

From: [Kara Runsten](#)
To: [DPW Projects](#)
Subject: FY24 MVP Action Grant Application Submission
Date: Thursday, May 4, 2023 10:59:32 AM



Formstack Submission For: **FY24 MVP Action Grant Application**

Submitted at 05/04/23 10:59 AM

Lead Applicant:	West Newbury
Is lead applicant a city or town?:	Town
Supporting municipalities (if regional application):	
Project title:	Evaluating Vulnerabilities and Options to Promote Resiliency: River Road and Environs
Shorthand project title:	River Road Study
MVP region:	Northeast
Project type (select best fit):	Type 1: Planning, Assessments, Capacity Building, and Regulatory Updates
Population size of lead applicant (if municipality):	4,500
Does your community have a mapped Environmental	No

Justice population?:	
Legal address of applicant (i.e., address listed on entity's W9):	Town Offices 381 Main Street West Newbury, MA 01985
Name:	Christine Wallace
Job title:	DPW Program & Project Manager
Department/agency:	Department of Public Works
Email:	dpwprojects@wnewbury.org
Phone:	978-363-1100 x130
Grant request amount FY24:	\$89,250
Grant request amount FY25 (not required):	\$60,750
Total grant request amount (add previous two questions):	\$150,000
Match amount. Must be at least 25% of total project cost, (or 10% if lead community listed in Attachment N of the RFR). Total project cost = total grant request + total match:	\$50,000
Match description. Please provide a description of how the applicant's match will be met and source of funding (i.e., "in kind" hours, and/or local, private, federal funds). Please	West Newbury Residents voted at the Fall 2022 Town Meeting to appropriate \$50,000 in matching funds for this project. The Project Manager on staff will also be spending time doing project management tasks such as filling out progress reports,

note, other state funding sources cannot be accepted as match. Further details on match requirements in Section 1.F of the RFR.:

coordinating at monthly meetings, and developing the project case study. Because the match requirements will already be met with the cash match, and for simplicity, staff time is not included in the attached budget.

Project summary: 2-4 sentences describing the project, goals, and main tasks.:

This project will analyze vulnerabilities and potential solutions to flood risk from the Merrimack River at River Road and environs. It includes public activities, meetings, and outreach to inform and engage citizens and Town officials; an existing conditions survey (including bank erosion, watershed delineations, etc) of the areas susceptible to Merrimack River flooding; a study of culverts and stormwater infrastructure; a report of vulnerabilities in 2030, 2050, and 2070; options for shoreline stabilization as well as other solutions (preferably nature-based) for longer timeframes.

Representative image of the project (if possible):



[Direct Link to Image](#)

Is this project a continuation of a previous MVP funded project? If so, please describe::

No

Project location(s):
Please provide the address and lat/long coordinates for your project location or the closest addressed location. If the project will take place at multiple locations, please list all of them. (If the project is not at a specific location(s), for example a town-wide planning process,

River Road, Coffin Street, and Bridge Street in West Newbury

42.809170, -70.995991

42.817181, -70.964909

42.814192, -70.970518

please enter N/A.):

Project narrative:
Please upload a document with your answers to all the questions in the "project narrative" section of the application of the RFR (pages 21-31). Please make sure to include the name of the lead municipality and the project title at the top of the document.:

[View File](#)

Excel version of scope/budget spreadsheet (Attachment B in the RFR). Please delete the "tips" and "instructions" tabs before submitting.:

[View File](#)

Yearly progress report (use EEA-provided template in Attachment D of the RFR):

[View File](#)

Statement of match from authorized signatory of the applicant (described in Section 1.F of the RFR):

[View File](#)

Required information for design and construction projects (Attachment C in the RFR) if applicable:

Document with all letters of support

[View File](#)

compiled:

Draft Town Meeting or City Council vote language for land acquisition projects (see Section 2.B.3), if applicable. :

Appraisal that meets EEA standards for land acquisition projects:

RMAT Climate Resilience Design Standards Tool report print out. Required for projects focused on a specific site and including a physical asset/s (e.g., building infrastructure, natural resources) at any project phase (e.g., planning, design, or implementation). See Attachment E in RFR for more information.:

[View File](#)

Optional Additional Attachment- Please describe in comment box below and ensure file name is clear.:

[View File](#)

Optional Additional Attachment- Please describe in comment box below and ensure file name is clear.:

[View File](#)

Optional Additional Attachment- Please describe in comment

[View File](#)

**box below and ensure
file name is clear.:**

**Optional Additional
Attachment- Please
describe in comment
box below and ensure
file name is clear.:**

[View File](#)

**Please add any
additional
clarifications about
your application
materials here.:**

Additional files attached:

- Scope and Estimate from Consultant GEI and subconsultant GMRI.
- A stand-alone visual schedule of the overall project using the same tasks as Attachment B, and showing who is leading each task.
- Another stand-alone visual overall schedule, but sorted to be in chronological order.
- Printout of the River Road project webpage that includes a link to additional photos and background information.

**Signature of
applicant- please
leave this as the last
thing you do before
hitting the "submit
form" button.
Formstack may try to
submit your form if
you hit the enter key
while filling it out,
and leaving this until
the very end will
prevent your form
from being submitted
prematurely.:**

[Direct Link to Image](#)



1. PROJECT DESCRIPTION, RATIONALE, AND CLIMATE DATA (13 POINTS)

Climate Change Impacts/Vulnerabilities To Be Addressed

- Up to **8 points** for description & rationale, including:
 - What climate change impacts/vulnerabilities this project will address
 - If applicable, please reference the Climate Resilience Standards Tool climate exposure ratings and how the project is responding to the climate exposures identified through the tool.
 - Please also review the [Massachusetts Climate Change Assessment report](#), and describe if and how your project addresses the top impacts identified in your region or statewide.
 - What the project's goals and objectives are.
 - If the project is one component/phase of a larger project, please succinctly describe previously completed or future work and the vision for the overall project in addition to the proposed component/phase.
 - Why the project was chosen.
 - How the project will positively impact the resiliency of the site and community.
 - If applicable, please include quantifiable information about the historic or expected future damages that are likely to occur if the project is not completed (e.g., number of people/homes/structures at risk, number of people depending on the infrastructure being improved, extent of past flooding, expected cost if infrastructure fails, etc.).
 - How the project reflects municipal priorities established in the community's MVP-approved report or subsequent climate resilience report that built upon the MVP process. Eligible entities that are not a city or town should apply for projects that align with priorities in an [MVP-approved municipal climate resilience plan](#). Exceptions may be made for newly eligible Tribes who should demonstrate that the project aligns with a climate resilience priority of the Tribe.

This project will address West Newbury's vulnerability to flooding at the tidal Merrimack River, specifically at River Road and its environs. The Climate Resilience Standards Tool (RMAT) shows that this area's exposure score is high for

- Sea Level Rise/Storm Surge,
- Extreme Precipitation- Riverine Flooding, and
- Extreme Precipitation – Urban Flooding.

Among other things, the RMAT conclusion is that this is in an area with uncertainty for future tidal datums and should be evaluated in more detail at the site-scale.

The [Massachusetts Climate Change Assessment report](#) for the [North Shore Region](#) including West Newbury identifies the following urgent impacts directly related to flooding at River Road and environs. For instance:

- Human sector: The area under study includes not only roadways essential to West Newbury residents, but also directly affects the Rocks Village Bridge, which is a critical connector to Haverhill and Merrimac, neighboring communities with Environmental Justice communities.
- Infrastructure sector: The area under study contains roadways that are already experiencing

increasing flooding and erosion.

- Governance sector: If flooding vulnerabilities at River Road, Bridge and Coffin Streets are not addressed, services for emergency response will increase and become more costly while tax revenues from valuable properties in this area could be jeopardized.
- Economy sector: Rocks Village Bridge, which is accessed via River Road and Bridge Street, is essential not only for emergency response but also for commuters, school buses serving Merrimack and other areas for the Pentucket and Whittier regional schools, and others.

The project's goals and objectives are to enable Town officials and residents to better understand the timeline and locations of future flooding and road vulnerability and explore near-term, interim, and long-term climate adaptation strategies, emphasizing nature-based approaches. It will also inform planning and consideration of alternatives to foster resiliency. As shown on the attached GEI Consultants, Inc. (GEI) Scope of Work, the proposed project consists of:

- public activities, meetings and outreach to inform and engage citizens and Town officials;
- an existing conditions survey (including bank erosion, watershed delineations, under road seepages, area of nature-based buffers and other factors) to identify sections susceptible to Merrimack River flooding and road erosion;
- a study of culverts and stormwater infrastructure;
- a report of vulnerabilities in 2030, 2050, and 2070; and
- options for shoreline stabilization as well as other mitigation strategies (preferably nature-based) for longer timeframes.

GEI is a consulting engineering firm specializing in geotechnical, environmental, water resources, and ecological services. It has an in-house staff of skilled and experienced environmental scientists, restoration ecologists, hydrologic and hydraulic modelers, landscape architects, water quality specialists, and marine and geotechnical engineers with extensive coastal and riverine experience. The project will use GEI's expertise in resiliency and vulnerability studies in coastal and waterfront settings, utilizing robust coastal and riverine modeling to determine flood extents and erosion potential during increased storm conditions, future rates of precipitation, and projected sea level rise values.

For public outreach, GEI will team with the [Gulf of Maine Research Institute](#) (GMRI). GMRI has a robust Municipal Climate Action Program (MCAP) that engages coastal communities to support better understanding of local sea level rise impacts and provides them with knowledge, skills, and tools they need to develop community-focused and data-driven resilience plans to thrive in a changing world. GMRI has worked with over 40 coastal communities and has engaged over 3,000 participants.

Future projects may include design, permitting, and construction of (ideally nature-based) solutions, as well as regulatory and planning activities and any other work identified in the study and determined necessary by the Town and the community.

This project was chosen because the site is among the most at-risk from climate change in West Newbury. The areas in question have an extensive history of worsening flooding and erosion. They most recently flooded during the December, 2022 nor'easter. Erosion crumbling the riverbank up to the road's asphalt occurred during the March, 2023 nor'easter, as reflected in West Newbury's Climate Change Resiliency Committee ([CCRC](#)) minutes. This area's Rocks Village Bridge and recreational resources such as fishing, hiking, kayaking, biking, and birdwatching are used by thousands of people.

Understanding vulnerabilities and working toward consensus for nature-based solutions now, when planning and preparation are possible, will positively impact the resiliency of both human infrastructure and riverine resources and will enable thoughtful consideration of nature-based solutions. As indicated in letters of support from officials in the cities of Haverhill and Amesbury and the towns of Merrimac and Groveland, the lessons from this assessment and project can be transferred to other riverine areas in neighboring communities.

The project is drawn directly from the Town's [MVP Final Report](#), which did not list recommendations by order of importance. Recommendation 7 concerns stormwater and flood management, operation and maintenance and includes "Assess vulnerable neighborhoods and plan to address vulnerabilities, such as erosion and flooding... Priority area is River Rd. erosion."

- **1 point** for utilization and report from the [Climate Resilience Design Standards Tool](#)
 - ☒ Project is focused on a specific site and includes physical asset/s -- e.g., building, infrastructure, natural resources-- at any project phase
 - If box is checked you are required to follow Attachment E and upload your Climate Resilience Design Standards Tool report with your application. There is a place on the online form to upload this report.
 - ☐ Project is NOT focused on a specific site and/or does NOT include physical asset/s --e.g., building, infrastructure, natural resources-- at any project phase
 - You are not required to submit a report and will receive this point.
- Up to **3 points** for the degree to which the most up-to-date climate science and data (including data found on resilientma.mass.gov, the [Climate Resilience Design Standards Tool](#), local-level studies, traditional ecological knowledge, and/or other qualitative forms of data) will be utilized, including specific reference to the climate data utilized.
 - **For Project Type 1:** Planning, Assessments, Capacity Building, and Regulatory Updates-- What specific climate data will be used to inform the process or report and how will they be utilized? If it is a regulatory project, how will the regulations use climate data to ensure they will provide reasonable and effective guidance into the future? If it is a project that focuses on a specific site and involves a physical asset, what are the expected planning horizon and return period for the project? How will the project utilize the preliminary climate risk rating and recommended design standards from the [Climate Resilience Design Standards Tool](#) at this assessment phase of the project?
 - **For Project Type 2:** Design and Permitting – What are the expected planning horizon and return period for the project? How will the project utilize the preliminary climate risk rating and recommended design standards from the [Climate Resilience Design Standards Tool](#) in the design of the project's physical assets? What other climate data and standards will be used to inform the design process and how will they be utilized?
 - **For Project Type 3:** Construction and On-the-Ground Implementation – How does the proposed design meet or fail to meet the recommendations in the [Climate Resilience Design Standards Tool](#) output report? (e.g. planning horizon, return periods, design criteria, methodology). If the proposed design does not follow the

recommended design standards, please explain how climate science, data, and projections were used to inform the design of the project. Please cite specific data sources. If a different type of implementation project (e.g., land acquisition) describe how climate data informed the project.

This Type 1 project will employ services of consulting engineering firm GEI (whose scope of work is included with this application) to examine existing conditions and determine vulnerabilities using the [MORIS tool](#), readily available GIS data of assets such as transportation, power, public safety, education, and building infrastructure as well as public spaces, such as wetlands, parks, playgrounds, and trails. The project will examine vulnerabilities in near- (2030), mid- (2050), and long-term (2070) time periods. GEI will also compile existing topography data using readily available technical data from sources such as FEMA, United States Geological Survey (USGS), and the National Oceanic and Atmospheric Administration (NOAA). Topographic data will be used to understand depths of flooding of at-risk infrastructure. These data will be used in conjunction with and as a supplement to the RMA tool and its design criteria for such factors as Projected Water Surface Elevation, Wave Action Water Elevation, Wave Heights, Duration of Flooding, Design Flood Velocity, Scour & Erosion, Total Precipitation Depth & Peak Intensity for 24-hr Design Storms, to determine vulnerabilities and a range of possible solutions over the timeframes identified.

GEI will use this compilation of the latest climate data to develop proactive mitigation strategies, emphasizing nature-based solutions to the greatest extent possible. Additionally, West Newbury's Climate Change Resiliency Committee (CRCC) has expertise in identifying and restoring healthy riverine and floodplain communities and nature-based solutions, and intends to work in the future with Geoff Wilson and [Wheeler's environmental program](#) to identify anthropogenic causes of erosion or flooding and identify innovative nature-based techniques to address these stressors. Mr. Wilson has successfully used a similar approach to develop a comprehensive suite of nature-based restoration techniques used by multiple conservation organizations to restore resiliency to thousands of acres of salt marsh in New England.

- **1 point** for inclusion of MVP yearly progress report (Attachment D)
 - Required for all applicants, even those who recently completed the MVP Planning Grant process. Please fill it out to the best of your ability.

Included as Attachment D.

2. TIMELINE, SCOPE, AND BUDGET (15 POINTS)

- Up to **4 points** for project scope. Please detail each task/step of the project here and include a summarized version in Attachment B. For each task, please identify if it is dependent on completion of another task. If applying for a two-year project, applicants should divide project tasks between fiscal years in distinct phases. If EEA is able to provide funding in FY24 but unable to provide FY25 funding for the applicant's proposal under this BID/RFR, the applicant may reapply for that phase of the project in a future funding round.

Please see GEI's Suggested Scope of Work and Task List, with deliverables and schedules, which is an attachment to this grant application. Additional outreach tasks are described in Attachment B and detailed in the answer to Question 5.

Aside from community outreach described in detail in Question 5, tasks include

- 1) an existing conditions survey (including bank erosion, watershed delineations, under road seepages, area of nature-based buffers and other factors) to identify sections susceptible to Merrimack River flooding and road erosion;
- 2) a study of culverts and stormwater infrastructure;
- 3) a report of vulnerabilities in 2030, 2050, and 2070 (dependent on completion of ##1& 2); and
- 4) options for shoreline stabilization as well as other mitigation strategies (preferably nature-based) for longer timeframes(dependent on completion of ##1-3).

Those aspects of community outreach intended to share conclusions regarding vulnerabilities and potential solutions will depend on completion of the steps outlined above.

- Up to **4 points** for the project budget. Applicants will include budget numbers for each task and sub-task via Attachment B. There is a place to upload Attachment B as an Excel spreadsheet on the online form. The "optional budget data" tab on the spreadsheet is optional but can be used to calculate budget numbers to the extent helpful, identify assumed rates for project team time and in-kind match, or justify high grant funding requests for specific tasks by providing greater detail. The applicant may also use another format to provide greater detail on these items (e.g., a quote from a contractor or a separate spreadsheet). There is a spot to upload additional materials on the online form.¹

Please see Attachment B and the attached GEI scope of work and cost estimates. Additional community engagement projects, such as those managed by West Newbury's G.A.R. Library and the CCRC with no use of MVP funding, are described in the response to Question 5 and included in Attachment B at \$0 grant cost. Thousands of dollars' worth of in-kind matching will be provided by the CCRC and other volunteers as well as by West Newbury's G.A.R. Library, but because West Newbury has limited support staff to meet the grant administrative requirements, the value of

¹ There are multiple tabs on the Attachment B spreadsheet, including instructions for how to fill out the template and a "tips" sheet to help troubleshoot some common issues with budgets and questions that have come up in previous rounds. Additionally, there is a separate "checklist" attached to COMMBUYS that applicants can use to make sure they have filled out Attachment B correctly.

volunteer and Library in-kind matching is not included in the grant application. Additionally, our Project Manager, West Newbury's Program and Project Manager Christine Wallace, P.E., will be spending many hours on this project, performing grant management tasks, attending meetings, etc. Again we are not including this as a grant cost have not included in-kind matching value of this work in Attachment B so that we do not have to expend limited resources on tracking and reporting in-kind hours.

- Up to **4 points** for a clear project timeline that can be completed within the specified contract period. For projects that require completion of Attachment C, please include major milestones, regulatory touchpoints and approvals, and information on how any project planning, design, and regulatory compliance efforts will be met during the grant period. Please ensure the timeline dates align with start and end dates for each task in Attachment B.

Successful applicants are estimated to be notified by August 2023 with contract negotiations to begin immediately thereafter. Therefore, the project timeline should start in September at the earliest.

Please see GEI's Suggested Scope of Work and Task List, with deliverables and schedules, as well as Attachment B, which lists additional non-MVP funded volunteer-provided tasks associated with community engagement.

Also please see in a separate attachment a visual timeline organized by task order and lead responsibility, using the same tasks as those in schedule B. Also attached is another timeline using the same tasks but organized chronologically.

- Up to **3 points** for identification of regulatory project components (including satisfactory completion of Attachment C if a design, permitting, or construction project). Documented coordination with applicable regulatory agency/ies is encouraged. Projects with significant regulatory compliance barriers identified through assessment of Attachment C or construction projects that do not have all necessary permits and permissions in hand may be disqualified. There is a place on the online form to upload Attachment C.

Inapplicable for this project.

3. NATURE-BASED SOLUTIONS AND ENVIRONMENTAL CO-BENEFITS (16 POINTS)

- Up to **10 points** for the degree to which nature-based solutions (i.e., solutions that protect, restore, or manage ecological systems) are incorporated into the overall vision of this project and how the selected strategy/ies will help the community adapt to existing and projected impacts of climate change. More information about nature-based solutions can be found in the [MVP toolkit](#). Consider the following questions in your response:
 - **For Project Type 1:** Planning, Assessments, Capacity Building, and Regulatory Updates—How will this work “set the stage” for future implementation of nature-based solutions or promote the concept of nature-based solutions?
 - **For Project Type 2:** Design and Permitting – Describe all design options (including nature-based options) that will be evaluated or considered in the design process.
 - **For Project Type 3:** Construction and On-the-Ground Implementation – What are the nature-based solutions being implemented? If the project is not nature-based, describe a clear assessment of design alternatives and discussion of why a nature-based solution was not chosen.

