create and evaluate strategies to manage development in extremely vulnerable coastal areas, including within the Coastal Barrier Resource System (CBRS), and all areas directly exposed to the Atlantic Ocean (Misquamicut, Watch Hill, Weekapaug, etc.). Consideration may be given toward creating areas or zones where new development, and possibly redevelopment, is managed, and incentivizing the use of portable structures to allow for safe relocation during major hazard events. Consideration will also be given to areas of historic and/or architectural significance, such as Bay Street in Watch Hill, where a study is already underway, to ensure preservation is balanced with the need to mitigate risks from sea level rise.</p>	Cost	-2	-2	-2	-2	-2	0	-2	-12	9
	Benefit	2	4	3	2	2	4	4	21	
<p><b>Amend the Zoning Ordinance and Land Development and Subdivision Regulations to enhance Low-Impact Development (LID) design requirements, incorporation of green infrastructure and greenspace, and reduction in impervious surface, particularly in areas vulnerable to natural hazard areas.</b> This action is intended to promote LID development across the municipality to reduce solar heat conduction and wind velocities (by incorporation of vegetation and shade trees) and treat and reduce stormwater runoff, especially in coastal areas, floodplains, and other areas subject to flooding. Implementation of a large demonstration project on Main Street in Downtown Westerly is intended as a way to publicize the multi-faceted benefits of LID and green infrastructure and ease of implementation on private properties.</p>	Cost	0	-2	-2	0	-2	0	-1	-7	14
	Benefit	4	3	2	2	3	4	3	21	

# APPENDIX 7-1

## Local Mitigation Plan Review Tool

---

# LOCAL MITIGATION PLAN REVIEW TOOL - Final

**Jurisdiction Name & State: Town of Westerly, RI**

The *Local Mitigation Plan Review Tool* demonstrates how the Local Mitigation Plan meets the regulation in 44 CFR §201.6 and offers States and FEMA Mitigation Planners an opportunity to provide feedback to the community.

- The Regulation Checklist provides a summary of FEMA’s evaluation of whether the Plan has addressed all requirements.
- The Plan Assessment identifies the plan’s strengths as well as documents areas for future improvement.
- The Multi-jurisdiction Summary Sheet is an optional worksheet that can be used to document how each jurisdiction met the requirements of each Element of the Plan (Planning Process; Hazard Identification and Risk Assessment; Mitigation Strategy; Plan Review, Evaluation, and Implementation; and Plan Adoption).

The FEMA Mitigation Planner must reference this *Local Mitigation Plan Review Guide* when completing the *Local Mitigation Plan Review Tool*.

<b>Jurisdiction:</b> Town of Westerly, RI	<b>Title of Plan:</b> Town of Westerly 2023 Hazard Mitigation & Flood Management Plan	<b>Date of Plan:</b> February 2023
<b>Single or Multi-jurisdiction plan?</b> Single-jurisdiction		<b>New Plan or Plan Update?</b> Update
<b>Regional Point of Contact:</b> <b>Title:</b> <b>Agency/Address:</b> <b>Phone Number:</b> <b>E-Mail:</b>	<b>Local Point of Contact:</b> Alyse Oziolor, Principal Planner Town of Westerly, RI Town Hall 45 Broad Street Westerly, RI 02891 401-348-2550 <a href="mailto:aenziolor@westerlyri.gov">aoziolor@westerlyri.gov</a>	

<b>State Reviewer:</b> Rae-Anne Culp	<b>Title:</b> SHMO	<b>Date:</b> 3/13/2023
---	-----------------------	---------------------------

<b>FEMA Reviewer:</b> Alexis Meehan	<b>Title:</b> FEMA R1 Community Planner	<b>Date:</b> 3/21/2023
<b>Date Received in FEMA Region I</b>	3/13/2023	
<b>Plan Not Approved</b>		
<b>Plan Approvable Pending Adoption</b>	3/21/2023 (Plan was reviewed and determined to meet all the planning requirements including the signed adoption resolution that was included with the plan submittal. NO revisions were necessary; therefore, the plan was approved without sending an APA notice.)	
<b>Plan Approved</b>	<b>March 21, 2023</b>	

**SECTION 1:  
REGULATION CHECKLIST**

**INSTRUCTIONS:** The Regulation Checklist must be completed by FEMA. The purpose of the Checklist is to identify the location of relevant or applicable content in the Plan by Element/sub-element and to determine if each requirement has been ‘Met’ or ‘Not Met.’ The ‘Required Revisions’ summary at the bottom of each Element must be completed by FEMA to provide a clear explanation of the revisions that are required for plan approval. Required revisions must be explained for each plan sub-element that is ‘Not Met.’ Sub-elements should be referenced in each summary by using the appropriate numbers (A1, B3, etc.), where applicable. Requirements for each Element and sub-element are described in detail in this *Plan Review Guide* in Section 4, Regulation Checklist.

<b>1. REGULATION CHECKLIST</b>	<b>Location in Plan (section and/or page number)</b>	<b>Met</b>	<b>Not Met</b>
<b>Regulation (44 CFR 201.6 Local Mitigation Plans)</b>			
<b>ELEMENT A. PLANNING PROCESS</b>			
A1. Does the Plan document the planning process, including how it was prepared and who was involved in the process for each jurisdiction? (Requirement §201.6(c)(1))	Executive Summary (pg 1); Section 2 (pg 1-4, 6-11, 14); Section 7 (pg 4)	X	
A2. Does the Plan document an opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, agencies that have the authority to regulate development as well as other interests to be involved in the planning process? (Requirement §201.6(b)(2))	Executive Summary (pg 1 & 10); Section 2 (pg 1-4, 6-11, 14); Appendices 2-2 and 2-3; Section 7 (pg 2)	X	
A3. Does the Plan document how the public was involved in the planning process during the drafting stage? (Requirement §201.6(b)(1))	Executive Summary (pg 1, 10); Section 2 (pg 4-11, 14); Appendices 2-2 and 2-3; Section 7 (pg 2)	X	
A4. Does the Plan describe the review and incorporation of existing plans, studies, reports, and technical information? (Requirement §201.6(b)(3))	Executive Summary (pg 11); Section 2 (pg 2-14); Section 5 (pg 1-4, 10-19); Appendix 5-1; Section 6 (pg 3-5, 8, 10-24); Appendix 6-1; Section 7 (pg 3-4)	X	
A5. Is there discussion of how the community(ies) will continue public participation in the plan maintenance process? (Requirement §201.6(c)(4)(iii))	Section 1 (pg. 4) Section 7 (pg 4-6)	X	
A6. Is there a description of the method and schedule for keeping the plan current (monitoring, evaluating and updating the mitigation plan within a 5-year cycle)? (Requirement §201.6(c)(4)(i))	Section 7 (pg 3-6)	X	
<b>ELEMENT A: REQUIRED REVISIONS</b>			