(Note: Hard infrastructure projects in any phase may still receive a maximum of **5 points** for a response to this question that demonstrates why this approach was deemed necessary over nature-based approaches and illustrates how environmental conditions will improve with grey infrastructure implementation.)

By identifying and engaging in community outreach concerning vulnerabilities and potential solutions to flooding at River Road and environs before the problem becomes a crisis, we can set the stage for nature-based solutions. GEI’s comprehensive assessment will allow West Newbury to evaluate all potential mitigation strategies and develop a holistic approach to address all problem areas over multiple time scales.

Although solutions have not yet been outlined, the Town will prioritize nature-based solutions, such as living shorelines, riverbank restoration, and submerged aquatic vegetation to reduce fetch and erosion from wave action. Additionally, we intend use information gained in the study to work in the future with Geoff Wilson to identify past historical land uses and alterations that may be exacerbating road erosion and flooding and to seek innovative nature-based techniques, similar to those he developed for salt marsh systems in the Great Marsh. Also, we have identified an ineffectual culvert that might be improved upon to allow fish into a possible shallow spawning area, and we would like to use such things as berms and revegetation as much as possible to expand benefits of carbon sequestration, improved habitat, etc. Community outreach will focus on the values of preserving these biological assets and the benefits of promoting nature-based solutions.

- Up to **6 points** for identifying and describing environmental co-benefits of the proposed project in the table below. For non-implementation projects, please identify how this work will “set the stage” for future co-benefits.

Co-Benefit	Description of how the project will produce this environmental co-benefit
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Promotes Biodiversity (habitat restoration, creation, or enhancement)	<input checked="" type="checkbox"/>	Assessment, potential mitigation strategies, and community outreach will promote riverbank revegetation and culvert improvements to enhance habitat for birds, pollinators, fish, and other wildlife.
Restores/remediates Project Site	<input checked="" type="checkbox"/>	We will prioritize nature-based solutions for addressing flooding and road erosion, including living shorelines and restoring riverbank vegetation and culvert improvements to enhance habitat. This in turn will preserve and improve the recreational values that bring people from throughout Essex County and beyond to River Road.
Promotes Environmentally-Sustainable Development / Reduces Development in Climate Vulnerable Areas	<input checked="" type="checkbox"/>	Through our community outreach efforts, residents and Town decisionmakers will better understand climate vulnerabilities of River Road and adjacent areas and consider future access when considering future development and open space acquisition.
Improved Water Quality and/or Increased Groundwater Recharge	<input checked="" type="checkbox"/>	Some nature-based solutions, such as expanding submerged aquatic vegetation, promoting native riverine buffer (wild rice and bulrushes, and palustrine shrubs), and living shorelines may increase groundwater recharge and improve water quality. We intend to work with Geoff Wilson in the future to address upland runoff and seepage by such means as diverting the water prior to running to the road, which will increase infiltration and improve water quality
Improved Air Quality	<input checked="" type="checkbox"/>	Potential mitigation activities such as additional plantings of native vegetation will improve carbon sequestration and improve air quality
Climate Mitigation (carbon sequestration, site-scale improvements for cooling, reduced energy use)	<input checked="" type="checkbox"/>	Community outreach will promote riverbank revegetation. This project, in conjunction with activities of West Newbury's Energy and Sustainability Committee, will also promote GHG reduction measures as part of the educational effort.
Other Environmental Co-Benefit:	<input checked="" type="checkbox"/>	River Road is unique among north shore riverbanks in that it has miles of natural bank uninterrupted by residential development, with diverse plant and animal communities. This project seeks to develop early mitigation strategies to preserve and enhance these biological resources. Rare species to benefit from this project include nesting bald eagles, waterfowl, American eel, and Atlantic and short nosed sturgeon

4. ENVIRONMENTAL JUSTICE AND PUBLIC/REGIONAL BENEFITS (14 POINTS)

- Up to **8 points** for a project located within a mapped EJ Population, identified through the Massachusetts [EJ viewer](#), **with demonstrated positive impacts to that community and demonstrated support from the community**. To receive full points, the applicant should:
 - Provide specific relevant demographic information related to the Environmental Justice Population (i.e., income, race, and English isolation) and a description of where the community is located geographically relative to the project site.
 - Demonstrate how the project will increase climate resiliency for this EJ Population.
 - Demonstrate how this project will address root causes of social vulnerability (e.g., racial inequality, financial insecurity, accessibility barriers, etc.).
 - Demonstrate support from the EJ Population that the project is intended to benefit. Demonstration of support may include:
 - Letters of support from residents or community groups representing these populations.
 - Indication that residents or community groups representing these populations will be part of the project team (i.e., the community liaison model described in Attachment F) and, **if so, specifically how much of the project budget will be used to compensate them for their work and on what tasks?** (Please make sure this partnership is easily identifiable in your Attachment B scope/budget).

Note: Recognizing that there may be members of your community who are highly vulnerable to the impacts of climate change that do not meet the specific criteria or thresholds of an EJ population, the MVP program also recognizes benefits to and involvement of “other priority populations.”² Other priority populations are people or communities who may be disproportionately impacted by climate change due to life circumstances that systematically increase their exposure to climate hazards or make it harder to respond. In addition to factors that contribute to EJ status (i.e., income, race, and language), other factors like physical ability, access to transportation, health status, and age shape whether someone or their community will be disproportionately affected by climate change. This is because of underlying contributors such as racial inequality, financial insecurity, or accessibility barriers that create vulnerability. Projects that benefit and involve other priority populations outside of a mapped EJ area may receive **up to 4 points** in this category by answering the above questions for the other priority population(s).

More information on Environmental Justice, other priority populations, and the MVP program can be found in the [MVP toolkit](#).

West Newbury has no EJ communities. However, the area of concern directly affects the Rocks Village Bridge, which is a critical connector to Haverhill and Merrimac, neighboring municipalities with Environmental Justice (EJ) communities. Among other things, school buses serving West Newbury and Merrimac traverse this bridge, as do public safety vehicles, commuters, and others from and to adjacent areas and beyond. Representatives of Haverhill, Merrimac, and Amesbury, all of which have EJ communities, have provided letters of support for this project, and we intend to continue to work with them as the project moves forward. River Road was historically significant to the Penacook-Abenaki tribe

² Referred to in previous RFRs as “Climate Vulnerable Populations”

that traveled along this route to travel between their permanent villages and seasonal camps on Plum Island, and we hope to be able to contact that tribe. Additionally, although the timing does not permit inclusion of specifics in this grant application, the CCRC will review the MVP 2.0 GEAR tool as soon as it becomes publicly available, to see if currently unidentified community sectors within West Newbury could be better included in outreach for this project.

- Up to **3 points** for the degree to which the project has broad and multiple community benefits. Rationale should include:
 - How the project will provide the highest level of climate resilience for the greatest number of people and/or largest geographic area possible.
 - What community co-benefits the project will provide (e.g., social, economic, public health, recreational, public access, equity, etc.). Please focus on non-environmental co-benefits as environmental co-benefits are included in Question 3 above.

As noted, the area of concern directly affects the Rocks Village Bridge, which is a critical connector to Haverhill and Merrimac, neighboring municipalities with EJ communities. Among other things, school buses serving West Newbury and Merrimac traverse this bridge, as do public safety vehicles, commuters, and others from and to adjacent areas and beyond. Additionally, River Road is heavily used not only by West Newbury residents but by people from throughout Essex County and beyond for birdwatching, biking, hiking, fishing, and other recreational activities.

- Up to **3 points** if the project is regional/has regional benefits, including:
 - If the project is being led by a regional partnership (i.e., two or more municipalities are submitting the application together). If yes, the application should include a letter of support from each partnering municipality.
 - To what extent resilience benefits of the project go beyond the boundaries of one municipality.

The area of concern directly affects the Rocks Village Bridge, which is a critical connector to Haverhill and Merrimac, neighboring municipalities with EJ communities. Among other things, school buses serving West Newbury and Merrimac traverse this bridge, as do public safety vehicles, commuters, and others from and to adjacent areas and beyond. Additionally, River Road is heavily used not only by those from West Newbury but by people from throughout Essex County and beyond for birdwatching, biking, hiking, fishing, and other recreational activities. Moreover, the lessons learned from this project may readily transfer to other locations within West Newbury and in other towns in the tidal Merrimack River area. As can be seen from letters of support from neighboring communities such as the towns of Groveland and Merrimac, and cities of Haverhill and Amesbury, our neighbors support this project and are interested in learning about its findings. The CCRC intends to continue outreach and seek our neighbors' participation as the project progresses.

5. PUBLIC INVOLVEMENT AND COMMUNITY ENGAGEMENT (12 POINTS)

- To complete this section, include a brief narrative and fill out the matrix below. **For guidance and an example showing how to fill out this section and suggested principal and assisting print, digital, and in-person strategies, see Attachment F. Please note that all tasks proposed here should be clearly incorporated into the required Scope/Budget spreadsheet (Attachment B) as separate tasks that clearly identify how funds will be allocated.**
 - 1 point for each principal strategy (**up to 3 points total**) as described in the narrative and table below. May have one per print, digital, and in-person category or distribute among those categories (e.g., two in-person, one print, no digital). **The review team will consider the effectiveness of each identified strategy and inclusion in the project scope/budget when awarding points.**
 - 0.5 points for each assisting strategy (**up to 3 points total**) as described in narrative and table below. May distribute among print, digital, and in-person categories as desired. **The review team will consider the effectiveness of each identified strategy and inclusion in the project scope/budget when awarding points.**
 - 1 point for each equitable engagement modifier (**up to 4 points total**) as described in the narrative and table below. May distribute among print, digital, and in-person categories as desired. **The review team will consider the effectiveness of each identified strategy and inclusion in the project scope/budget when awarding points.**
 - Up to **2 points** for how stakeholder feedback will be incorporated into the project and mechanism by which stakeholders will be notified of the results of the public involvement and community engagement process and the final project deliverables (see examples in Attachment F).

NOTE: For Project Type 3: Construction and On-the-Ground Implementation –
Applicants may fill out the table/narrative and receive points based on community engagement strategies that have occurred in earlier phases of the specific project and how feedback has been incorporated into the final design. Applicants may also describe strategies that will be employed during this project phase. Please make clear which strategies have been completed and which are proposed to be conducted within the proposed phase of the project.

Brief Public Involvement and Community Engagement Plan Narrative:

For Print engagement, at the beginning of the project the CCRC, GMRI, and GEI will develop posters and flyers to describe the study to examine vulnerabilities and develop near- (2030), mid-, (2050) and long-term (2070) solutions to Merrimack River flooding at River Road and its environs. Posters and flyers will be made available around town to notify residents of the need for the project, the study process, and its objectives. Events related to the project will be advertised in local newspapers.

West Newbury will join GMRI's [Coastal Flood Community Science](#) project. Here, coastal communities engage their residents (and, in the case of River Road, nonresidents who frequently use the area not only for transportation, but also for birding, fishing, biking, hiking, etc.) in making observations of high water, or evidence of high water, and contribute photographs, weather observations, impacts to their community and personal narrative about changes they have observed over time. This process builds

community awareness of past and current flood impacts, provides the Town with local data and community input to inform decisions, and is used by the National Weather Service to ground truth flood models and provide more timely flood alerts. To promote participation, signage will be installed along each end of River Road. The signs will be in English and Spanish (the most prevalent second language in Essex County) and will contain a QR code linking to GMRI's project-specific webpage where community members can contribute data.

GMRI will also host a virtual training webinar to share with community members the project goals, the need for this data, and how to make and contribute observations. We will record the kickoff meeting and webinars and link them on the project page.

Town webpages will be frequently updated and will describe the study as it progresses. We will also have a community read with in-person events, described below. We have already sent a mailer to River Road residents about a site walk that occurred in anticipation of the proposed MVP grant.

For Digital engagement, In addition to the existing [CCRC webpage](#), the Town has established a [project-specific webpage](#) which is linked from the CCRC page and will be linked via QR code on the planned signage. The project-specific webpage will review the project, link to the community science project, provides updates, and advertise project-related events. Updates to the website will be communicated via Town email lists and Town social media platforms. The webpage will include means for community feedback and questions related to the project. The webpage will be updated throughout the project. Also, the CCRC has already set up an email account, WN.Climate@gmail.com, to receive public feedback and respond to queries.

At the project's end, GEI will compile and summarize the findings of the project into a final report to be advertised and featured on the webpage. The report will include an Executive Summary that will have the ability to operate as a stand-alone document to summarize the project goals, methods, and findings in a non-technical manner for information conveyance to a layperson. The Town webpage will also include an updated ArcGIS Storymap with final project results and next steps for the community. Having West Newbury's website host this map will enable the Town to update the map as it could showcase geo-located adaptation success stories.

For In-Person engagement, a number of events are planned, as described in the attached GEI scope and tasks documented in Attachment B. The CCRC has already held a site walk for River Road residents, successfully sponsored West Newbury's unanimous vote at Fall 2022 Town Meeting to appropriate \$50,000 in matching funds for this project, and described the project and at the 2023 Spring Town Meeting, invited participation in a presentation.

We will also host several public meetings and events:

- A GEI and GMRI-facilitated kickoff meeting that will provide an overview of the project goals, methods, and anticipated timeline. At the kickoff event, GEI and GMRI will provide an overview of climate change, MORIS predictions for River Road and Coffin Street (including nuisance flooding), and slides of flooding and erosion seen at River Road. The public will be invited to stay involved with the project. This would be well-advertised in Town and the webpage would be updated with this information.

- A sitewalk/community/youth event when GEI is using the drones at River Road with an informal discussion of the climate change issue, the type of work GEI does, how drones are used, etc, with state MVP people and others invited.
- GEI and GMRI will participate in a community site visit event where areas at risk of flooding, identified in the study of vulnerabilities, will be visited in-person so the impact of the flooding can be imagined by community members. The event will be advertised in digital and print media. Areas at risk of flooding and/or erosion will be explored. We will also use this event to promote community members in participating in the Coastal Flood Community Science project.
- A second community education event will be held in the winter of 2023/2024 to target an audience that missed the initial facilitated sea level rise event. Similar to the initial event, neighboring communities will be invited to participate. GMRI will facilitate a community climate conversation to build participant knowledge in sea level rise scenarios and future projections using the scenarios available in MORIS. Community values and high-priority climate vulnerabilities will emerge through the facilitated discussion and map-based group activity. We will also stream and record this event to allow for hybrid participation and will provide a link to view the presentation which can be posted on the project website.
- A public meeting will be held after the completion of the Vulnerability Study. GEI will lead the meeting and provide a summary of the results of the vulnerability study and an updated timeline for the remainder of the project. We will provide an overview of climate adaptation options that could be used for the identified vulnerable areas. Additionally, GMRI will work with GEI and the CCRC to update the project webpage with an ArcGIS StoryMap of the vulnerability study results. The StoryMap will include climate projection maps, community-contributed data of flood observations, and geo-located narratives of the climate adaptation options provided by GEI.
- GMRI will lead a small-group learning experience aimed at local officials, leaders representing socially vulnerable populations, and project stakeholders. The learning experience is designed to provide a community-driven framework for coastal communities to engage in the complex conversations surrounding climate planning as they consider vulnerabilities and resilience strategies. The learning experience is rooted in challenges and strategies that will ground participants in a discussion that should feel strongly relevant to the places they call home. Through a 3-part, 4 hour workshop, participants will engage in conversations around community values and identity to help guide the experience and empower participants to confront the difficult reality of our changing climate as they consider possible futures through new perspectives.
 - Part 1: Participants complete activities that ground the discussions in a strong sense of place and community value.
 - Part 2: Guided by community values, participants confront the complex impacts of sea level rise and related impacts to their community and collaborate around identifying and prioritizing resilience strategies.
 - Part 3: Participants reflect on the role of community values in decision-making and identify climate vulnerabilities and resilience that emerged as high priorities for their community.
- GEI and GMRI will work together to provide a training of MORIS to local officials in the Town of West Newbury. The training will focus on the science behind the model, increasing the understanding of risk-related terminology (e.g., “what is the meaning of exceedance

probabilities?”), and discussing how the model can be used to inform Town planning.

We will also have a program along the lines of [Plymouth’s Read Up A Storm](#) project with the [West Newbury G.A.R. Library](#), which in many ways functions as the Town’s social nerve center. Such a program would not use MVP funding, but is included in Attachment B to show estimated timing. The Library has considerable expertise in mounting climate-related programs. In recent days its advertised events include “Arbor Day: Celebrate Trees – Family Program” for April 29 and “Composting and Mulching for Climate-Wise Gardening” for May 3. Costs for these programs are not included in grant costs and because of the administrative costs associated with collecting and reporting in-kind funding match data, we are not claiming in-kind matching for the many hours that will be devoted to this. The planned programs include such activities as:

- A community read with climate-change related books chosen respectively for adults, teens, and children, with discussion and meeting opportunities.
- Story time and crafts for young children relating to climate change.
- A library grounds story walk featuring a climate change related book.
- Programs related to the community read climate change related book.
- Events/talks about climate change.

CCRC and other local volunteers will also have programs for community outreach. The CCRC has experience in community outreach through its management of the MVP Planning Grant and through the many activities (e.g., River Road site walks) it has conducted in anticipation of this MVP Action Grant. Costs for these programs are not included in grant costs and because of the administrative costs associated with collecting and reporting in-kind funding match data, we are not claiming in-kind matching for the many hours that will be devoted to this. They are, however, included on Attachment B. These programs include:

- A bring-your-own kayak tour of the River Road area given by the CCRC with a focus on bank erosion and potential nature-based solutions such as submerged aquatic vegetation and wetland vegetation.
- A river boat tour to discuss vulnerabilities, work being done, etc.
- [Climate Cafés](#) hosted by local high school and college youth focused on two themes: 1) community preparedness for storm emergencies (such as outages or flooding) and 2) who owns the rivers—topics of rights and responsibilities of water users.
- Collaboration between CCRC members and [Yankee Clipper Harbor Tours](#) and [Plum Island Kayak](#) to train their guides to include in their talks information about hydrology, flooding, water quality, and biological resources of the Merrimack River. The two tour companies will then incorporate this information into their regular tour operations.

For how community feedback will be incorporated into project and mechanisms by which results will be shared, we will reserve time in all monthly CCRC meetings (which will be open to the public) to review public comments to date and discuss how they can be addressed and incorporated into the project. The CCRC has already set up an email account, WN.Climate@gmail.com, to receive feedback and answer questions. To share results of this process we will hold a final meeting presenting study results, possible solutions over different time periods, invite community feedback, and seek to develop

consensus approaches to the problem. We will summarize this on the webpage and include a comprehensive response to all comments received from the public and how they were addressed. These documents will also be available in the West Newbury G.A.R. Library. The final conclusions and feedback will inform future action to address resiliency for River Road and its environs.

The tasks laid out in this plan are summarized in our Scope/Budget Attachment B with deliverables, due dates, requested grant funds, and designated match identified for each one.