<b>1. REGULATION CHECKLIST</b>		<b>Location in Plan</b> (section and/or page number)	<b>Met</b>	<b>Not Met</b>
<b>Regulation (44 CFR 201.6 Local Mitigation Plans)</b>				
<b>ELEMENT B. HAZARD IDENTIFICATION AND RISK ASSESSMENT</b>				
B1. Does the Plan include a description of the type, location, and extent of all natural hazards that can affect each jurisdiction(s)? (Requirement §201.6(c)(2)(i))	Section 4 (pg 16-85)	X		
B2. Does the Plan include information on previous occurrences of hazard events and on the probability of future hazard events for each jurisdiction? (Requirement §201.6(c)(2)(i))	Section 4 (pg 12-13, 16-85); Appendix 4-1	X		
B3. Is there a description of each identified hazard's impact on the community as well as an overall summary of the community's vulnerability for each jurisdiction? (Requirement §201.6(c)(2)(ii))	Section 4 (pg 14-15, 86-134); Appendices 4-1, 4-2, and 4-3	X		
B4. Does the Plan address NFIP insured structures within the jurisdiction that have been repetitively damaged by floods? (Requirement §201.6(c)(2)(ii))	Section 4 (pg 36, 101-102, 136)	X		
<b><u>ELEMENT B: REQUIRED REVISIONS</u></b>				
<b>ELEMENT C. MITIGATION STRATEGY</b>				
C1. Does the plan document each jurisdiction's existing authorities, policies, programs and resources and its ability to expand on and improve these existing policies and programs? (Requirement §201.6(c)(3))	Section 4 (pg 139-141); Section 5 (pg 1-9); Appendices 5-1, 5-2, and 5-3; Section 6 (pg 9-24)	X		
C2. Does the Plan address each jurisdiction's participation in the NFIP and continued compliance with NFIP requirements, as appropriate? (Requirement §201.6(c)(3)(ii))	Section 4 (pg. 100-102, 139); Section 6 (pg. 6, 24); Appendix 5-2	X		
C3. Does the Plan include goals to reduce/avoid long-term vulnerabilities to the identified hazards? (Requirement §201.6(c)(3)(i))	Executive Summary (pg 9); Section 6 (pg 2-3, 10-24)	X		
C4. Does the Plan identify and analyze a comprehensive range of specific mitigation actions and projects for each jurisdiction being considered to reduce the effects of hazards, with emphasis on new and existing buildings and infrastructure? (Requirement §201.6(c)(3)(ii))	Section 6 (pg 3-6, 10-24); Appendix 6-1	X		
C5. Does the Plan contain an action plan that describes how the actions identified will be prioritized (including cost benefit review), implemented, and administered by each jurisdiction? (Requirement §201.6(c)(3)(iv)); (Requirement §201.6(c)(3)(iii))	Section 6 (pg 3-24); Appendix 6-2	X		
C6. Does the Plan describe a process by which local governments will integrate the requirements of the mitigation plan into other planning mechanisms, such as comprehensive or capital improvement plans, when appropriate? (Requirement §201.6(c)(4)(ii))	Executive Summary (pg 11); Section 5 (pg 2-4); Appendix 5-1; Section 7 (pg 3-4, 6)	X		
<b><u>ELEMENT C: REQUIRED REVISIONS</u></b>				

<b>1. REGULATION CHECKLIST</b>		<b>Location in Plan (section and/or page number)</b>	<b>Met</b>	<b>Not Met</b>
<b>Regulation (44 CFR 201.6 Local Mitigation Plans)</b>				
<b>ELEMENT D. PLAN REVIEW, EVALUATION, AND IMPLEMENTATION</b> (applicable to plan updates only)				
D1. Was the plan revised to reflect changes in development? (Requirement §201.6(d)(3))	Section 4 (pg 135-141)	X		
D2. Was the plan revised to reflect progress in local mitigation efforts? (Requirement §201.6(d)(3))	Section 5 (pg 10-19); Appendix 6-1	X		
D3. Was the plan revised to reflect changes in priorities? (Requirement §201.6(d)(3))	Executive Summary (pg 9); Section 4 (pg 2-10); Section 5 (pg 2, 10-19); Section 6 (pg 1-6); Appendix 6-2	X		
<b><u>ELEMENT D: REQUIRED REVISIONS</u></b>				
<b>ELEMENT E. PLAN ADOPTION</b>				
E1. Does the Plan include documentation that the plan has been formally adopted by the governing body of the jurisdiction requesting approval? (Requirement §201.6(c)(5))	Executive Summary (pg 1, 10-11); Section 7 (pg 2-3); <b>Signed copy was validated, located in Appendix 7-2.</b>	X		
E2. For multi-jurisdictional plans, has each jurisdiction requesting approval of the plan documented formal plan adoption? (Requirement §201.6(c)(5))	This is a single jurisdiction plan.	N/A		
<b><u>ELEMENT E: REQUIRED REVISIONS</u></b>				
<b>ELEMENT F. ADDITIONAL STATE REQUIREMENTS (OPTIONAL FOR STATE REVIEWERS ONLY; NOT TO BE COMPLETED BY FEMA)</b>				
F1.				
F2.				
<b><u>ELEMENT F: REQUIRED REVISIONS</u></b>				

## SECTION 2: PLAN ASSESSMENT

### A. Plan Strengths and Opportunities for Improvement

This section provides a discussion of the strengths of the plan document and identifies areas where these could be improved beyond minimum requirements.

#### Element A: Planning Process

##### **Strengths:**

- The planning process is well documented and includes a detailed schedule of the vents and meetings that contributed to the development of the plan.
- A range of existing studies, reports, and plans were reviewed and incorporated, resulting in a plan that is comprehensive and current.
- Excellent public outreach efforts! Outreach activities were thorough and varied including a project webpage created on the Town's website, articles published in the local newspaper, The Westerly Sun, social media posts, email notices, radio broadcast to WBLQ radio programs and public service announcements, informational posters put up in 15 high pedestrian traffic areas, and a public opinion survey that garnered 204 responses that were used to help guide and focus mitigation planning efforts. Additionally, a public information meeting was held, the HM&FMP was included as agenda items for local boards, a presentation was presented during a Town Council meeting, and a public hearing was hosted by the Town Council. In the next update of the HM&FMP consider including a section in the narrative to address how underserved communities and vulnerable populations within the planning area were provided an opportunity to be involved to meet the requirements of the new Policy Guide effective April 19, 2023.
- An array of opportunities for continuing public engagement are identified. There is a discussion about how the planning team evaluated the previous version of the plan, as well as what changes were made based on the evaluation.
- The main body of the plan references the appendices, making it easy for the reader to locate attached materials. Great plan organization and clarity overall!

##### **Opportunities for Improvement:**

- In the next update of the Plan, consider including representative of nonprofit organizations, including community-based organizations, that work directly with and/or provide support to underserved communities and socially vulnerable population (ex. housing, healthcare, or social service agencies) and representatives of business, academia, and other private organizations (ex. private utilities or major employers that sustain community lifelines). Doing so will expand the types of concerns to address and the networks to engage and will strengthen the plan and its implementation as well as help meet the requirements of the new Policy Guide.
- Make it easier to keep the plan updated by creating set criteria for evaluation as well as a schedule for when and how evaluation will occur.

- Describe any limitations in the available data. Identifying limitations will help inform plan updates and help identify the need for additional studies.

### **Element B: Hazard Identification and Risk Assessment**

#### ***Strengths:***

- Hazard profiles are well-defined, with details information about the context of the hazard and the risk it presents to the community.
- The plan does an excellent job of identifying how the probability or severity of future hazard events may change in the future due to changes in climate. Section 4.1.1 addresses climate change as a long-term alternation of temperature and typical weather patterns in place. The plan considers local impacts of climate change and specifically how it effects sea level rise. Climate change impacts are also discussed in the context of each hazard profile. This is a great foundation for future updates in which “probability must include the effects of future conditions, including climate changes (e.g., long-term weather patterns, average temperature and sea levels), on the type, location and range of anticipated intensities of identified hazards” to meet the requirements of the new Policy Guide.
- History of hazards is extensive and provides an understanding of the extent and impacts of previous events, previous hazard occurrence tables cover over 20 years of data and significant historical hazard events are covered in the narrative description of the hazard profiles, where applicable.
- Excellent use of mapping for highlighting the areas and facilities that are most at risk, maps clearly show the planning area and hazard risks/vulnerabilities.
- The plan incorporates 500-year floodplain data into the flood profile. While not regulatory, the 500-year data is a great planning tool for future development.

#### ***Opportunities for Improvement:***

- The location subsection of certain hazard profiles (Thunderstorms including Lightning and Hail) could be expanded upon. The entire town can be vulnerable but are there parts of the Town that are more at risk? Ex. downed trees along main roads, older structures, etc.
- Identify dams in upstream communities that may post a risk to neighborhoods and assets.
- In Appendix 2-2, it was brought up that an NRCS-funded Wood-Pawcatuck Watershed Study is currently underway that includes an assessment of that area of Westerly. In future updates incorporating existing watershed studies into the risk assessment would be beneficial.

### **Element C: Mitigation Strategy**

#### ***Strengths:***

- The plan provides a comprehensive, detailed description of the community’s existing programs, plans, and policies that relate to mitigation. These existing capabilities were evaluated for how they could be expanded and further reduce risk.
- The plan’s goals and mitigation actions are integrated with other community planning efforts.