Public Involvement and Community Engagement Plan for Town of West Newbury Flood Risk & Solutions Study for River Road and Environs

	Print	Digital	In-person
Principal	<ul style="list-style-type: none"> -Posters and flyers at public sites in town -Public events advertised in local newspaper -Final report by GEI summarizing project goals, methods & findings -G.A.R. Library Community Read about climate change-related topics 	<ul style="list-style-type: none"> -Town project webpage -Community participation in GMRI's Coastal Flood Community Science project - ArcGIS Storymap with final project results and next steps 	<ul style="list-style-type: none"> -GMRI and GEI facilitated kickoff, interim and post Vulnerability Study community meetings -3-part small-group learning experience aimed at local officials, leaders representing socially vulnerable populations, & project stakeholders to provide a community-driven framework for complex conversations surrounding climate planning -Events/activities such as with the drone at River Road and boat trip -A training of MORIS to local official in the Town of West Newbury to inform Town planning
Assisting	<ul style="list-style-type: none"> -Signs posted on site that inform residents and nonresidents of project and opportunities to participate 	<ul style="list-style-type: none"> -Email blasts, social media highlighting project development and driving traffic to webpage 	<ul style="list-style-type: none"> -G.A.R. Library events such as speakers, story walk, etc -Climate Cafes with local youth -Training for Merrimack River tour companies
Already done	<ul style="list-style-type: none"> -Mailer to River Road residents 	<ul style="list-style-type: none"> -Garden Club newsletter article about Town organizations addressing climate change with description of project 	<ul style="list-style-type: none"> -Site walk on River Road -Fall 2022 Town Meeting vote for River Road climate change project -CCRC report at Spring 2023 Town Meeting describing proposed project and inviting

		-Library Zoom programs concerning climate change, such as the April 11, 2022 presentation about Rainwater Harvesting -CCRC email address to receive feedback and answer questions.	public participation if the grant is awarded
Equitable Engagement Modifier	-Translation of signage to include Spanish, the second most prevalent language in Essex County, as well as English	-Identifying and sharing content with the Council on Aging, representing a priority population	-Inviting participation by local communities with EJ populations. -Although the timing does not permit inclusion of specifics in this grant application, the CCRC will review the MVP 2.0 GEAR tool as soon as it becomes publicly available to see if currently unidentified community sectors could be better included in outreach for this project.
<p>How community feedback will be incorporated into project and mechanism by which results will be shared:</p> <p>Reserve time in all monthly CCRC meetings (which will be open to the public) to review public comments to date and discuss how they can be addressed and incorporated into the project. The CCRC has already set up an email account, WN.Climate@gmail.com, to receive feedback and answer questions.</p> <p>Publish on the project webpage a comprehensive response to all comments received from the public and how they were addressed.</p> <p>Establish and advertise availability of project documents at the Library, which is convenient and accessible to the impacted community</p>			

6. PROJECT TRANSFERABILITY, CAPACITY BUILDING, MEASUREMENT OF SUCCESS, AND MAINTENANCE (8 POINTS)

- Up to **2 points** for projects that serve as a demonstration project and are transferable to other communities (i.e., innovative projects that provide deliverables that can be easily adopted by other communities or outline processes that will streamline other similar projects). Please outline what these deliverables are and how they will be shared with other communities.

To our knowledge, this project would be the first to look at climate change flooding and erosion vulnerabilities and potential solutions in the non-coastal tidal Merrimack River region. In addition to West Newbury, Merrimac, Groveland, Amesbury, and Haverhill are subject to storm surge, erosion, sea level rise and related climate change threats. Many of the conclusions in the study we propose would likely apply to these communities. We would publicize the final report in news outlets that reach those communities, share the final report with officials in those communities, meet with representatives of those communities, and if regional solutions emerge, seek to work with those communities on further projects. As can be seen from letters of support from neighboring communities such as the Towns of Groveland and Merrimac, while not joining in this project, our neighbors support this project and are interested in learning about its findings. We intend to continue and strengthen connections with our municipal neighbors in this arena.

By collaborating with GEI (and, in the future, Geoff Wilson), we increase chances of developing innovative techniques for addressing flooding and erosion problems faced by West Newbury and adjacent communities over various timeframes. Measures of success include: identifying hot spots for flooding and erosion, identifying nature-based solutions (short-, near- and long-term), and increasing community and Town official understanding of future risks and potential solutions. GMRI's [Coastal Flood Community Science](#) project is a new community engagement tool not previously used in Massachusetts and is expected to successfully engage community members in crowd sourcing historical flooding as well as co-developing potential solutions. This community tool shows great promise to garner community participation and buy-in, and can be transferred to other communities.

- Up to **2 points** for projects that build community capacity for climate resilience (e.g., fostering social and institutional relationships, integrating climate resilience thinking into other policy or planning projects, training community members on climate resilience and equity, engaging students with climate resilience curricula, etc.).

A major component of the project is community outreach. As shown in our compiled letters of support, regional recreational/environment groups, numerous Town committees and organizations ranging from the Finance Committee to the Garden Club, and neighboring municipalities support this project. We intend to continue to reach out to and work with these groups as the project is underway, looking for ways to integrate the project and its outcomes into their work. The community engagement components of the project are intended to train Town officials and community members—from students to the elderly—on climate resilience and equity.

- Up to **2 points** for how project success will be measured and monitored. Please provide outcomes that can be linked to the project (e.g., reduction in flooding, increase in tree canopy cover, reduced risk of sewer overflows) and any metrics that the applicant will be able to track to indicate whether or not the project is accomplishing these outcomes over time. The review

team is not looking for general statements around the completion of tasks in the scope of work (e.g., “the project is successful if we complete it on time”).

Metrics of success will include education and interactions in the community around climate change. A specific example is fostering a greater understanding of MORIS flooding projections, with specific training for Town officials. Other metrics include

- Public outreach activities will foster recognition among those directly affected of the value of wetlands protection (and detriment of removing riverfront vegetation), as measured by preservation/enhancement of riverfront vegetation
- The study will spur education and additional programs in West Newbury around climate change, as measured by post-FY25 Library, CCRC, Energy and Sustainability Committee and other programs and activities continuing education and dialog about climate change. Our Yearly Report, provided with this application, shows the commitment of a variety of West Newbury entities to addressing climate change issues.
- The study’s identification of vulnerabilities will promote decisions around development and open space acquisition that recognize projected flooding from sea level rise, storm surge, etc, as measured by continued notifications (e.g., in the building permit process) of vulnerabilities to those who may invest in infrastructure in at-risk areas
- The study and specific MORIS training for Town officials will engender consideration of climate change in investments, planning, and regulatory decisions ranging from storm water management to potential restrictions on large trucks over River Road or imposition of wake limits, as measured by regulatory actions taken in pursuit of possible mitigation measures identified in the study, planning activities, and municipal investment decisions.
- Up to **2 points** for clear description of plans for how any future maintenance needs of or updates to the proposed project would be addressed to ensure the project’s goals continue in the long-term.
 - **For Project Type 1:** Planning, Assessments, Capacity Building, and Regulatory Updates—
 - Describe how the project deliverables will be utilized to continue local resilience work (e.g., regular meetings to track identified plan actions, list anticipated town meeting dates and/or plan to approve updated regulations, how data collection or modeling will support current/scheduled local efforts, etc.)
 - If applicable, how will the plan, assessment, or regulation be updated in the future to make sure it stays current?
 - **For Project Type 2:** Design and Permitting – Describe the path forward for the project – construction, further regulatory approval, potential funding sources. Describe any initial plans for how the asset would be maintained into the future if/when implemented.
 - **For Project Type 3:** Construction and On-the-Ground Implementation – Will this project produce an operation and maintenance plan? If applicable, who is responsible for future maintenance? If applicable, what is the plan for replacing the asset at the end of its useful life and how will you ensure the replacement asset is also resilient?

This Type 1 project is intended as a first step towards finding and acting upon solutions (preferably nature-based) for the River Road area and other areas in Town vulnerable to Merrimack River flooding. Once we have the study results showing vulnerabilities over near-, mid-, and long-term periods, as well as potential solutions, we will work to develop consensus on a plan to preserve the transportation routes and recreational resources (whether through bank stabilization, road relocation, or other measures the study may suggest) and to devise municipal actions, such as regulatory provisions, to mitigate the problems identified. We are interested in MVP 2.0 and may use that as a springboard for further action grant requests to implement solutions for the River Road area's climate vulnerabilities. The CCRC has met monthly since its inception and will continue to do so to address Town vulnerabilities. The community outreach portion of this project will set a critical factual baseline and engender trust among residents for any future proposed mitigation strategies.

Members of the CCRC have been taking training in MORIS and have reached out to Massachusetts CZM for technical guidance. One aspect of this effort will be to follow updates to the models that project climate change vulnerabilities associated with Merrimack River flooding.

7. NEED FOR FINANCIAL ASSISTANCE (6 POINTS)

- Up to **4 points** based on the equalized valuation per capita, **to be completed by EEA**
- Up to **2 points** for financial need as demonstrated through applicant narrative, as described below:
 - Demonstration that the applicant budget cannot accommodate this project, including specific examples beyond regular budgetary constraints.
 - Demonstration that other grant programs were considered, and it was determined that MVP was the best programmatic fit.
 - Demonstration that MVP funding would clearly address a funding gap that would make an otherwise robust project unlikely to be implemented.

West Newbury has virtually no commercial tax base, and a significant proportion of its population is elderly on fixed incomes. As shown on the Town's [Capital Improvement Program](#), future expenses, particularly for possible development of a new municipal water source; the repair, maintenance and possible replacement of the elementary school; and for water main replacements of 1936-era infrastructure, are extraordinarily high. Given these and other competing demands, it is not realistic to expect the Town to vote to pay for the entire cost of this project. While the CZM Coastal Resilience Grant *could* be a very good fit, West Newbury is just outside of the area eligible for that grant. We are considering future grants related to the update of our Hazard Mitigation Plan, but the timing is such that grants would need to wait for completion of the new plan.

8. PROJECT FEASIBILITY, SUPPORT, AND MANAGEMENT (6 POINTS)

- Up to **2 points** for a description of the project team's technical, financial, and management capacity. (Note: If the applicant has a previously awarded MVP Action Grant that will be ongoing at the same time as this proposed project, please list that grant and detail your community's capacity to manage multiple grants in FY24. If the applicant also plans on applying for the FY24 pilot round of the MVP 2.0 program, please also describe capacity to take on that project in addition to this one.)

Please see GEI Consultants' suggested scope of work and task list to aid the Town in applying for an MVP Action Grant in 2023, which is an attachment to this grant application. In that document, GEI outlines its credentials and the tasks that it will complete for this grant. As noted, the Town has already voted to appropriate \$50,000 in matching funds and it has assigned Christine Wallace, P.E., DPW Program and Project Manager, as manager of this grant. Her work is supported and supplemented by members of the CCRC. While interested in pursuing the MVP 2.0 program, West Newbury has determined not to participate in FY24. Moreover, to ensure that we will have the capacity to manage the grant, we are not going to invest resources in tracking and reporting matching in-kind support from the CCRC, other volunteers or Town staff including our Project Manager, which will amount to thousands of dollars.

- Up to **2 points** for letters of support from landowner, public, and/or community partners. Applications with 3+ letters of support from diverse groups (e.g., community-based organizations, local businesses, nonprofits, neighborhood groups, etc.) and a letter of support from landowner (if project is to take place on land that the applicant does not own) will be scored highest. Non-municipal eligible entities (except for Tribes) should include a letter of support from the municipality/ies related to the project. There is a place on the online form to upload support letters that have been combined into a single PDF document. Support letters should be submitted in this fashion and not sent in separately.

Please see the compiled letters of support provided with this grant application, comprising:

- Regional representatives
 - State Senator Bruce Tarr
 - City of Amesbury Lakes and Waterways Commission
 - City of Haverhill Conservation Commission
 - Town of Merrimac Board of Selectmen
 - Town of Merrimac Conservation Commission
 - Town of Groveland
 - Merrimack Valley Planning Commission
 - Merrimack River Watershed Council
 - PIE-Rivers Partnership
- River Road Residents
 - Susan Hale & John Boncher- 4 River Road
 - Brad & Libby Dore- 17 River Road
 - (NB: The CCRC and almost all Town committees providing letters of support contain residents of River Road and its environs)
- Recreational Users
 - Mass Audubon
 - Newburyport Birders

- Yankee Clipper Harbor Boat Tours
 - Town Departments
 - Department of Public Works
 - Department of Public Safety
 - Town Committees
 - Select Board
 - Capital Improvements Committee
 - Finance Committee
 - Conservation Commission
 - River Access Committee
 - Open Space Committee
 - Tree Committee
 - Planning Board
 - (NB: 4 out of 6 Energy and Sustainability Committee members are also members of the CCRC)
 - Other Interested Groups
 - West Newbury Garden Club
 - West Newbury Wild & Native
 - Gulf of Maine Institute (Climate Café sponsors)
- Up to **2 points** for good standing in the MVP program – based on timely submittal of progress reports, lack of project extensions, timely correspondence, and compliance with program guidelines, **to be completed by MVP program team.**

End of project narrative. [Note: An additional 10 points will also be allotted based on overall project quality at the discretion of the review committee.]

West Newbury River Road: Evaluating Vulnerabilities and Options to Promote Resiliency FY24/FY25 MVP Action Grant Scope/Budget								
Project Task Description	Deliverables	Approximate Start Date (first day of month)	Approximate End Date (last day of month)	Total Grant	In-Kind Match	Cash Match	Total Match	Total Project Cost
Tasks to be Completed by June 30, 2024								
Task 1: Project Kick-off, Management, and Reporting								
Task 1.1 - Internal Kick-off Meeting with Town, EEA, and Consultant (GEI Task 1.1)	Meeting Notes, Sign-in Sheet	SEP 2023	SEP 2023	\$ 1,500.00		\$ 1,000.00	\$ 1,000.00	\$2,500.00
Task 1.2 - Monthly Progress Reports FY24 (Lead: DPW Project Manager)	Monthly Progress Reports Submitted to MVP Regional Coordinator	SEP 2023	JUN 2024				\$ -	\$0.00
Task 1.3 - Monthly Coordination at Climate Change Resiliency Committee Meetings (CCRC) (Lead: DPW Project Manager)	Meeting Notes, Sign-in Sheet	SEP 2023	JUN 2024				\$ -	\$0.00
Total Task 1 Cost				\$ 1,500.00	\$ -	\$ 1,000.00	\$ 1,000.00	\$2,500.00
Task 2: Public Involvement and Community Engagement in FY24								
Task 2A.1 - Initial Community Engagement: Print and Digital Media Development (GEI Task 1.2)	Webpage development, West Newbury joining the Coastal Flood Community Science Project, copies of signage along River Road and Coffin	SEP 2023	DEC 2023	\$ 8,700.00		\$ 2,400.00	\$ 2,400.00	\$11,100.00
Task 2A.2 - Initial Community Engagement: Community Engagement Kickoff (GEI Task 1.3)	Presentation slides, recording of event	SEP 2023	DEC 2023	\$ 5,850.00		\$ 1,950.00	\$ 1,950.00	\$7,800.00
Task 2A.3 - Drone Public Event (included in Task 3.2 below, GEI Task 2.2)	Photos,short videos of event, sign-in sheet	SEP 2023	JAN 2024	\$ -		\$ -	\$ -	\$0.00
Task 2A.4 - Community Education Event (GEI Task 4.1)	Presentation slides, recording of event, sign-in sheet	JAN 2024	MAR 2024	\$ 5,175.00		\$ 1,725.00	\$ 1,725.00	\$6,900.00
Task 2A.5 - Planning Forward Event (GEI Task 4.2)	Presentation slides, sign in sheet	JAN 2024	MAR 2024	\$ 5,475.00		\$ 1,825.00	\$ 1,825.00	\$7,300.00
Task 2A.6 - Local Official MC-FRM Training (GEI Task 4.3)	Presentation slides, sign in sheet	JAN 2024	MAR 2024	\$ 5,475.00		\$ 1,825.00	\$ 1,825.00	\$7,300.00
Task 2B.1 - Kayaking Tour of Merrimack River	Meeting notes, photos, sign-in sheet. Tour given by Resiliency Committee me	SEP 2023	OCT 2023				\$ -	\$0.00
Task 2B.2 - Host Climate Cafe by Local Youth	Meeting notes, photos, sign-in sheet. Local youth to host community convers	DEC 2023	MAY 2024				\$ -	\$0.00
Task 2B.3 - Resiliency Committee Members to Offer River Tour of River Road Section with InterpretiveTour	Meeting notes, photos, sign-in sheet. River tour for up to 45 people to learn a	SEPT 2023	OCT 2023	\$ 750.00		\$ 250.00	\$ 250.00	\$1,000.00
Task 2B.4 - "Field Trips" Guided Walks/Tours Related to the River	Meeting notes, photos, sign-in sheet. Field trips - guided walks/tours related t	APR 2024	MAY 2024				\$ -	\$0.00
Task 2C.1 - G.A.R. Library Read Up A Storm Kickoff Event	Copies of publicity materials, meeting notes, photos, sign-in sheet. Library ev	OCT 2023	OCT 2023				\$ -	\$0.00
Task 2C.2 - G.A.R. Library Event/Talk with Corresponding Children's Storytime/Craft	Meeting notes, photos, sign-in sheet. Event/talk with corresponding children's	JAN 2024	APR 2024				\$ -	\$0.00
Total Task 2 Cost				\$ 31,425.00	\$ -	\$ 9,975.00	\$ 9,975.00	\$41,400.00
Task 3: Existing Conditions of Shoreline Survey (GEI Task 2)								
Task 3.1 - Existing Conditions of Shoreline Evaluation (GEI Task 2.1)	Technical memo	SEP 2023	JAN 2024	\$ 8,025.00		\$ 2,675.00	\$ 2,675.00	\$10,700.00
Task 3.2 - Drone Survey, including Drone Public Event (GEI Task 2.2)	Digital files of drone footage	SEP 2023	JAN 2024	\$ 4,275.00		\$ 1,425.00	\$ 1,425.00	\$5,700.00
Total Task 3 Cost				\$ 12,300.00	\$ -	\$ 4,100.00	\$ 4,100.00	\$16,400.00
Task 4: Existing Conditions of Culverts Survey (GEI Task 3)								
Task 4.1 Existing Conditions of Culverts Survey (GEI Task 3)	Technical memo	SEP 2023	JAN 2024	\$ 6,900.00		\$ 2,300.00	\$ 2,300.00	\$9,200.00
Total Task 4 Cost				\$ 6,900.00	\$ -	\$ 2,300.00	\$ 2,300.00	\$9,200.00
Task 5: Vulnerability Study (GEI Task 5)								
Task 5.1 - GIS Data Compilation (GEI Task 5.1)	Digital GIS files	SEP 2023	JUNE 2024	\$ 3,600.00		\$ 1,200.00	\$ 1,200.00	\$4,800.00
Task 5.2 - Merrimack River Flood Risk Analysis (GEI Task 5.2)	Report with inundation maps	SEP 2023	JUNE 2024	\$ 18,525.00		\$ 6,175.00	\$ 6,175.00	\$24,700.00
Task 5.3 - River Road Flood Risk Analysis (GEI Task 5.3)	Technical memo	SEP 2023	JUNE 2024	\$ 15,000.00		\$ 5,000.00	\$ 5,000.00	\$20,000.00
Total Task 5 Cost				\$ 37,125.00	\$ -	\$ 12,375.00	\$ 12,375.00	\$49,500.00
TOTAL PROJECT COST FY24				\$ 89,250.00	\$ -	\$ 29,750.00	\$ 29,750.00	\$ 119,000.00