- The plan includes specific, targeted mitigation actions that address the community’s key vulnerabilities. Actions are detailed with information on funding, resources, timeframes, and responsible personnel.
- The plan indicates that STAPLEE method was used to prioritize proposed mitigation actions.
- The plan includes a variety of different types of mitigation actions (local plans and regulations, structure and infrastructure projects, natural system protections, and education and awareness programs).

***Opportunities for Improvement:***

- Provide more details about the costs and benefits of each mitigation action. Consider providing a cost estimate as well as describing the different factors.
- Ensure that the criteria used to prioritize mitigation actions considers the community’s most significant vulnerabilities.
- Include mitigation projects that would be possible if additional funding becomes available, such as during long-term recovery from a major disaster.

**Element D: Plan Update, Evaluation, and Implementation (*Plan Updates Only*)**

***Strengths:***

- The plan connects changes in development directly to changes in risk.
- The plan clearly describes the community’s development changes since the last update as well as a projection of planned and/or potential future development.
- Progress on mitigation actions is clear and comprehensive.
- The establishment of priorities is based on a set of standardized criteria, such as STAPLEE.
- Priorities in the plan recognize current conditions. They are reflective of the planning process, risk assessment, and mitigation strategy.

***Opportunities for Improvement:***

- Notify FEMA upon completion of flood control structure, or other development that changes the Special Flood Hazard Area or the Base Flood Elevation, as per 44 CFR 65.3.
- Describe general land use changes in neighboring jurisdictions that may affect the community’s risk.
- Include a discussion of lessons learned about implementing mitigation actions would strengthen the plan, as would a short narrative on some “success stories” about their implementation.

## B. Resources for Implementing Your Approved Plan

Refer to the [State Hazard Mitigation Plan](#) to learn about hazards relevant to Rhode Island and the state's action plan.

### Technical Assistance:

#### FEMA

- [FEMA Climate Change](#): Provides resources that address climate change.
- [FEMA Library](#): FEMA publications can be downloaded from the library website. These resources may be especially useful in public information and outreach programs. Topics include building and construction techniques, NFIP policies, and integrating historic preservation and cultural resource protection with mitigation.
- [FEMA RiskMAP](#): Technical assistance is available through RiskMAP to assist communities in identifying, selecting, and implementing activities to support mitigation planning and risk reduction. Attend RiskMAP discovery meetings that may be scheduled in the state, especially any in neighboring communities with shared watersheds boundaries.

#### Other Federal

- [EPA Resilience and Adaptation in New England \(RAINE\)](#): A collection of vulnerability, resilience and adaptation reports, plans, and webpages at the state, regional, and community levels. Communities can use the RAINE database to learn from nearby communities about building resiliency and adapting to climate change.
- [EPA Soak Up the Rain](#): Soak Up the Rain is a public outreach campaign focused on stormwater quality and flooding. The website contains helpful resources for public outreach and easy implementation projects for individuals and communities.
- [NOAA C-CAP Land Cover Atlas](#): This interactive mapping tool allows communities to see their land uses, how they have changed over time, and what impact those changes may be having on resilience.
- [NOAA Sea Grant](#): Sea Grant's mission is to provide integrated research, communication, education, extension and legal programs to coastal communities that lead to the responsible use of the nation's ocean, coastal and Great Lakes resources through informed personal, policy and management decisions. Examples of the resources available help communities plan, adapt, and recovery are the Community Resilience Map of Projects and the National Sea Grant Resilience Toolkit
- [NOAA Sea Level Rise Viewer](#) and [Union for Concerned Scientists Inundation Mapper](#): These interactive mapping tools help coastal communities understand how their hazard risks may be changing. The "Preparing for Impacts" section of the inundation mapper addresses policy responses to protect communities.
- [NOAA U.S. Climate Resilience Toolkit](#): This resource provides scientific tools, information, and expertise to help manage climate-related risks and improve resilience to extreme events. The "[Steps to Resilience](#)" tool may be especially helpful in mitigation planning and implementation.

#### State

- Rhode Island Departments of [Climate Change](#) and [Environmental Management](#) can provide technical assistance and resources to communities seeking to implement their hazard mitigation plans.

- [Rhode Island Emergency Management Agency](#): The Rhode Island State Hazard Mitigation Officer (SHMO) and State Mitigation Planner(s) can provide guidance regarding grants, technical assistance, available publications, and training opportunities.
- [RI Mapping Portal](#): GIS data available to download

#### Not for Profit

- [Kresge Foundation Online Library](#): Reports and documents on increasing urban resilience, among other topics.
- [Naturally Resilient Communities](#): A collaboration of organizations put together this guide to nature-based solutions and case studies so that communities can learn which nature-based solutions can work for them.
- [Rockefeller Foundation Resilient Cities](#): Helping cities, organizations, and communities better prepare for, respond to, and transform from disruption.

#### Funding Sources:

- [Grants.gov](#): Lists of grant opportunities from federal agencies (HUD, DOT/FHWA, EPA, etc.) to support rural development, sustainable communities and smart growth, climate change and adaptation, historic preservation, risk analyses, wildfire mitigation, conservation, Federal Highways pilot projects, etc.
- [FEMA Hazard Mitigation Assistance](#) (HMA): FEMA’s Hazard Mitigation Assistance provides funding for projects under the Hazard Mitigation Grant Program (HMGP), Pre-Disaster Mitigation (PDM), and Flood Mitigation Assistance (FMA). States, federally recognized tribes, local governments, and some not for profit organizations are eligible applicants.
- [GrantWatch](#): The website posts current foundation, local, state, and federal grants on one website, making it easy to consider a variety of sources for grants, guidance, and partnerships. Grants listed include The Partnership for Resilient Communities, the Institute for Sustainable Communities, the Rockefeller Foundation Resilience, The Nature Conservancy, The Kresge Climate-Resilient Initiative, the Threshold Foundation’s Thriving Resilient Communities funding, the RAND Corporation, and ICLEI Local Governments for Sustainability.
- [Rhode Island Department of Environmental Management](#): Funding for a variety of types of projects that will increase the resilience of local communities, including Local Open Space Grants.
- [Rhode Island Emergency Management Agency](#): The State of Rhode Island administers FEMA HMA grants. Communities are encouraged to work with the State to maximize use of every 406 Hazard Mitigation opportunity when available during federally declared disasters.
- USDA [Natural Resource Conservation Service](#) (NRCS) and [Rural Development Grants](#): NRCS provides conservation technical assistance, financial assistance, and conservation innovation grants. USDA Rural Development operates over fifty financial assistance programs for a variety of rural applications.

# APPENDIX 7-2

## Westerly Town Council Resolution

---

# Appendix 7-2

## Westerly Town Council Resolution

22/23-46

### RESOLUTION ADOPTING THE TOWN OF WESTERLY 2023 HAZARD MITIGATION & FLOOD MANAGEMENT PLAN (HM&FMP)

WHEREAS, the Westerly Town Council recognizes the threat that natural hazards pose to people and property within our community; and

WHEREAS, pro-active mitigation of known hazards before a disaster event can reduce or eliminate long-term risk to people and property; and

WHEREAS, the Town of Westerly has prepared a multi-natural hazards mitigation plan in accordance with the Disaster Mitigation Act of 2000 (Public Law 106-390) requirements for pre- and post-disaster hazard mitigation programs; and

WHEREAS, the 2023 HM&FMP identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in Westerly from impacts of future hazards and disasters; and

WHEREAS, adoption by the Westerly Town Council demonstrates their commitment to achieving the hazard mitigation and flood management goals outlined in the 2023 HM&FMP; now therefore be it hereby

RESOLVED: That the Westerly Town Council: adopts in its entirety, the Town of Westerly 2023 Hazard Mitigation & Flood Management Plan (*including any required RIEMA/FEMA modifications*) and resolves to support the execution of actions identified in the Plan.

ADOPTED: February 27, 2023

---

**END OF  
DOCUMENT**

---