West Newbury River Road: Evaluating Vulnerabilities and Options to Promote Resiliency FY24/FY25 MVP Action Grant Scope/Budget								
Project Task Description	Deliverables	Approximate Start Date (first day of month)	Approximate End Date (last day of month)	Total Grant	In-Kind Match	Cash Match	Total Match	Total Project Cost
Tasks to be Completed by June 30, 2025								
Task 6: Project Management and Reporting								
Task 6.1 - Monthly Progress Reports FY25 (Lead: DPW Project Manager)	Monthly Progress Reports Submitted to MVP Regional Coordinator	JUL 2024	JUNE 2025				\$ -	\$0.00
Task 6.2 - Monthly Coordination at CCRC Meetings (Lead: DPW Project Manager)	Meeting Notes, Sign-in Sheet	JUL 2024	JUNE 2025				\$ -	\$0.00
Task 6.3 - Project Case Study (Lead: DPW Project Manager)	Final Case Study Report, PowerPoint slide, roject photos	APR 2025	JUNE 2025				\$ -	\$0.00
Total Task 6 Cost				\$ -	\$ -	\$ -	\$ -	\$0.00
Task 7: Public Involvement and Community Engagement in FY25								
Task 7A.1 - Community Site Visit (GEI Task 6.1)	Photos of Event	JUL 2024	SEP 2024	\$ 4,725.00		\$ 1,575.00	\$ 1,575.00	\$6,300.00
Task 7A.2 - Public Project Update (GEI Task 6.2)	Presentation slides, webpage update with StoryMap	JUL 2024	SEP 2024	\$ 8,775.00		\$ 2,925.00	\$ 2,925.00	\$11,700.00
Task 7A.3 - Final Public Meeting (GEI Task 9)	Presentation slides, recording of event	JAN 2025	MAR 2025	\$ 9,150.00		\$ 3,050.00	\$ 3,050.00	\$12,200.00
Task 7B.1 - Host Climate Cafe by local youth	Meeting notes, photos, sign-in sheet.Local youth to host community conversa	DEC 2024	MAY 2025				\$ -	\$0.00
Task 7B.2 - Develop Interpretive Tour with Harbor Tours for their Routine Tours on Merrimack River (Haverhill section)	Documents and Training Materials used for training Harbor Tour Staff. Harbo	MAY 2025	JUNE 2025				\$ -	\$0.00
Task 7C.1 - G.A.R. Library Storywalk Family Night (unveil new story & have program/craft related to it)	Meeting notes, photos, sign-in sheet.Storywalk family night (unveil new story	JULY 2024	JULY 2024				\$ -	\$0.00
Task 7C.2 - G.A.R. Library Begins publicizing Community Read	Printouts and materials used for Publicity for community read	JAN 2025	JAN 2025				\$ -	\$0.00
Task 7C.3 - G.A.R. Library Programs Related to the Chosen Book (talk/movie/kid's event)	Meeting notes, photos, sign-in sheet.Programs related to the chosen book (ta	FEB 2025	APR 2025				\$ -	\$0.00
Task 7C.4 - G.A.R. Library Community Read Book Discussion/Author talk	Meeting notes, photos, sign-in sheet. Community Read book discussion/auth	MAY 2025	JUNE 2025				\$ -	\$0.00
Total Task 7 Cost				\$ 22,650.00	\$ -	\$ 7,550.00	\$ 7,550.00	\$30,200.00
Task 8: Shoreline Stabilization Options and Locations (GEI Task 7)								
Task 8.1 Shoreline Stabilization Options and Locations (GEI Task 7)	Technical Memo	JUL 2024	DEC 2024	\$ 11,625.00		\$ 3,875.00	\$ 3,875.00	\$15,500.00
Total Task 8 Cost				\$ 11,625.00	\$ -	\$ 3,875.00	\$ 3,875.00	\$15,500.00
Task 9: Infrastructure Flood Adaptation Options (GEI Task 8)								
Task 9.1 Infrastructure Flood Adaptation Options (GEI Task 8)	Technical Memo	JUL 2024	DEC 2024	\$ 13,500.00		\$ 4,500.00	\$ 4,500.00	\$18,000.00
Total Task 9 Cost				\$ 13,500.00	\$ -	\$ 4,500.00	\$ 4,500.00	\$18,000.00
Task 10: Final Report and Continuing Webpage Development (GEI Task 10)								
Task 10.1 - Final Report (GEI Task 10.1)	Draft Report, Final Report	JAN 2025	JUNE 2025	\$ 11,325.00		\$ 3,775.00	\$ 3,775.00	\$15,100.00
Task 10.2 - Continuing Wepage Development (GEI Task 10.2)	Updated Webpage	JAN 2025	JUNE 2025	\$ 1,650.00		\$ 550.00	\$ 550.00	\$2,200.00
Total Task 10 Cost				\$ 12,975.00	\$ -	\$ 4,325.00	\$ 4,325.00	\$17,300.00
TOTAL PROJECT COST FY25				\$ 60,750.00	\$ -	\$ 20,250.00	\$ 20,250.00	\$ 81,000.00
TOTAL PROJECT COST OVERALL				\$ 150,000.00	\$ -	\$ 50,000.00	\$ 50,000.00	\$ 200,000.00

Match 25.00%

MVP Yearly Progress Report Template

MUNICIPAL VULNERABILITY PREPAREDNESS PROGRAM FY 24



Executive Office of Energy and Environmental Affairs

Municipal Vulnerability Preparedness Program Yearly Progress Report

Date: May 1, 2023

Municipality: West Newbury

Local MVP Contact Name: Elisa Grammer

1. Please list your municipalities' top priority actions, in order of priority, identified through the MVP planning process.

As set forth in the MVP process [Final Report](#), the following priorities were identified.

The report did not identify an order of priority for each item.

1. Emergency communications and communication infrastructure
 2. Open Space Preservation (Open Space, Agriculture, and Forests) –*invasive species /native replacements is within this priority*
 3. Water Supply Development and Water Supply Protection Planning
 4. Municipal microgrid with back-up storage (green energy) for emergency shelter and senior housing
 5. Improved educational communications around climate change impacts and preparedness
 6. Vulnerable populations (elder, disabled, etc.)
 7. Stormwater and flood management, operation and maintenance (includes roads) –*River Road flooding & erosion and storm water management are within the priority*
 8. Promote Town-owned electric vehicles and equipment, reduce waste, and increase compost
2. Has your Core Team reconvened since your Listening Session? If so, describe the process and any revisions or updates your team made to the original MVP Report. Please list your MVP Core Team members and note any new members.

In the 35 months since the [Listening Session](#) was held on June 25, 2020, the Core Team has met at least 34 times—and has held a number of non-quorum meetings and exchanges with the consultant for the proposed MVP Action grant project. The MVP Core Team is now the [West Newbury Climate Change Resiliency Committee](#), with a regular meeting time of the 2nd Wednesday of each month.

While no changes have been made to the MVP Report, the team has explored opportunities for all priorities identified. The Town Energy and Sustainability Committee has been actively working to advance #8. We have made some progress on (1) #7 the undermining/erosion/flooding of River Road (adjacent to the Merrimack) (2) #2 controlling invasive plants and replacing them with natives, (3) #8 promoting Town-owned electric vehicles, and (4) #5 Improved educational communications around climate change impacts and preparedness.

Current MVP Core Team/Climate Change Resiliency Committee members are:

NAME	ROLE	COMMITTEES/ACTIVITIES	TERM
Elisa Grammer	Chair & Clerk	Energy & Sustainability, Capital Improvements, Historical, River Access	June 30, 2024
Elizabeth Callahan	Member	Energy & Sustainability	June 30, 2023
Richard Parker	Member	Select Board, Energy & Sustainability, Capital Improvements	June 30, 2023
Michael Dacey	Member	River Road Resident, Engineering Consultant	June 30, 2023
Arthur (Chip) Wallace	Member	Energy & Sustainability	June 30, 2023
Nancy Pau	Member	Wildlife Biologist for Federal Agency, WN Wild & Native	June 30, 2023

- Discuss any other work related to the MVP process or climate change resiliency in the municipality. In what ways has your municipality used the outcomes of your workshop in other planning efforts (e.g., updating existing local plans)?

A number of related projects have been completed or are ongoing. For instance

- In furtherance of #7, in support of a proposed MVP Action Grant to analyze vulnerabilities and potential solutions to flood risk from the Merrimack at River Road and environs, in October 2022 West Newbury Town Meeting voted unanimously to appropriate \$50,000 in matching funds for public activities, meetings and outreach to inform and engage citizens and Town officials, an existing conditions survey of the areas shown susceptible to Merrimack River flooding, a study of culverts and stormwater infrastructure, a report of vulnerabilities in 2030, 2050, and 2070, and options for shoreline stabilization as well as other solutions (preferably nature-based) for longer timeframes.

- In furtherance of #7, the Town assigned a professional staff member, Christine Wallace, PE, to shepherd the MVP Action Grant application and work with consultants on this.
- In furtherance of #5, the Town's G.A.R. Library has conducted numerous programs relating to environmental issues, such as [creation of native habitats](#), [earth day events](#), and programs including ["Climate Change: What it Means for New England."](#)
- In furtherance of action item # 5 & 8, the Energy & Sustainability Committee
 - obtained a Green Communities grant to promote additional energy efficiency in Town offices,
 - obtained funding at the 2022 Town Meeting for a study of potential additional sites for PV solar installations, and held an exhibition of Committee member-owned electric vehicles at Town Meeting,
 - obtained approval at 2022's Fall Town Meeting for exploration of a municipal aggregation electric purchasing program, under which more power from renewable resources will be available to the Town, and
 - commissioned a carbon inventory for the Town, began consideration of means to reduce the Town's carbon footprint, and gave a report about this at the Spring 2023 Town Meeting.
- In furtherance of action item #8, in September 2021, the West Newbury Select Board adopted the following policy: "As of the beginning of FY 2024 (July 1, 2023), the Town will acquire no new fossil fuel powered equipment (e.g. vehicles, power tools, construction/agricultural implements, building HVAC changes or upgrades), but instead will acquire electrically powered equipment alternatives, unless it can be demonstrated that there is currently no functionally viable and economically practical electric alternative available." Partially in response to that policy, the Department of Public Works is currently seeking to replace a combustion engine pickup truck with a Ford F-150 Lightning electric truck. In 2021 and 2022 the West Newbury Police Department purchased two hybrid SUV vehicles as replacements for existing police cruisers. The new cruiser approved at Spring 2023 Town meeting will also be a hybrid vehicle.
- In furtherance of item #7, the Town Department of Public Works in conjunction with the Conservation Commission, Planning Board, and others, is working to improve the Town's regulation of storm water and has introduced a new storm water bylaw.
- In furtherance of action items #2 & 5, the "West Newbury Wild & Native" (WN2) group has formed (with core membership shared with the Climate Change Resiliency Committee) and has been active in educating townspeople about the need to control invasive plants and replace them with natives. Actions have included a [numerous presentations and webinars](#), and [campaigns](#) including a bittersweet challenge and implementation of a Japanese knotweed demonstration project on town-owned land in the summer. Two Native Demonstration Gardens have been secured in highly visible areas, including a local farm next to a popular reservoir trail, and the entrance of Town athletic fields and Town recycle center. In Winter 2021, WN2 members worked with the School Building Committee and Contractors to change out 1,547 non-native plants for native species at the new regional school located in West Newbury, garnering strong citizen support from the Towns of West Newbury, Groveland, Merrimac and the [local newspaper](#) on the importance of landscaping with native plants.
- In furtherance of action item #2, the Open Space Committee has continued to pursue opportunities to use Community Preservation Act funds to [acquire additional open space](#) and at its April 24, 2023 Town Meeting, West Newbury voted unanimously to acquire 32 acres of pristine forest essential to the Indian River and Merrimack River watersheds.
- In furtherance of action items #2 & 5, the West Newbury Tree Committee has published [educational materials on its webpage](#), set up a [tree walk](#) at West Newbury's most popular recreation area, conducted [tree giveaways](#), prepared a [report about the spotted lantern fly and emerald ash borer](#), obtained [Tree City, USA](#) status for West Newbury, [conducted a survey](#) about residents' concerns and desires for action on trees, and has provided webinars about trees in Town.

- In furtherance of #2, #5, and #7, Pentucket High School teachers and students have been working with Gulf of Maine Institute to restore a tributary stream that flows through the high school/middle campus in West Newbury to the Merrimack River. Work is funded through the NOAA B-wet grant, and students are working with School Administrators to re-wild more of the campus to address upstream stormwater runoff and provide hands-on educational experience for students.
- In furtherance of #7, the Climate Change Resiliency Committee reached out to River Road residents and the Towns of Merrimack and Groveland about erosion and flooding along the Merrimack River. It conducted at least three site walks along River Road and has explored potential nature-based solutions to address riverbank and road erosion issues with River Road.
- In furtherance of #3, the Town voted at Spring 2023 Town Meeting to appropriate \$50,000 to fund an engineering study related to a potential new wellfield at the Merrimack riverbank.

4. Please list any grants that your municipality has applied for, or received, to implement actions from your MVP report. Please note grant awards or applications that advanced priority actions.

In furtherance of #8, the Energy and Sustainability Committee applied again and was awarded a Green Communities grant to increase energy efficiency in Town offices. Two \$5K Green Communities Competitive Grants have been awarded and applied to help fund hybrid Police cruisers, also in furtherance of #8. Because of limited Town staffing resources, West Newbury is necessarily conservative in its selection of grants.

5. Please list any other steps that your municipality has taken towards implementing your priority actions.

In furtherance of #7, the Department of Public Works has developed a [public outreach and educational resources initiative](#) with Greenscapes Massachusetts and has developed a variety of MS4 programs, including an [MS4 Illicit Discharge Detection and Elimination \(IDDE\) Plan](#).

6. Please list any potential next steps to advance priority actions during the next year.

Storm water management and the threat of erosion and flooding at the Merrimack remain high priorities and the Climate Change Resiliency Committee has spent many hours working on an Action Grant application to study this and will continue to work to engage the community about these threats.

7. Please note any difficulties or challenges the community has identified through the MVP planning process or while seeking to implement priority actions and any steps the community has identified to address these challenges.

While not an environmental justice community, West Newbury is still severely challenged by lack of Town staff and resources to support climate change resilience preparation. The Climate Change Resiliency

Committee is an entirely volunteer group whose members, while committed, are limited in their ability to navigate the grant processes.

While we have reached out to a number of neighboring communities and others, we have not had substantial success in efforts to share the burdens of grant applications and management with other communities or entities.

8. Please identify any data needs or information gaps that the state could help fill.

Clearly the MORIS tool is very important in assessing West Newbury's risks from Merrimack River coastal flooding. The Climate Change Resiliency Committee has reviewed website materials, videos, etc. explaining this tool, is taking CZM MORIS training, and has reached out to MA CZM, and still would like additional help to fully understand the tool's predictions. For instance, in 2030 MORIS shows in black the Merrimack River and some areas along its shoreline, indicating an annual 100% chance of some coastal flooding. Does MORIS give an idea of how many times per year flooding should be expected? We also need help in understanding how to explain MORIS' projections to Town staff and residents, and that is part of a FY24-FY25 Action Grant proposal.



Town of West Newbury

**381 Main Street
West Newbury, Massachusetts 01985**

**Angus Jennings, Town Manager
978-363-1100, Ext. 111 Fax 978-363-1826
townmanager@wnewbury.org**

May 3, 2023

Kara Runsten, Program Director
Municipal Vulnerability Preparedness Program
MA Executive Office of Energy & Environmental Affairs
100 Cambridge Street, Suite 900
Boston, MA 02114

Re: Statement from Applicant Regarding 25% MVP Action Grant Match Commitment

Dear Ms. Runsten:

In accordance with the requirements of the FY24 Municipal Vulnerability Preparedness (MVP Action Grant Application (RFR ENV 24 MVP 01)), on behalf of the Town of West Newbury, I acknowledge and accept that:

- 1) West Newbury commits to match, at a minimum, 25% of the total project cost using cash or in-kind contributions (or a combination of the two) and acknowledges that the funding under this grant will be provided on a reimbursement basis; and
- 2) All matching funds provided by West Newbury have been approved and appropriated at Town Meeting. On October 24, 2022, the Town voted unanimously to transfer the sum of \$50,000.00 from Free Cash to provide matching funds upon award of a Municipal Vulnerability Preparedness grant in the FY23 grant round.

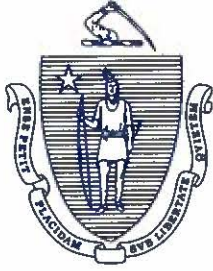
Please note the West Newbury Project Manager will be contributing hours to the management tasks, but these are not included in the budget since they are not needed to meet the match requirement.

Sincerely,

Angus Jennings, Town Manager
Town of West Newbury

LETTERS OF SUPPORT

- Regional representatives
 - [State Senator Bruce Tarr](#)
 - [City of Amesbury Lakes and Waterways Commission](#)
 - [City of Haverhill Conservation Commission](#)
 - [Town of Merrimac Board of Selectmen](#)
 - [Town of Merrimac Conservation Commission](#)
 - [Town of Groveland](#)
 - [Merrimack Valley Planning Commission](#)
 - [Merrimack River Watershed Council](#)
 - [PIE-Rivers Partnership](#)
- River Road Residents
 - [Susan Hale & John Boncher- 4 River Road](#)
 - [Brad & Libby Dore- 17 River Road](#)
 - (NB: The CCRC and almost all Town committees providing letters of support contain residents of River Road and its environs)
- Recreational Users
 - [Mass Audubon](#)
 - [Newburyport Birders](#)
 - [Yankee Clipper Harbor Boat Tours](#)
- Town Departments
 - [Department of Public Works](#)
 - [Department of Public Safety](#)
- Town Committees
 - [West Newbury Select Board](#)
 - [Capital Improvements Committee](#)
 - [Finance Committee](#)
 - [Conservation Commission](#)
 - [River Access Committee](#)
 - [Open Space Committee](#)
 - [Tree Committee](#)
 - [Planning Board](#)
 - (NB: 4 out of 6 Energy and Sustainability Committee members are also members of the CCRC)
- Other Interested Groups
 - [West Newbury Garden Club](#)
 - [West Newbury Wild & Native](#)
 - [Gulf of Maine Institute \(Climate Café sponsors\)](#)



The Commonwealth of Massachusetts
MASSACHUSETTS SENATE
OFFICE OF THE MINORITY LEADER

SENATOR BRUCE E. TARR
MINORITY LEADER
First Essex and Middlesex

STATE HOUSE, ROOM 308
BOSTON, MA 02133-1053
TEL. (617) 722-1600
FAX: (617) 722-1310

BRUCE.TARR@MASENATE.GOV
WWW.MASENATE.GOV

April 20, 2023

Angus Jennings, Town Manager
Town of West Newbury
Town Office Building
381 Main Street
West Newbury, MA 01985

Re: Town of West Newbury - MVP Action grant: Evaluating Vulnerabilities and Options to Promote Resiliency: River Road and Environs

Dear Mr. Jennings,

I am writing to express my strong and enthusiastic support for the town's proactive approach to addressing the impacts of climate change, and its application for MVP Action Grant funding of the necessary study of one specific element of that approach. More specifically, the town is seeking through this grant to gain valuable insight into the issue of Merrimack River flooding, particularly as it affects River Road and the surrounding area over various windows of time. This insight and analysis would then be applied by the town and its residents to plan and undertake actions to address the risks of flooding in well planned, timely, and cost - effective ways.

West Newbury's strong commitment to this reasoned course of action is evidenced and emphasized by the unanimous vote at the town meeting of October 2022 to appropriate \$50,000 in matching funds for the prospective MVP Action Grant which is the subject of this application, which encompasses not only River Road, but extends also to the lower portions of Coffin and Bridge Streets, and includes the consideration of flood risk and road stability concerns at locations with significant vulnerability to flooding from the Merrimack. The project would evaluate risks from more frequent and extreme flooding events that are likely to occur as a result of climate change and sea level rise, thus equipping the town to identify, and engage in the important process of building consensus around, an action plan with an array of options targeted at the time frames of 2030, 2050, and 2070.

Importantly, the focus area of this effort in West Newbury facilitates critical transportation access for student transportation in buses and passenger vehicles, commuters, and others transiting the Rocks Village Bridge, which is itself an essential component of regional transportation infrastructure upon which travel in the area is highly dependent. The area also includes roadways essential for public safety and access to homes, and to abundant natural resources with recreational activities that range from bird watching to fishing, biking, hiking, to other similar activities. Given all that is at risk from elevated sea levels and flooding, it is imperative that the town move forward to properly evaluate and characterize the vulnerability of this area, and proceed along the challenging path of developing fact-

based, properly planned actions that are the product of deliberations by citizens who are informed and empowered to chart a sound course of actions to meet the potential threats that lie ahead.

I applaud the town for pursuing this course and encourage the award of this grant to fuel that pursuit.

Thank you for your consideration.

Sincerely,


Bruce Tarr
State Senator
Minority Leader



City of Amesbury Lakes and Waterways Commission

Angus Jennings, Town Manager
Town of West Newbury
Town Office Building
381 Main Street
West Newbury, MA 01985

April 20, 2023

Re: Town of West Newbury – MVP Action Grant: Evaluating Vulnerabilities and Options to Promote Resiliency: River Road and Environs

Dear Mr. Jennings:

The Amesbury Lakes and Waterways Commission would like to express its full support for West Newbury's climate change study intended to gain a shared understanding of Merrimack River flooding and related risks at River Road and its environs over different timeframes to enable the Town and its residents to prepare and plan for adverse effects of climate change.

The Town seeks MVP Action Grant funds to address flood risk and road stability concerns at vulnerable locations subject to Merrimack River flooding. The project will evaluate the risks from more frequent and extreme flooding events caused by climate change and sea level rise, and will enable the Town to identify and develop consensus about resiliency options. Specifically, the project will focus on River Road and the lower portions of Coffin and Bridge Streets where they are subject to Merrimack River flooding.

Amesbury is affected by the same disruptive impacts of climate change, and the cliché, "Everyone lives downriver" is literally true in this case. Amesbury has previously obtained MVP funds and is still grappling with the same set of problems, and it is to our advantage to have our upriver neighbors also engaged. Evaluating the area's climate change vulnerability, informing the citizenry, and fostering consensus for nature-based resiliency solutions is essential to our ability to plan and prepare for the future.

Thank you for your consideration.

Sincerely,

Thomas P. Murphy
Acting Chair, Amesbury Lakes and Waterways Commission



Haverhill

Conservation Department
Phone: 978-374-2334 Fax: 978-374-2366
rmoore@cityofhaverhill.com
conservation@cityofhaverhill.com

Angus Jennings, Town Manager
Town of West Newbury
Town Office Building
381 Main Street
West Newbury, MA 01985

April 21, 2023

Re: Town of West Newbury – MVP Action Grant: Evaluating Vulnerabilities and Options to Promote Resiliency: River Road and Environs

Dear Mr. Jennings:

The Haverhill Conservation Commission offers its full support for West Newbury's climate change study intended to gain a shared understanding of Merrimack River flooding and related risks at River Road and its environs over different timeframes to enable the Town and its residents to prepare and plan for adverse effects of climate change.

In November 2022 West Newbury Town Meeting voted unanimously to appropriate \$50,000 in matching funds for a study of climate change impacts on River Road and its environs. The Town seeks MVP Action Grant funds to address flood risk and road stability concerns at vulnerable locations subject to Merrimack River flooding. The project will evaluate the risks from more frequent and extreme flooding events caused by climate change and sea level rise, and will enable the Town to identify, develop consensus about, and plan for an array of near-(2030), mid-(2050), and long-term (2070) resiliency options. Specifically, the project will focus on River Road and the lower portions of Coffin and Bridge Streets where they are subject to Merrimack River flooding.

The Haverhill Conservation Commission supports this project. The affected area in West Newbury provides critical transportation access for school buses, commuters, and others traversing Rocks Village Bridge; includes roadways essential for public safety, access to homes; and serves as a key recreational resource for birdwatching, fishing, biking, hiking, and similar activities. Evaluating the area's climate change vulnerability, informing the citizenry, and fostering nature-based consensus resiliency solutions will be essential to our ability to plan and prepare for the future.

Thank you for your consideration.

Sincerely,

Frederick Clark, IV, RLA
Chair of the Haverhill Conservation Commission



TOWN OF MERRIMAC
OFFICE OF THE BOARD OF SELECTMEN
2-8 School Street, Merrimac, MA 01860
TEL (978) 346-8862
E-MAIL selectmen@townofmerrimac.com

April 11, 2023

Angus Jennings, Town Manager
Town of West Newbury
Town Office Building
381 Main Street
West Newbury, MA 01985

Re: Town of West Newbury – MVP Action Grant: Evaluating Vulnerabilities and Options to Promote Resiliency: River Road and Environs

Dear Mr. Jennings:

We would like to express our full support for West Newbury's climate change study intended to gain a shared understanding of Merrimack River flooding and related risks at River Road and its environs over different timeframes to enable the Town and its residents to prepare and plan for adverse effects of climate change.

In November 2022, West Newbury Town Meeting voted unanimously to appropriate \$50,000 in matching funds for a study of climate change impacts on River Road and its environs. The Town seeks MVP Action Grant funds to address flood risk and road stability concerns at vulnerable locations subject to Merrimack River flooding. The project will evaluate the risks from more frequent and extreme flooding events caused by climate change and sea level rise and will enable the Town to identify, develop consensus about and plan for an array of near-(2030), mid-(2050), and long-term (2070) resiliency options. Specifically, the project will focus on River Road and the lower portions of Coffin and Bridge Streets where they are subject to Merrimack River flooding.

Merrimac Board of Selectmen supports this project. The affected area in West Newbury provides critical transportation access for school buses, commuters, and others traversing Rocks Village Bridge; includes roadways essential for public safety, access to homes; and serves as a key recreational resource for birdwatching, fishing, biking, hiking, and similar activities. Evaluating the area's climate change vulnerability, informing the citizenry, and fostering nature-based consensus resiliency solutions will be essential to our ability to plan and prepare for the future.

Thank you for your consideration.

Sincerely,
Merrimac Board of Selectmen


Benjamin S. Beaulieu
Chairman

April 12, 2023

Mr. Angus Jennings, Town Manager
Town of West Newbury
Town Office Building
381 Main Street
West Newbury, MA 01985

Subject: Town of West Newbury – MVP Action Grant: Evaluating Vulnerabilities and
Options to Promote Resiliency: River Road and Environs

Dear Mr. Jennings:

The Merrimac Conservation Commission would like to express our commission's full support for West Newbury's climate change study intended to gain a shared understanding of Merrimack River flooding and related risks at River Road and its environs over different timeframes to enable the Town and its residents to prepare and plan for adverse effects of climate change.

In November 2022 West Newbury Town Meeting voted unanimously to appropriate \$50,000 in matching funds for a study of climate change impacts on River Road and its environs. The Town seeks MVP Action Grant funds to address flood risk and road stability concerns at vulnerable locations subject to Merrimack River flooding. The project will evaluate the risks from more frequent and extreme flooding events caused by climate change and sea level rise, and will enable the Town to identify, develop consensus about, and plan for an array of near-(2030), mid-(2050), and long-term (2070) resiliency options. Specifically, the project will focus on River Road and the lower portions of Coffin and Bridge Streets where they are subject to Merrimack River flooding.

The Merrimac Conservation Commission supports this project. The affected area in West Newbury includes the Merrimack River which Merrimac shares with the town and is mapped as priority and estimated habitat for several threatened or endangered species including the Atlantic Sturgeon and Bald Eagle. The Merrimack River is a critical resource in this area and serves as a key recreational resource for birdwatching, fishing, biking, hiking, and similar activities. Evaluating the area's climate change vulnerability, informing the citizenry, and fostering nature-based consensus resiliency solutions to mitigate increased flooding, erosion of the riverbanks, and degradation of water quality will be essential to our ability to plan and prepare for the future.

Thank you for your consideration.

Sincerely,

Jon Pearson, Chairman
Merrimac Conservation Commission



Town of Groveland
Office of the Town Administrator
183 Main Street
Groveland, Massachusetts 01834



Angus Jennings, Town Manager
Town of West Newbury
Town Office Building
381 Main Street
West Newbury, MA 01985

April 10, 2023

RE: Town of West Newbury – MVP Action Grant: Evaluating Vulnerabilities and Options to Promote Resiliency: River Road and Environs

Dear Mr. Jennings:

We would like to express the Town's full support for West Newbury's climate change study intended to gain a shared understanding of Merrimack River flooding and related risks at River Road and its environs over different timeframes to enable the Town and its residents to prepare and plan for adverse effects of climate change.

The project will evaluate the risks from more frequent and extreme flooding events caused by climate change and sea level rise, and will enable the Town to identify, develop consensus about, and plan for an array of near-(2030), mid-(2050), and long-term (2070) resiliency options. Specifically, the project will focus on River Road and the lower portions of Coffin and Bridge Streets where they are subject to Merrimack River flooding.

The Town of Groveland, as neighbors, support this project. The affected area in West Newbury provides critical transportation access for school buses, commuters, and others traversing Rocks Village Bridge; includes roadways essential for public safety, access to homes; and serves as a key recreational resource for birdwatching, fishing, biking, hiking, and similar activities. Evaluating the area's climate change vulnerability, informing the citizenry, and fostering nature-based consensus resiliency solutions will be essential to our region's ability to plan and prepare for the future.

Thank you for your consideration.

Sincerely,

Rebecca Oldham
Rebecca Oldham
Town Administrator

Annie Schindler
Annie Schindler
Town Planner/Environmental Coordinator

Mike Dempsey
Mike Dempsey
Conservation Commission/ Community Preservation, Chair

Kara Runsten, Program Director
Municipal Vulnerability Preparedness Grant Program
100 Cambridge Street
Boston, MA 02114

April 21, 2023

Re: Town of West Newbury – MVP Action Grant: Evaluating Vulnerabilities and Options to Promote Resiliency: River Road and Environs

Dear Ms. Runsten:

I would like to express my full support for West Newbury's Municipal Vulnerability Preparedness (MVP) Action Grant proposal to fund a climate change study intended to assess the risks of Merrimack River flooding. The proposed study will also identify related hazards along the extent of River Road and will provide information that enables the Town and its residents to prepare and plan for some of the adverse effects associated with climate change.

This project comes at an essential time in West Newbury as frequent and extreme flooding events caused by climate change and sea level rise have become pressing concerns. The opportunity to evaluate the risks from these hazards, develop a consensus about, and plan for an array of near-(2030), mid-(2050), and long-term (2070) resiliency options will greatly promote West Newbury's emergency preparedness. Beyond regional support, this effort has already garnered positive attention at the community level, with a vote in October 2022 at the West Newbury Town Meeting to unanimously appropriate \$50,000 in match funds for an MVP action grant application to study climate change impacts on River Road and lower portions of Coffin and Bridge Street.

In summary, River Road in West Newbury is a critical transportation asset providing access for school buses, commuters, and others traversing the Rocks Village Bridge. The roadway is a key asset to the town in that it also provides a route for public safety access to homes and serves as a key access point for recreational activities including birdwatching, fishing, biking, hiking, and other active recreational activities. With funding from the MVP Program, West Newbury will be able to undertake this critically important climate vulnerability assessment and, in doing so, provide an educational opportunity for citizens, and foster the creation of nature-based resiliency solutions. We fully support the Town's application and respectfully request your favorable consideration of their proposal.

Sincerely,



Gerrard Whitten
Executive Director



The Voice of the Merrimack

April 11, 2023

Angus Jennings, Town Manager
Town of West Newbury
Town Office Building
381 Main Street
West Newbury, MA 01985

Re: Town of West Newbury – MVP Action Grant: Evaluating Vulnerabilities and Options to Promote Resiliency: River Road and Environs

Dear Mr. Jennings:

I would like to express Merrimack River Watershed Council's support for West Newbury's MVP Action Grant funded climate change study, intended to gain a shared understanding of Merrimack River flooding and related risks at River Road and its environs over different timeframes, and to enable the Town and its residents to prepare and plan for some of the adverse effects of climate change.

In October 2022 West Newbury Town Meeting voted unanimously to appropriate \$50,000 in matching funds for an MVP Action Grant application to study climate change impacts on River Road and the lower portions of Coffin and Bridge Streets, including flood risk and road stability concerns at vulnerable locations subject to Merrimack River flooding. The project will evaluate the risks from more frequent and extreme flooding events caused by climate change and sea level rise, and will enable the Town to identify, develop consensus about, and plan for an array of near-(2030), mid-(2050), and long-term (2070) resiliency options.

Merrimack River Watershed Council is acutely concerned with the impact of climate change and sea level rise along the Merrimack River corridor. The project area is of particular concern, for two reasons:

1 – The road network in this area is in close proximity to the tidal zone of the Merrimack. Much of this road network is at a low elevation, making it vulnerable to extreme tidal events. The impacts of sea-rise on lowlying roads are already being clearly demonstrated along the Merrimack during the biannual "King Tides," and we can expect these impacts to increase to monthly occurrences, coinciding with the monthly cycles of full moon tides.

2 – Historically, flood events in the lower Merrimack have had their greatest impact on areas where there are natural geological bottlenecks to the river's seaward flow. This area of the Merrimack is within one of the bottleneck zones, increasing its vulnerability in the event of a downriver-flowing flood. If a flood coincides with extreme high tide events, the result could be devastating.

The affected area in West Newbury provides critical transportation access for school buses, commuters, and others traversing Rocks Village Bridge; includes roadways essential for public safety and access to homes; and serves as a key recreational resource for birdwatching, fishing, biking, hiking, and similar activities. Evaluating the area's climate change vulnerability, informing the citizenry, and fostering nature-based consensus resiliency solutions will be essential to our ability to plan and prepare for the future.

Best regards,

A handwritten signature in black ink, reading "John Macone". The signature is written in a cursive style with a large, stylized "J" and "M".

John Macone
Policy and Education Specialist for the Merrimack River Watershed Council



*Increasing the resiliency of the
Parker, Ipswich, and Essex River
watersheds*



IPSWICH RIVER
WATERSHED
ASSOCIATION
The Voice of the River

Re: West Newbury River Road Climate Change Resiliency
FY24 Municipal Vulnerability Preparedness (MVP) Action Grant Project

To Whom it May Concern,

I am writing in support of the West Newbury's MVP grant to study climate change impacts to River Road. West Newbury has identified River Road between Coffin Street and Bridge Street as an area at risk of road failure due to flooding, underground seepage, and erosion.

The PIE-Rivers Partnership, of which the Ipswich River Watershed Association (IRWA) is a founding member, is a cross-watershed collaborative that implements partner-driven measures that promote clean water and healthy ecosystems. West Newbury is a member of this partnership as it encompasses part of the Parker River watershed. PIE-Rivers partners are dedicated to working collaboratively to restore the health of the rivers across the North Shore and to implement nature-based solutions to the greatest extent possible in order to improve climate resiliency throughout the region.

The project proposed for West Newbury's MVP grant aligns with the overall goals of the PIE-Rivers partnership as it will assess nature-based solutions to reduce the risk of infrastructure flooding. Advanced assessment will allow the Town to seek nature-based solutions to not only protect these natural resources, but propose strategies (such as living shorelines or properly sized culverts) that enhance and restore riparian and aquatic habitat. West Newbury's findings would benefit other members of the partnership who face similar threats from Climate Change, providing a roadmap for similar efforts and community discussion on this issue.

Sincerely,

A handwritten signature in black ink that reads 'Erin Bonney Casey'.

Erin Bonney Casey

Planning and Resiliency Program Manager, IRWA
Coordinator, PIE-Rivers Partnership

Angus Jennings, Town Manager
Town of West Newbury
Town Office Building
381 Main Street
West Newbury, MA 01985

April 15, 2023

Re: Town of West Newbury – MVP Action Grant: Evaluating Vulnerabilities and
Options to Promote Resiliency: River Road and Environs

Dear Mr. Jennings:

We would like to express our full support for West Newbury's climate change study intended to gain a shared understanding of Merrimack River flooding and related risks at River Road and its environs over different timeframes to enable the Town and its residents to prepare and plan for adverse effects of climate change.

In November 2022 West Newbury Town Meeting voted unanimously to appropriate \$50,000 in matching funds for a study of climate change impacts on River Road and its environs. The Town seeks MVP Action Grant funds to address flood risk and road stability concerns at vulnerable locations subject to Merrimack River flooding. The project will evaluate the risks from more frequent and extreme flooding events caused by climate change and sea level rise, and will enable the Town to identify, develop consensus about, and plan for an array of near-(2030), mid-(2050), and long-term (2070) resiliency options. Specifically, the project will focus on River Road and the lower portions of Coffin and Bridge Streets where they are subject to Merrimack River flooding.

As twenty three year West Newbury residents we support this project. The affected area in West Newbury provides critical transportation access for school buses, commuters, and others traversing Rocks Village Bridge; includes roadways essential for public safety, access to homes; and serves as a key recreational resource for birdwatching, fishing, biking, hiking, and similar activities. Evaluating the area's climate change vulnerability, informing the citizenry, and fostering nature-based consensus resiliency solutions will be essential to our ability to plan and prepare for the future.

Thank you for your consideration.

Sincerely,

Susan Hale
John D. Boncher

Angus Jennings, Town Manager
Town of West Newbury
Town Office Building
381 Main Street
West Newbury, MA 01985

April 13, 2023

Dear Mr. Jennings,

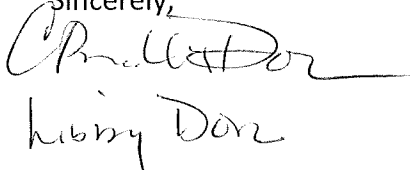
We would like to express our full support for West Newbury's climate change study intended to gain a shared understanding of Merrimack River flooding and related risks at River Road and its environs over different timeframes to enable the Town and residents to prepare and plan for adverse effects of climate change.

In November 2022 West Newbury Town Meeting voted unanimously to appropriate \$50,000 in matching funds for a study of climate change impacts on River Road and its environs. The Town seeks MVP Action Grant funds to address flood risk and road stability concerns at vulnerable locations subject to Merrimack River flooding. The project will evaluate the risks from more frequent and extreme flooding events caused by climate change and sea level rise, and will enable the Town to identify, develop consensus about, and plan for an array of near (2030), mid (2050) and long-term (2070) resiliency options. Specifically, the project will focus on River Road and lower portions of Coffin and Bridge Streets where they are subject to Merrimack River flooding.

We support this project. The affected area in West Newbury provides critical transportation access for school buses, commuters, and others traversing Rocks Village Bridge; includes roadways essential for public safety, access to homes; and serves as a key recreational resource for birdwatching, fishing, biking, hiking and similar activities. Evaluating the area's climate change vulnerability, informing the citizenry, and fostering nature-based consensus resiliency solutions will be essential to our ability to plan and prepare for the future.

Thank you for your consideration.

Sincerely,

A handwritten signature in black ink, appearing to read "Brad & Libby Dore". The signature is fluid and cursive, with the first name "Brad" being more prominent.

Brad & Libby Dore
17 River Road
West Newbury



Angus Jennings, Town Manager
Town of West Newbury
Town Office Building
381 Main Street
West Newbury, MA 01985

April 10, 2023

*Re: Town of West Newbury – MVP Action Grant: Evaluating Vulnerabilities
and Options to Promote Resiliency: River Road and Environs*

Dear Mr. Jennings,

I would like to express Mass Audubon's support for the development of a climate vulnerability assessment for West Newbury. This study will enable the Town and its residents to prepare and plan for the anticipated effects of climate change along the Merrimack River and elsewhere in the community.

As the Town voted in October 2022 to appropriate \$50,000 in matching funds for a study of climate vulnerability on the River Road area, it makes sense that you are now seeking an MVP Action Grant to fund the rest of the study. The importance of understanding the near-term, mid-term, and long-term flood risks to River Road, Coffin Street, Bridge Street and other low-lying areas is a critical first step towards the Town being able to identify and discuss options and come to consensus on the best ways forward.

In particular, the ability to assess for how nature-based solutions can be brought to bear is predicated on a solid understanding of the nature and sources of vulnerability. Not only does the Town need to assess critical infrastructure such as transportation pathways, but also public access to open space for recreational pursuits such as nature observation, kayaking, and canoeing. An important part of the Town's proposed project is to educate residents about vulnerability and options to address it. Mass Audubon sees public engagement as critical to how we plan for the effects of climate change.

Mass Audubon supports the Town's proposed project to study, explore options, and engage the public around local climate change vulnerability and our response to it.

Please let me know if you have any questions.

Sincerely,

Carole McCauley
North Shore Region Director
cmccauley@massaudubon.org

Angus Jennings, Town Manager
Town of West Newbury
Town Office Building
381 Main Street
West Newbury, MA 01985

April 2, 2023

Re: Town of West Newbury – MVP Action Grant: Evaluating Vulnerabilities and Options to Promote Resiliency: River Road and Environs

Dear Mr. Jennings:

We would like to express Newburyport Birders' full support for West Newbury's climate change study intended to gain a shared understanding of Merrimack River flooding and related risks at River Road and its environs over different timeframes to enable the Town and its residents to prepare and plan for adverse effects of climate change.

In November 2022 West Newbury Town Meeting voted unanimously to appropriate \$50,000 in matching funds for a study of climate change impacts on River Road and its environs. The Town seeks MVP Action Grant funds to address flood risk and road stability concerns at vulnerable locations subject to Merrimack River flooding. The project will evaluate the risks from more frequent and extreme flooding events caused by climate change and sea level rise, and will enable the Town to identify, develop consensus about, and plan for an array of near-(2030), mid-(2050), and long-term (2070) resiliency options. Specifically, the project will focus on River Road and the lower portions of Coffin and Bridge Streets where they are subject to Merrimack River flooding.

Newburyport Birders supports this project. The affected area in West Newbury provides critical transportation access for school buses, commuters, and others traversing Rocks Village Bridge; includes roadways essential for public safety, access to homes; and serves as a key recreational resource for birdwatching, fishing, biking, hiking, and similar activities. It is also critical to potential river access projects for canoeing and kayaking. Evaluating the area's climate change vulnerability, informing the citizenry, and fostering nature-based consensus resiliency solutions will be essential to our ability to plan and prepare for the future.

Thank you for your consideration.

Sincerely,

Sue

Newburyport Birders
Sue McGrath
Lead Naturalist



Captain Paul Aziz, M.S., M.Ed.
35 Pine Rd.
North Hampton, NH 03862
(603) 682-2293
paziz@harbortours.com

To Whom It May Concern,

I am writing in support of West Newbury's MVP grant application to study climate change impacts to River Road. West Newbury has identified River Road between Coffin Street and Bridge Street as an area at risk of road failure due to flooding, underground seepage, and erosion. I operate passenger boats on the Merrimack River, and my passengers and I witness firsthand both the beauty and the fragility of this section of the river. This section of River Road also serves as a scenic and recreational destination for bikers, walkers, kayakers, anglers, birdwatchers, and others from West Newbury and adjacent communities.

West Newbury's MVP grant will take the first step in assessing the area's risk of failure, as well as providing a timeline for mitigation planning, in order to find a long term solution. West Newbury's findings would benefit adjacent communities who face similar threats from climate change, providing a roadmap for similar efforts and community discussion on this issue.

The section of Merrimack River bank within West Newbury's boundary is largely undeveloped and supports natural vegetation, including wild rice, riparian emergent and submerged aquatic vegetation, waterfowl and other birds, anadromous fish, and listed species such as nesting bald eagles and wintering sturgeon. Advanced assessment would allow the Town to seek nature-based solutions to not only protect these natural resources, but propose strategies (such as living shorelines or properly sized culverts) that enhance and restore riparian and aquatic habitat.

I strongly urge you to fund the West Newbury MPV grant.

Sincerely,

Captain Paul Aziz
Yankee Clipper Tours, Inc.
Newburyport/Haverhill, MA



Town of West Newbury

381 Main Street

West Newbury, Massachusetts 01985

Wayne S. Amaral, Director of Public Works

978-363-1100, Ext. 120

DPWDirector@wnewbury.org

Angus Jennings, Town Manager
Town of West Newbury
Town Office Building
381 Main Street
West Newbury, MA 01985

April 27, 2023

Re: Town of West Newbury – MVP Action Grant: Evaluating Vulnerabilities and Options to Promote Resiliency: River Road and Environs

Dear Mr. Jennings:

I would like to express my full support for West Newbury's climate change study intended to gain a shared understanding of Merrimack River flooding and related risks at River Road and its environs over different timeframes to enable the Town and its residents to prepare and plan for adverse effects of climate change.

In November 2022 West Newbury Town Meeting voted unanimously to appropriate \$50,000 in matching funds for a study of climate change impacts on River Road and its environs. The Town seeks MVP Action Grant funds to address flood risk and road stability concerns at vulnerable locations subject to Merrimack River flooding. Specifically, the project will focus on River Road and the lower portions of Coffin and Bridge Streets where they are subject to Merrimack River flooding.

The affected area in West Newbury provides critical transportation access for school buses, commuters, and others traversing Rocks Village Bridge; includes roadways essential for public safety, access to homes; and serves as a key recreational resource for birdwatching, fishing, biking, hiking, and similar activities. Evaluating the area's climate change vulnerability, informing the citizenry, and fostering nature-based consensus resiliency solutions will be essential to our ability to plan and prepare for the future. The Department of Public Works is responsible for maintaining River Road, the drainage system, and the trees within the public right-of-way. This study will help us understand the future impacts to infrastructure in the area, and help us make better informed decisions on capital spending and potential options. Thank you for your consideration.

Sincerely,

Wayne S. Amaral
Director, Department of Public Works
Town of West Newbury



TOWN OF WEST NEWBURY Public Safety

**Police Chief
Fire Chief**

401 Main Street
West Newbury, MA 01985
978-363-1213
978-363-1114 (Fax)
Dwyer@westnewburysafety.org

Angus Jennings, Town Manager
Town of West Newbury
Town Office Building
381 Main Street
West Newbury, MA 01985

April 14, 2023

Re: Town of West Newbury – MVP Action Grant; Evaluating Vulnerabilities and Options to Promote Resiliency: River Road and Environs

Dear Mr. Jennings:

Please accept this letter of support for the Town of West Newbury – Municipal Vulnerability Preparedness Grant. We believe that this study will gain an important understanding of how the Merrimack River will impact our community including the related risks of erosion and flooding around the River Road area. This study will not only help residents better understand the potential impacts to the area, but it will help public safety agencies with future planning and logistics.

In October 2022 West Newbury Town Meeting voted unanimously to appropriate \$50,000 in matching funds for a study of climate change impacts on River Road and its environs. The town seeks MVP Action Grant funds to address flood risk and road stability concerns at vulnerable locations subject to Merrimack River flooding. The project will evaluate the risks from more frequent and extreme flooding events caused by climate change and sea level rise, and will enable the Town to identify, develop consensus about, and plan for an array of near-(2030), mid-(2050), and long-term (2070) resiliency options. Specifically, the project will focus on River Road and the lower portions of Coffin and Bridge Streets where they are subject to Merrimack River flooding.

The West Newbury Police and Fire departments support this project. These affected areas in West Newbury provide critical transportation access for public safety, school buses, commuters, and others crossing the Rocks Village Bridge to and from our community. From a public safety standpoint this roadway is an important access point to residents of River Road during emergencies.

Thank you for your consideration.

Sincerely,

A handwritten signature in blue ink, appearing to read "Michael Dwyer", with a stylized flourish at the end.

Chief Michael D. Dwyer
Police Department
Fire Department



Town of West Newbury Select Board

381 Main Street, West Newbury, MA 01985 | 978-363-1100, Ext. 110
selectboard@wnewbury.org

April 24, 2023

Kara Runsten, Program Director
Municipal Vulnerability Preparedness Grant Program
100 Cambridge Street
Boston, MA 02114

Subject: West Newbury Select Board Support for MVP Action Grant Application

Dear Ms. Runsten

The West Newbury Select Board fully supports the Town's application for an MVP Action Grant to evaluate the Merrimack River flooding and erosion risks resulting from climate change and sea level rise to vulnerable sections of River Road, the northwestern end section of Bridge Street (providing access to Rocks Village Bridge) and the northernmost section of Coffin Street.

The end goal will be to develop public consensus on resiliency and adaptation strategies for the near-, mid- and long-terms to preserve Town infrastructure (roads, stormwater management), access to the 80+ homes potentially affected by increasing flooding levels/frequency/duration, the various natural recreational resources present, and Commonwealth-owned infrastructure (access to Rocks Village Bridge). Note that Rocks Village Bridge provides a critical transportation link across the Merrimack River for multiple communities, school buses, commuters, commerce, and public safety. Understanding our town's vulnerability to climate change and sea level rise, working with residents, and fostering nature-focused resiliency solutions is essential to our ability to plan and prepare for the future.

West Newbury Town Meeting demonstrated its strong support through a Fall 2022 unanimous vote to appropriate \$50,000 in matching funds for the study of climate change impacts on River Road and its environs. We see this MVP Action Grant project as an opportunity to address risk ahead of crisis.

Sincerely,

West Newbury Select Board

David Archibald, Chair

Richard Parker

Wendy Reed

Angus Jennings, Town Manager
Town of West Newbury
Town Office Building
381 Main Street
West Newbury, MA 01985

April 20, 2023

Re: Town of West Newbury – MVP Action Grant: Evaluating Vulnerabilities and Options to Promote Resiliency: River Road and Environs

Dear Mr. Jennings:

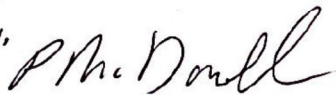
We would like to express the West Newbury Capital Improvements Committee's full support for West Newbury's climate change study intended to gain a shared understanding of Merrimack River flooding and related risks at River Road and its environs over different timeframes to enable the Town and its residents to prepare and plan for adverse effects of climate change.

In November 2022 West Newbury Town Meeting voted unanimously to appropriate \$50,000 in matching funds for a study of climate change impacts on River Road and its environs. The Town seeks MVP Action Grant funds to address flood risk and road stability concerns at vulnerable locations subject to Merrimack River flooding. The project will evaluate the risks from more frequent and extreme flooding events caused by climate change and sea level rise, and will enable the Town to identify, develop consensus about, and plan for an array of near-(2030), mid-(2050), and long-term(2070) resiliency options. Specifically, the project will focus on River Road and the lower portions of Coffin and Bridge Streets where they are subject to Merrimack River flooding.

The Capital Improvements Committee supports this project because it will assist the town in planning for climate change, ideally with better financial outcomes than would be the after a disaster occurred. The affected area in West Newbury provides critical transportation access for school buses, commuters, and others traversing Rocks Village Bridge; includes roadways essential for public safety, access to homes; and serves as a key recreational resource for birdwatching, fishing, biking, hiking, and similar activities. Evaluating the area's climate change vulnerability, informing the citizenry, and fostering nature-based consensus resiliency solutions will be essential to our ability to plan and prepare for the future.

Thank you for your consideration.

Sincerely,



The Capital Improvements Committee

Name Polly McDowell

Title Vice chair

Angus Jennings
Town Manager
381 Main Street
West Newbury, MA 01985

April 11, 2023

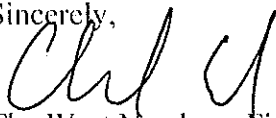
Dear Mr. Jennings:

We would like to express the West Newbury Finance Committee's full support for West Newbury's climate change study intended to gain a shared understanding of Merrimack River flooding and related risks at River Road and its environs over different timeframes to enable the Town and its residents to prepare and plan for adverse effects of climate change.

In October 2022 West Newbury Town Meeting voted unanimously to appropriate \$50,000 in matching funds for a study of climate change impacts on River Road and its environs. The Town seeks Municipal Vulnerability Preparedness (MVP) Action Grant funds to address flood risk and road stability concerns at vulnerable locations subject to Merrimack River flooding. The project will evaluate the risks from more frequent and extreme flooding events caused by climate change and sea level rise, and will enable the Town to identify, develop consensus about, and plan for an array of near-(2030), mid-(2050), and long-term (2070) resiliency options. Specifically, the project will focus on River Road and the lower portions of Coffin and Bridge Streets where they are subject to Merrimack River flooding.

The Finance Committee supports this project because it will assist the town in planning for climate change, ideally with better financial outcomes than would be the case after a disaster occurred. The affected area in West Newbury provides critical transportation access for school buses, commuters, and others traversing Rocks Village Bridge; includes roadways essential for public safety, access to homes; and serves as a key recreational resource for birdwatching, fishing, biking, hiking, and similar activities. Evaluating the area's climate change vulnerability, informing the citizenry, and fostering nature-based consensus resiliency solutions will be essential to our ability to plan and prepare for the future. Thank you for your consideration.

Sincerely,



The West Newbury Finance Committee
Christopher Wile- Chair

James Sperelakis
Walter Burmeister
Ross Capolupo

Daniel Innes
Rob Phillips Jr.



TOWN OF WEST NEWBURY

CONSERVATION COMMISSION

381 Main Street, West Newbury, Mass. 01985

TEL: 978-363-1100 x126 EMAIL: conservation@wnewbury.org

April 20, 2023

Angus Jennings, Town Manager
Town Office Building
381 Main Street
West Newbury, MA 01985

Re: Town of West Newbury – MVP Action Grant: Evaluating Vulnerabilities and Options to Promote Resiliency: River Road and Environs

Dear Mr. Jennings,

We would like to express the West Newbury Conservation Commission's full support for West Newbury's climate change study intended to gain a shared understanding of Merrimack River flooding and related risks at River Road and its environs over different timeframes to enable the Town and its residents to prepare and plan for adverse effects of climate change.

In October 2022 West Newbury Town Meeting voted unanimously to appropriate \$50,000 in matching funds for a study of climate change impacts on River Road and its environs. The Town seeks MVP Action Grant funds to address flood risk and road stability concerns at vulnerable locations subject to Merrimack River flooding. The project will evaluate the risks from more frequent and extreme flooding events caused by climate change and sea level rise, and will enable the Town to identify, develop consensus about, and plan for an array of near-(2030), mid-(2050), and long-term (2070) resiliency options. Specifically, the project will focus on River Road and the lower portions of Coffin and Bridge Streets where they are subject to Merrimack River flooding.

The Commission supports this project. The affected area in West Newbury provides critical transportation access for school buses, commuters, and others traversing Rocks Village Bridge; includes roadways essential for public safety, access to homes; and serves as a key recreational resource for birdwatching, fishing, biking, hiking, and similar activities. The area also contains important riverine wetlands under Commission jurisdiction. Evaluating the area's climate change vulnerability, informing the citizenry, and fostering nature-based consensus resiliency solutions will be essential to our ability to plan and prepare for the future.

Thank you for your consideration.

Sincerely,

The West Newbury Conservation Commission

Judith Mizner, Chair

Margaret Hawkins, Vice Chair

David Parrott, Clerk

George Preble

John Haley



The West Newbury River Access Committee

April 11, 2023

Angus Jennings, Town Manager
Town of West Newbury
Town Office Building
381 Main Street
West Newbury, MA 01985

Re: Town of West Newbury – MVP Action Grant: Evaluating Vulnerabilities and Options to Promote Resiliency: River Road and Environs

Dear Mr. Jennings:

We would like to express the West Newbury River Access Committee's full support for West Newbury's climate change study intended to gain a shared understanding of Merrimack River flooding and related risks at River Road and its environs over different timeframes to enable the Town and its residents to prepare and plan for adverse effects of climate change.

In October 2022 West Newbury Town Meeting voted unanimously to appropriate \$50,000 in matching funds for a study of climate change impacts on River Road and its environs. The Town seeks MVP Action Grant funds to address flood risk and road stability concerns at vulnerable locations subject to Merrimack River flooding. The project will evaluate the risks from more frequent and extreme flooding events caused by climate change and sea level rise, and will enable the Town to identify, develop consensus about, and plan for an array of near-(2030), mid (2050), and long-term (2070) resiliency options. Specifically, the project will focus on River Road and the lower portions of Coffin and Bridge Streets where they are subject to Merrimack River flooding.

The River Access Committee supports this project. The affected area in West Newbury provides critical transportation access for school buses, commuters, and others traversing Rocks Village Bridge; includes roadways essential for public safety, access to homes; and serves as a key recreational resource for birdwatching, fishing, biking, hiking, and similar activities. It is also critical to potential river access projects for canoeing and kayaking. Evaluating the area's climate change vulnerability, informing the citizenry, and fostering nature-based consensus resiliency solutions will be essential to our ability to plan and prepare for the future.

Thank you for your consideration.

Sincerely,

The West Newbury River Access Committee

By: Barry J. Lacroix
Title: Chairman

Angus Jennings, Town Manager
Town of West Newbury
Town Office Building
381 Main Street
West Newbury, MA 01985

April 19th, 2023

Re: Town of West Newbury – MVP Action Grant: Evaluating Vulnerabilities and Options to Promote Resiliency: River Road and Environs

Dear Mr. Jennings:

We would like to express the West Newbury Open Space Committee's full support for West Newbury's climate change study intended to gain a shared understanding of Merrimack River flooding and related risks at River Road and its environs over different timeframes to enable the Town and its residents to prepare and plan for adverse effects of climate change.

In October 2022 West Newbury Town Meeting voted unanimously to appropriate \$50,000 in matching funds for a study of climate change impacts on River Road and its environs. The Town seeks MVP Action Grant funds to address flood risk and road stability concerns at vulnerable locations subject to Merrimack River flooding. The project will evaluate the risks from more frequent and extreme flooding events caused by climate change and sea level rise, and will enable the Town to identify, develop consensus about, and plan for an array of near-(2030), mid-(2050), and long-term(2070) resiliency options. Specifically, the project will focus on River Road and the lower portions of Coffin and Bridge Streets where they are subject to Merrimack River flooding.

The Open Space Committee supports this project. The affected area in West Newbury provides critical transportation access for school buses, commuters, and others traversing Rocks Village Bridge; includes roadways essential for public safety, access to homes; and serves as a key recreational resource for birdwatching, fishing, biking, hiking, and similar activities. It is also critical to potential river access projects for canoeing and kayaking. Evaluating the area's climate change vulnerability, informing the citizenry, and fostering nature-based consensus resiliency solutions will be essential to our ability to plan and prepare for the future.

Thank you for your consideration.

Sincerely,

Graham Bacheller
Chair
The West Newbury Open Space Committee

Angus Jennings, Town Manager
Town of West Newbury
Town Office Building
381 Main Street
West Newbury, MA 01985

April 9, 2023

Re: Town of West Newbury – MVP Action Grant: Evaluating Vulnerabilities and
Options to Promote Resiliency: River Road and Environs

Dear Mr. Jennings:

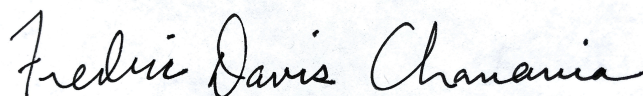
We are writing to express the West Newbury Tree Committee's support for West Newbury's climate change study regarding Merrimack River flooding and related risks at River Road and its environs over different timeframes. The forested landscape in this area is critical to preserving not only the integrity of the riverbank and floodplain but the habitat for a number of notable riverine wildlife species, such as the bald eagle and osprey. This study will enable the Town and its residents to better understand and plan for the impacts of climate change and to help ameliorate adverse impacts on this vulnerable ecosystem, at least to the extent feasible.

In October 2022 West Newbury Town Meeting voted unanimously to appropriate \$50,000 in matching funds for a study of climate change impacts on River Road and its environs. The Town seeks MVP Action Grant funds to address flood risk and road stability concerns at vulnerable locations subject to Merrimack River flooding. The project will evaluate the risks from more frequent and extreme flooding events caused by climate change and sea level rise, and will enable the Town to identify, develop consensus about, and plan for an array of near-term (2030), mid-term (2050), and long-term (2070) resiliency options. This project will focus on potentially flooded areas along River Road and the lower portions of Coffin and Bridge Streets, where significant forested and interconnected riverine and tidal freshwater areas are found. Indeed, the Tree Committee has recently nominated the largest Tupelo tree at Riverbend, which is located in or adjacent to the study area, for consideration as the state champion.

The Tree Committee fully supports this project. The affected area in West Newbury provides critical transportation access for school buses, commuters, and others traversing Rocks Village Bridge; includes roadways essential for public safety, access to homes; and serves as a key recreational and ecological resource for birdwatching, fishing, biking, hiking, and similar outdoor activities. Evaluating the area's climate change vulnerability, informing the citizenry, and fostering nature-based, consensus resiliency solutions will be essential to our ability to plan and prepare for the future.

Thank you for your consideration.

Sincerely,

A handwritten signature in cursive script that reads "Fredric Davis Chanania". The signature is written in dark ink and is positioned above the printed name of the signatory.

Fredric D. Chanania, Chair, on behalf of the West Newbury Tree Committee



**TOWN OF WEST NEWBURY
OFFICE OF THE PLANNING BOARD
381 MAIN STREET
WEST NEWBURY MA 01985
978-363-1100 X125 Fax: 978-363-1119**

Angus Jennings, Town Manager
Town of West Newbury
Town Office Building
381 Main Street
West Newbury, MA 01985

April 5, 2023

Re: Town of West Newbury – MVP Action Grant: Evaluating Vulnerabilities and Options to Promote Resiliency:
River Road and Environs

Dear Mr. Jennings:

We would like to express the Planning Board's full support for West Newbury's climate change study intended to gain a shared understanding of Merrimack River flooding and related risks at River Road and its environs over different timeframes to enable the Town and its residents to prepare and plan for adverse effects of climate change.

We understand that the Town seeks MVP Action Grant funds to address flood risk and road stability concerns at vulnerable locations subject to Merrimack River flooding. The project will evaluate the risks from more frequent and extreme flooding events caused by climate change and sea level rise, and will enable the Town to identify, develop consensus about, and plan for an array of near-(2030), mid-(2050), and long-term(2070) resiliency options. Specifically, the project will focus on River Road and the lower portions of Coffin and Bridge Streets where they are subject to Merrimack River flooding.

The affected area in West Newbury provides critical transportation access for school buses, commuters, and others traversing Rocks Village Bridge; includes roadways essential for public safety, access to homes; and serves as a key recreational resource for birdwatching, fishing, biking, hiking, and similar activities. Evaluating the area's climate change vulnerability, informing the citizenry, and fostering nature-based consensus resiliency solutions will be essential to our ability to plan and prepare for the future.

Thank you for your consideration.

Sincerely,

West Newbury Planning Board
Ann E. Bardeen, Chair

West Newbury Garden Club



Angus Jennings, Town Manager
April 5, 2023
Town of West Newbury
Town Office Building
381 Main Street
West Newbury, MA 01985

Dear Mr. Jennings:

We would like to express the West Newbury Garden Club's full support for West Newbury's climate change study intended to gain a shared understanding of Merrimack River flooding and related risks at River Road and its environs over different timeframes to enable the Town and its residents to prepare and plan for adverse effects of climate change.

In October 2022 West Newbury Town Meeting voted unanimously to appropriate \$50,000 in matching funds for a study of climate change impacts on River Road and its environs. The Town seeks MVP Action Grant funds to address flood risk and road stability concerns at vulnerable locations subject to Merrimack River flooding. The project will evaluate the risks from more frequent and extreme flooding events caused by climate change and sea level rise, and will enable the Town to identify, develop consensus about, and plan for an array of near-(2030), mid-(2050), and long-term(2070) resiliency options. Specifically, the project will focus on River Road and the lower portions of Coffin and Bridge Streets where they are subject to Merrimack River flooding.

The Garden Club supports this project. The affected area in West Newbury provides critical transportation access for school buses, commuters, and others traversing Rocks Village Bridge; includes roadways essential for public safety, access to homes; and serves as a key recreational resource for birdwatching, fishing, biking, hiking, and similar activities. The area also contains Ferry Lane Park, which is one of the town gardens that Garden Club maintains. Evaluating the area's climate change vulnerability, informing the citizenry, and fostering nature-based consensus resiliency solutions will be essential to our ability to plan and prepare for the future.

Thank you for your consideration.

Sincerely,

Lori Boudrow

The West Newbury Garden Club
Lori Boudrow
President



April 20, 2023

Angus Jennings, Town Manager
Town of West Newbury
Town Office Building
381 Main Street
West Newbury, Massachusetts 01985

Dear Mr. Jennings,

We are writing in support of the West Newbury's MVP Action Grant to study climate change impacts to River Road. The Town of West Newbury has identified River Road between Coffin Street and Bridge Street as an area at risk of road failure due to flooding, underground seepage, and erosion. This section of River Road also serves as a scenic and recreational destination for bikers, walkers, kayakers, anglers, birdwatchers, and others from West Newbury and adjacent communities.

West Newbury's MVP grant will take the first step to understand the risk of failure, provide a timeline to begin discussion and mitigation planning, in order to find a long-term solution, prioritizing nature-based solutions if feasible. West Newbury's findings would be a benefit to adjacent communities who face parallel threats from Climate Change, providing a roadmap for similar efforts and community discussion on this issue.

The sections of Merrimack River bank within West Newbury's boundary are largely undeveloped and support natural vegetation, including wild rice, riparian emergent and submerged aquatic vegetation, waterfowl and songbirds, anadromous fish, and listed species such as nesting bald eagles and wintering sturgeon. Advanced assessment would allow the Town to seek nature-based solutions to not only protect these natural resources, but propose strategies (such as living shorelines or properly sized culverts) that enhance and restore riparian and aquatic habitat.

West Newbury Wild and Native is a group of residents from West Newbury and adjacent towns dedicated to sharing information and resources for residents to integrate native plants into their gardening, support pollinators and work to eradicate invasive plants in yards and Town-owned lands. We have successfully implemented several community projects to enhance resiliency in West Newbury and pledge to assist the MVP committee in educating residents about the importance of riverine habitat, and the scenic, biological, and ecological value of River Road and adjacent Merrimack River through walks, presentations, and workshops.

West Newbury Wild and Native supports this project. Thank you for your consideration.

Sincerely,

West Newbury Wild and Native, wnwildnative@gmail.com
Carol J. Decker, Steering Committee



Gulf of Maine Institute, 117 Maine St., West Newbury Ma, 01985
www.gulfofmainesitiute.org p:978/973-7372

April 11, 2023

Kara Rustin, Municipal Vulnerability Preparedness Director
Executive Office of Energy and Environmental Affairs
100 Cambridge Street, Suite 900, Boston, MA 02114
Re: Rockport Coastal Resilience Planning Project - MVP FY24/25 Action Grant

Dear Ms. Rustin.

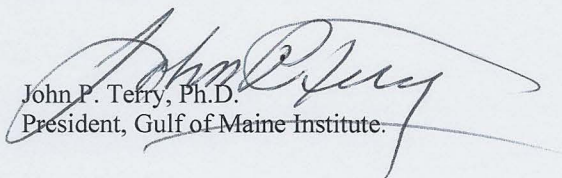
I am writing to support West Newbury's MVP grant to study climate change impacts on River Road. West Newbury has identified River Road between Coffin Street and Bridge Street as an area at risk of road failure due to flooding, underground seepage, and erosion. This section of River Road also serves as a scenic and recreational destination for bikers, walkers, kayakers, anglers, birdwatchers, and others from West Newbury and adjacent communities. West Newbury's MVP grant will take the first step in understanding the risk of failure and provide a timeline to begin discussion and mitigation planning to find a long-term solution, prioritizing a nature-based solution if feasible. West Newbury's findings would benefit adjacent communities who face similar threats from Climate Change, providing a roadmap for similar efforts and community discussion on this issue.

The section of the Merrimack Riverbank within West Newbury is largely undeveloped and supports natural vegetation, including wild rice, riparian emergent and submerged aquatic vegetation, waterfowl and other birds, Anadromous fish, and listed species such as nesting bald eagles and wintering sturgeon. The advanced assessment would allow the Town to seek nature-based solutions to protect these natural resources and propose strategies (such as living shorelines or properly sized culverts) that enhance and restore riparian and aquatic habitats.

Gulf of Maine Institute (GOMI), a Massachusetts non-profit 501(c) organization, works with schools to provide teachers with professional development and technical support to bring their students out of the classroom and into their community to learn hands-on about climate change and biodiversity loss. Our West Newbury partnership includes the Pentucket Regional School District (PRSD), G.A.R. Memorial Library, and the Keep West Newbury Wild and Native (WN2). PRSD has at the high school (RHS) created two field-based courses on local climate-related issues and set aside two campus prime habitat sanctuary demonstration sites; one is a degraded brook emptying into the Merrimack R., and the other is a wooded classroom area opening to a meadow. PRHS youth are renewing these sites and, with G.A.R. Library creating a sanctuary mentoring and storytelling site on the library campus. The proposed West Newbury MVP project would be a great hands-on opportunity for local youth to engage in proactive climate action in their community and deepen the community's commitment to the G.A.R./PRSD environmental literacy program.

I strongly urge the funding of West Newbury's innovative community-based MVP submission.

Respectfully yours,


John P. Terry, Ph.D.
President, Gulf of Maine Institute.

Climate Resilience Design Standards Tool Project Report

Evaluating Vulnerabilities and Options to Promote Resiliency: River Road and Environs

Date Created: 3/30/2023 11:50:09 AM

Created By: dpwprojects

Date Report Generated: 4/26/2023 12:39:25 PM

Tool Version: Version 1.2

Project Contact Information: Christine Wallace (dpwprojects@wnewbury.org)

Project Summary

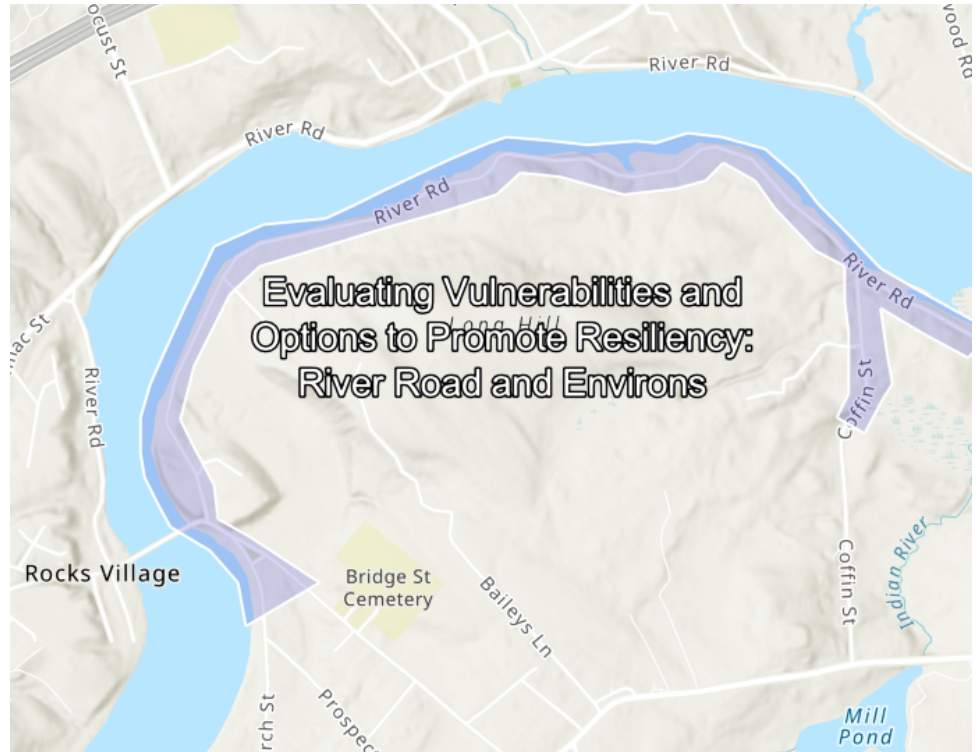
[Link to Project](#)

Estimated Capital Cost: \$200000.00

End of Useful Life Year: 2076

Project within mapped Environmental Justice neighborhood: No

Ecosystem Service	Scores
Benefits	
Project Score	High
Exposure	Scores
Sea Level Rise/Storm Surge	High
Surge	Exposure
Extreme Precipitation - Urban Flooding	High
Extreme Precipitation - Riverine Flooding	High
Extreme Heat	Moderate
	Exposure



Asset Preliminary Climate Risk Rating

Number of Assets: 2

Summary

Asset Risk	Sea Level Rise/Storm Surge	Extreme Precipitation - Urban Flooding	Extreme Precipitation - Riverine Flooding	Extreme Heat
River Road	High Risk	High Risk	High Risk	High Risk
Rocks Village Bridge	High Risk	High Risk	High Risk	High Risk

Climate Resilience Design Standards Summary

	Target Planning Horizon	Intermediate Planning Horizon	Percentile	Return Period	Tier
Sea Level Rise/Storm Surge					
River Road	2050			500-yr (0.2%)	
Rocks Village Bridge	2070	2050		500-yr (0.2%)	
Extreme Precipitation					
River Road	2050			50-yr (2%)	Tier 3
Rocks Village Bridge	2070			50-yr (2%)	Tier 3
Extreme Heat					
River Road	2050		90th		Tier 3
Rocks Village Bridge	2070		50th		Tier 3

Scoring Rationale - Project Exposure Score

The purpose of the Exposure Score output is to provide a preliminary assessment of whether the overall project site and subsequent assets are exposed to impacts of natural hazard events and/or future impacts of climate change. For each climate parameter, the Tool will calculate one of the following exposure ratings: Not Exposed, Low Exposure, Moderate Exposure, or High Exposure. The rationale behind the exposure rating is provided below.

Sea Level Rise/Storm Surge

This project received a "High Exposure" because of the following:

- Located within the predicted mean high water shoreline by 2030
- Exposed to the 1% annual coastal flood event as early as 2030
- Historic coastal flooding at project site

Extreme Precipitation - Urban Flooding

This project received a "High Exposure" because of the following:

- Historic flooding at the project site
- Maximum annual daily rainfall exceeds 10 inches within the overall project's useful life
- No increase to impervious area
- Existing impervious area of the project site is less than 10%

Extreme Precipitation - Riverine Flooding

This project received a "High Exposure" because of the following:

- Project site has a history of riverine flooding
- Part of the project is within a mapped FEMA floodplain, outside of the Massachusetts Coast Flood Risk Model (MC-FRM)
- Part of the project is within 500ft of a waterbody and less than 20ft above the waterbody
- Project is potentially susceptible to riverine erosion

Extreme Heat

This project received a "Moderate Exposure" because of the following:

- 30+ days increase in days over 90 deg. F within project's useful life
- Existing impervious area of the project site is less than 10%
- Located within 100 ft of existing water body
- No increase to the impervious area of the project site
- No tree removal

Scoring Rationale - Asset Preliminary Climate Risk Rating

A Preliminary Climate Risk Rating is determined for each infrastructure and building asset by considering the overall project Exposure Score and responses to Step 4 questions provided by the user in the Tool. Natural Resource assets do not receive a risk rating. The following factors are what influenced the risk ratings for each asset.

Asset - River Road

Primary asset criticality factors influencing risk ratings for this asset:

- Asset may inaccessible/inoperable for more than a day but less than a week after natural hazard event
- Loss/inoperability of the asset would have regional impacts
- Infrastructure functions as an evacuation route during emergencies
- Inoperability is likely to significantly impact other facilities, assets, or buildings and will likely affect their ability to operate
- There are no hazardous materials in the asset

Asset - Rocks Village Bridge

Primary asset criticality factors influencing risk ratings for this asset:

- Asset may inaccessible/inoperable for more than a day but less than a week after natural hazard event
- Loss/inoperability of the asset would have regional impacts
- Infrastructure functions as an evacuation route during emergencies
- Inoperability is likely to significantly impact other facilities, assets, or buildings and will likely affect their ability to operate
- There are no hazardous materials in the asset

Project Climate Resilience Design Standards Output

Climate Resilience Design Standards and Guidance are recommended for each asset and climate parameter. The Design Standards for each climate parameter include the following: recommended planning horizon (target and/or intermediate), recommended return period (Sea Level Rise/Storm Surge and Precipitation) or percentile (Heat), and a list of applicable design criteria that are likely to be affected by climate change. Some design criteria have numerical values associated with the recommended return period and planning horizon, while others have tiered methodologies with step-by-step instructions on how to estimate design values given the other recommended design standards.

Asset: River Road

Infrastructure

Sea Level Rise/Storm Surge

High Risk

Target Planning Horizon: 2050

Intermediate Planning Horizon: Not Applicable

Return Period: 500-yr (0.2%)

LIMITATIONS: The recommended Climate Resilience Design Standards for the Sea Level Rise / Storm Surge Design Criteria are based on the user drawn polygon and relationships as defined in the Supporting Documents. The projected values provided through the Tool are based on the Massachusetts Coast Flood Risk Model (MC-FRM) outputs as of 9/13/2021, which included GIS-based data for three planning horizons (2030, 2050, 2070) and six return periods (0.1%, 0.2%, 0.5%, 1%, 2%, 5%). These values are projections based on assumptions as defined in the model and the LiDAR used at the time. For additional information on the MC-FRM, review the additional resources provided on the Start Here page.

The projected values, Standards, and Guidance provided within this Tool may be used to inform plans and designs, but they do not provide guarantees for future conditions or resilience. The projected values are not to be considered final or appropriate for construction documents without supporting engineering analyses. The guidance provided within this Tool is intended to be general and users are encouraged to do their own due diligence.

Applicable Design Criteria

Projected Tidal Datums: APPLICABLE

This project is located in an area with uncertainty for future tidal datums. These uncertain zones are either dynamic in terms of geomorphology or are restricted by manmade features (i.e., culverts, tide gates, etc.) that should be evaluated in more detail at the site-scale.

Projected Water Surface Elevation: APPLICABLE

Asset Name	Recommended Planning Horizon	Recommended Return Period	Max	Min	Area Weighted Average
			(ft - NAVD88)		
River Road	2050	0.2% (500-Year)	13.1	12.6	12.8

Projected Wave Action Water Elevation: APPLICABLE

Asset Name	Recommended Planning Horizon	Recommended Return Period	Max	Min	Area Weighted Average
			(ft - NAVD88)		
River Road	2050	0.2% (500-Year)	17.9	12.6	14.2

Projected Wave Heights: APPLICABLE

Asset Name	Recommended Planning Horizon	Recommended Return Period	Max	Min	Area Weighted Average
			(Feet)		
River Road	2050	0.2% (500-Year)	7.5	0.0	3.5

Projected Duration of Flooding: APPLICABLE

[Methodology to Estimate Projected Values](#)

Projected Design Flood Velocity: APPLICABLE

[Methodology to Estimate Projected Values](#)

Projected Scour & Erosion: APPLICABLE

[Methodology to Estimate Projected Values](#)

Extreme Precipitation

High Risk

Target Planning Horizon: 2050

Return Period: 50-yr (2%)

LIMITATIONS: The recommended Standards for Total Precipitation Depth & Peak Intensity are determined by the user drawn polygon and relationships as defined in the Supporting Documents. The projected Total Precipitation Depth values provided through the Tool are based on the climate projections developed by Cornell University as part of EEA's Massachusetts Climate and Hydrologic Risk Project, GIS-based data as of 10/15/21. For additional information on the methodology of these precipitation outputs, see Supporting Documents.

While Total Precipitation Depth & Peak Intensity for 24-hour Design Storms are useful to inform planning and design, it is recommended to also consider additional longer- and shorter-duration precipitation events and intensities in accordance with best practices. Longer-duration, lower-intensity storms allow time for infiltration and reduce the load on infrastructure over the duration of the storm. Shorter-duration, higher-intensity storms often have higher runoff volumes because the water does not have enough time to infiltrate infrastructure systems (e.g., catch basins) and may overflow or back up during such storms, resulting in flooding. In the Northeast, short-duration high intensity rain events are becoming more frequent, and there is often little early warning for these events, making it difficult to plan operationally. While the Tool does not provide recommended design standards for these scenarios, users should still consider both short- and long-duration precipitation events and how they may impact the asset.

The projected values, standards, and guidance provided within this Tool may be used to inform plans and designs, but they do not provide guarantees for future conditions or resilience. The projected values are not to be considered final or appropriate for construction documents without supporting engineering analyses. The guidance provided within this Tool is intended to be general and users are encouraged to do their own due diligence

Applicable Design Criteria

Tiered Methodology: Tier 3

Projected Total Precipitation Depth & Peak Intensity for 24-hr Design Storms: APPLICABLE

Asset Name	Recommended Planning Horizon	Recommended Return Period (Design Storm)	Projected 24-hr Total Precipitation Depth (inches)	Step-by-Step Methodology for Peak Intensity
River Road	2050	50-Year (2%)	9.3	Downloadable Methodology PDE

Projected Riverine Peak Discharge & Peak Flood Elevation: APPLICABLE

[Methodology to Estimate Projected Values](#) : Tier 3

Extreme Heat

High Risk

Target Planning Horizon: 2050
Percentile: 90th Percentile

Applicable Design Criteria

Tiered Methodology: Tier 3

Projected Annual/Summer/Winter Average Temperatures: APPLICABLE

[Methodology to Estimate Projected Values](#) : Tier 3

Projected Heat Index: APPLICABLE

[Methodology to Estimate Projected Values](#) : Tier 3

Projected Growing Degree Days: NOT APPLICABLE

Projected Days Per Year With Max Temp > 95°F, >90°F, <32°F: APPLICABLE

[Methodology to Estimate Projected Values](#) : Tier 3

Projected Number of Heat Waves Per Year & Average Heat Wave Duration: APPLICABLE

[Methodology to Estimate Projected Values](#) : Tier 3

Projected Cooling Degree Days & Heating Degree Days (base = 65°F): NOT APPLICABLE

Asset: Rocks Village Bridge

Infrastructure

Sea Level Rise/Storm Surge

High Risk

Target Planning Horizon: 2070
Intermediate Planning Horizon: 2050
Return Period: 500-yr (0.2%)

LIMITATIONS: The recommended Climate Resilience Design Standards for the Sea Level Rise / Storm Surge Design Criteria are based on the user drawn polygon and relationships as defined in the Supporting Documents. The projected values provided through the Tool are based on the Massachusetts Coast Flood Risk Model (MC-FRM) outputs as of 9/13/2021, which included GIS-based data for three planning horizons (2030, 2050, 2070) and six return periods (0.1%, 0.2%, 0.5%, 1%, 2%, 5%). These values are projections based on assumptions as defined in the model and the LiDAR used at the time. For additional information on the MC-FRM, review the additional resources provided on the Start Here page.

The projected values, Standards, and Guidance provided within this Tool may be used to inform plans and designs, but they do not provide guarantees for future conditions or resilience. The projected values are not to be considered final or appropriate for construction documents without supporting engineering analyses. The guidance provided within this Tool is intended to be general and users are encouraged to do their own due diligence.

Applicable Design Criteria

Projected Tidal Datums: APPLICABLE

This project is located in an area with uncertainty for future tidal datums. These uncertain zones are either dynamic in terms of geomorphology or are restricted by manmade features (i.e., culverts, tide gates, etc.) that should be evaluated in more detail at the site-scale.

Projected Water Surface Elevation: APPLICABLE

Asset Name	Recommended Planning Horizon	Recommended Return Period	Max	Min	Area Weighted Average
			(ft - NAVD88)		
Rocks Village Bridge	2050	0.2% (500-Year)	13.1	12.6	12.8
	2070		15.4	14.7	15.0

Projected Wave Action Water Elevation: APPLICABLE

Asset Name	Recommended Planning Horizon	Recommended Return Period	Max	Min	Area Weighted Average
			(ft - NAVD88)		
Rocks Village Bridge	2050	0.2% (500-Year)	17.9	12.6	14.2
	2070		20.4	14.7	16.5

Projected Wave Heights: APPLICABLE

Asset Name	Recommended Planning Horizon	Recommended Return Period	Max	Min	Area Weighted Average
			(Feet)		
Rocks Village Bridge	2050	0.2% (500-Year)	7.5	0.0	3.5
	2070		8.0	0.0	3.5

Projected Duration of Flooding: APPLICABLE

[Methodology to Estimate Projected Values](#)

Projected Design Flood Velocity: APPLICABLE

[Methodology to Estimate Projected Values](#)

Projected Scour & Erosion: APPLICABLE

[Methodology to Estimate Projected Values](#)

Extreme Precipitation

High Risk

Target Planning Horizon: 2070

Return Period: 50-yr (2%)

LIMITATIONS: The recommended Standards for Total Precipitation Depth & Peak Intensity are determined by the user drawn polygon and relationships as defined in the Supporting Documents. The projected Total Precipitation Depth values provided through the Tool are based on the climate projections developed by Cornell University as part of EEA's Massachusetts Climate and Hydrologic Risk Project, GIS-based data as of 10/15/21. For additional information on the methodology of these precipitation outputs, see Supporting Documents.

While Total Precipitation Depth & Peak Intensity for 24-hour Design Storms are useful to inform planning and design, it is recommended to also consider additional longer- and shorter-duration precipitation events and intensities in accordance with best practices. Longer-duration, lower-intensity storms allow time for infiltration and reduce the load on infrastructure over the duration of the storm. Shorter-duration, higher-intensity storms often have higher runoff volumes because the water does not have enough time to infiltrate infrastructure systems (e.g., catch basins) and may overflow or back up during such storms, resulting in flooding. In the Northeast, short-duration high intensity rain events are becoming more frequent, and there is often little early warning for these

events, making it difficult to plan operationally. While the Tool does not provide recommended design standards for these scenarios, users should still consider both short- and long-duration precipitation events and how they may impact the asset.

The projected values, standards, and guidance provided within this Tool may be used to inform plans and designs, but they do not provide guarantees for future conditions or resilience. The projected values are not to be considered final or appropriate for construction documents without supporting engineering analyses. The guidance provided within this Tool is intended to be general and users are encouraged to do their own due diligence

Applicable Design Criteria

Tiered Methodology: Tier 3

Projected Total Precipitation Depth & Peak Intensity for 24-hr Design Storms: APPLICABLE

Asset Name	Recommended Planning Horizon	Recommended Return Period (Design Storm)	Projected 24-hr Total Precipitation Depth (inches)	Step-by-Step Methodology for Peak Intensity
Rocks Village Bridge	2070	50-Year (2%)	10.0	Downloadable Methodology PDF

Projected Riverine Peak Discharge & Peak Flood Elevation: APPLICABLE

[Methodology to Estimate Projected Values](#) : Tier 3

Extreme Heat

High Risk

Target Planning Horizon: 2070
Percentile: 50th Percentile

Applicable Design Criteria

Tiered Methodology: Tier 3

Projected Annual/Summer/Winter Average Temperatures: APPLICABLE

[Methodology to Estimate Projected Values](#) : Tier 3

Projected Heat Index: APPLICABLE

[Methodology to Estimate Projected Values](#) : Tier 3

Projected Growing Degree Days: NOT APPLICABLE

Projected Days Per Year With Max Temp > 95°F, >90°F, <32°F: APPLICABLE

[Methodology to Estimate Projected Values](#) : Tier 3

Projected Number of Heat Waves Per Year & Average Heat Wave Duration: APPLICABLE

[Methodology to Estimate Projected Values](#) : Tier 3

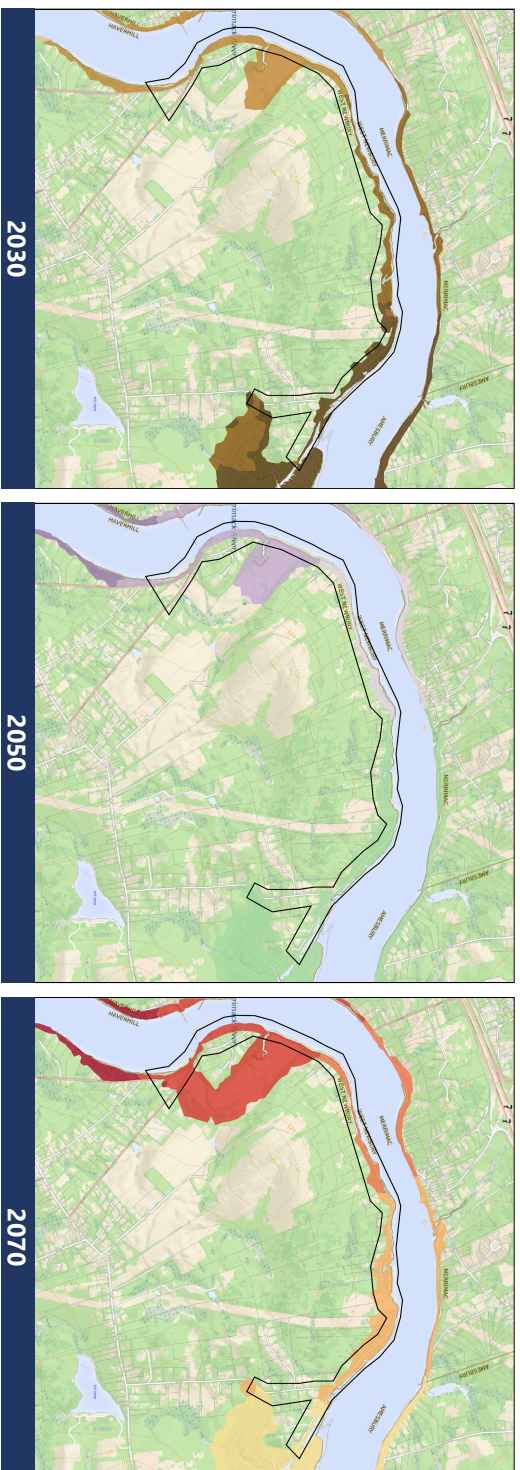
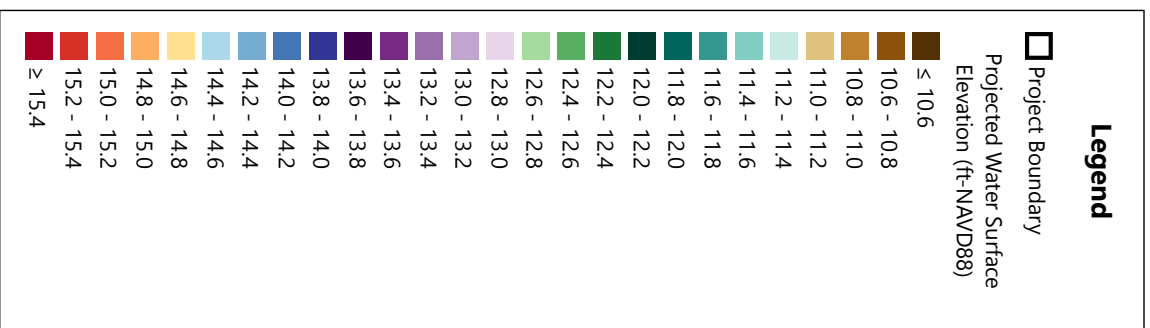
Projected Cooling Degree Days & Heating Degree Days (base = 65°F): NOT APPLICABLE

Sea Level Rise/Storm Surge Project Maps

The following three maps illustrate the Projected Water Surface Elevation for the 2030, 2050, and 2070 planning horizons corresponding to the lowest return period (largest design storm) recommended across the assets identified for this project in the Tool. For projects that only have Natural Resource assets, the maps will show the Projected Water Surface Elevations corresponding to the 5% (20-year) return period. Refer to the Climate Resilience Design Standards Output - Sea Level Rise/Storm Surge Section for additional values associated with other assets. The maps include the project area as drawn by the user with a 0.1 mile minimum buffer, but do not reflect the location of specific assets on the site.

LIMITATIONS: The recommended Climate Resilience Design Standards for the Sea Level Rise / Storm Surge Design Criteria are based on the user drawn polygon and relationships as defined in the Supporting Documents. The projected values and maps provided through the Tool are based on the Massachusetts Coast Flood Risk Model (MC-FRM) outputs as of 9/13/2021, which included GIS-based data for three planning horizons (2030, 2050, 2070) and six return periods (0.1%, 0.2%, 0.5%, 1%, 2%, 5%). These values are projections based on assumptions as defined in the model and the LiDAR used at the time. For additional information on the MC-FRM, review the additional resources provided on the Start Here page.

The projected values, maps, Standards, and Guidance provided within this Tool may be used to inform plans and designs, but they do not provide guarantees for future conditions or resilience. The projected values are not to be considered final or appropriate for construction documents without supporting engineering analyses. The guidance provided within this Tool is intended to be general and users are encouraged to do their own due diligence.



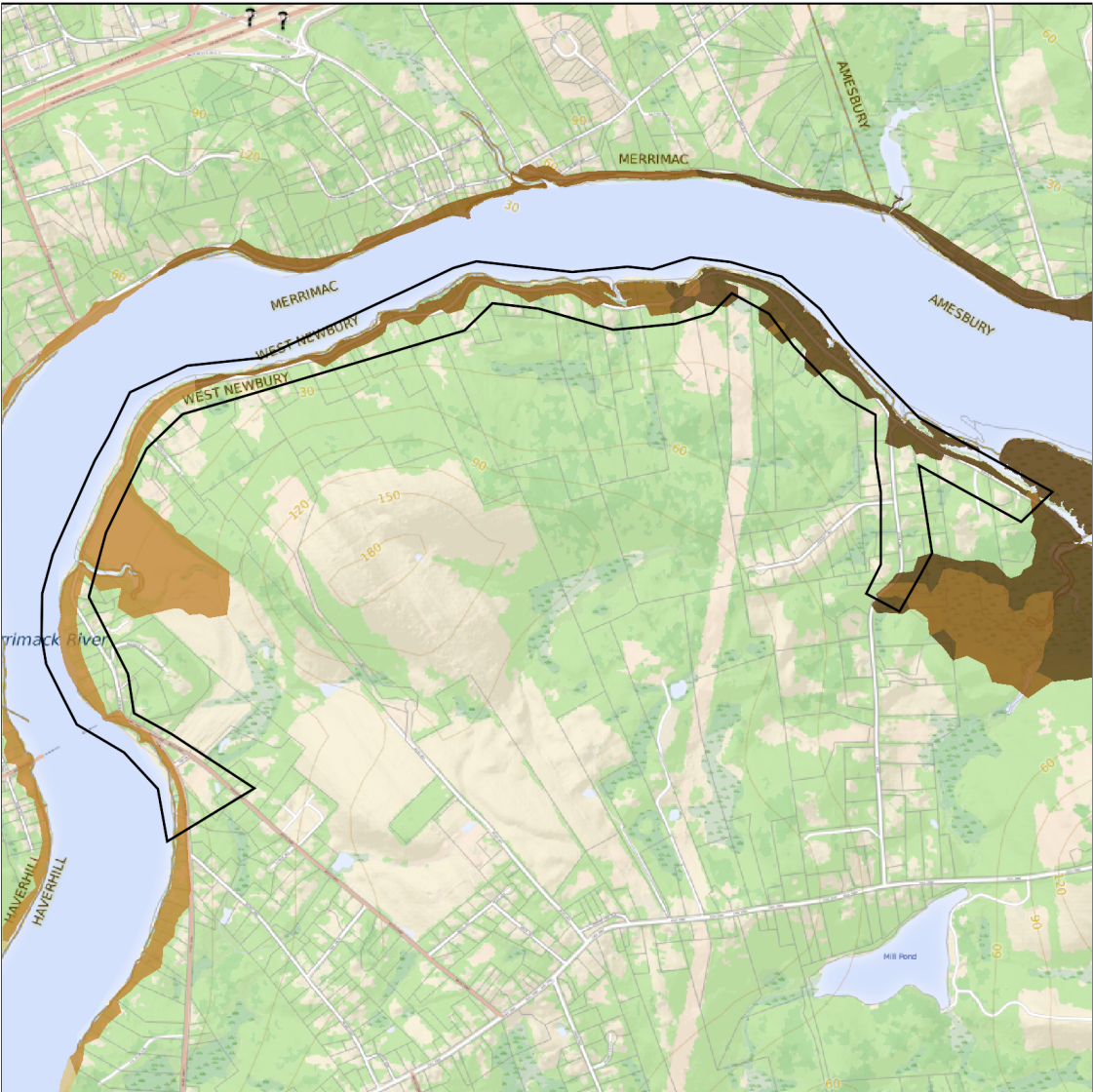
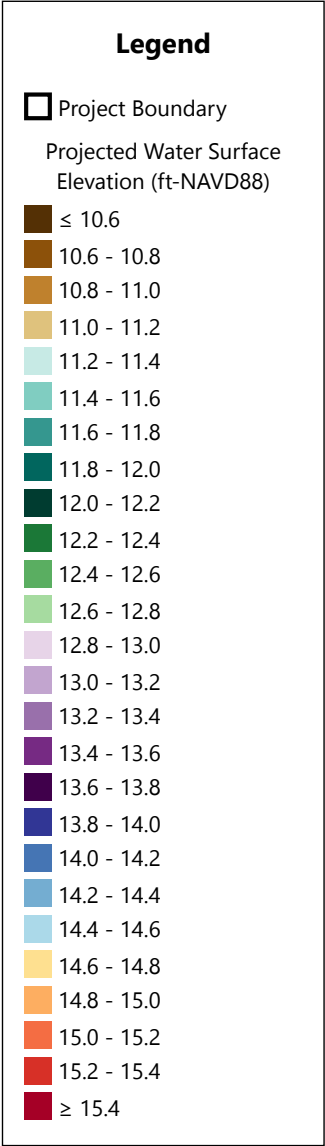
**Climate Resilience Design Standards Tool:
Sea Level Rise/Storm Surge Design Criteria
Projected Water Surface Elevation Map: 0.2% (500-yr)**

Project Name: Evaluating Vulnerabilities and Options to Promote Resiliency: River Road and Environs
Location (Town): W. Newbury

Created by: dpwprojects
Date Created: 3/30/2023
Tool Version: 1.3



Asset Name	Planning Horizon	Return Period	Max	Min	Area Weighted Average (ft.-NAVD88)
River Road, Rocks Village Bridge	2030	0.2% (500-yr)	10.9	10.5	10.6
	2050	0.2% (500-yr)	13.1	12.6	12.8
	2070	0.2% (500-yr)	15.4	14.7	15.0



Climate Resilience Design Standards Tool:
 Sea Level Rise/Storm Surge Design Criteria
 Projected Water Surface Elevation Map: 2030, 0.2% (500-yr)

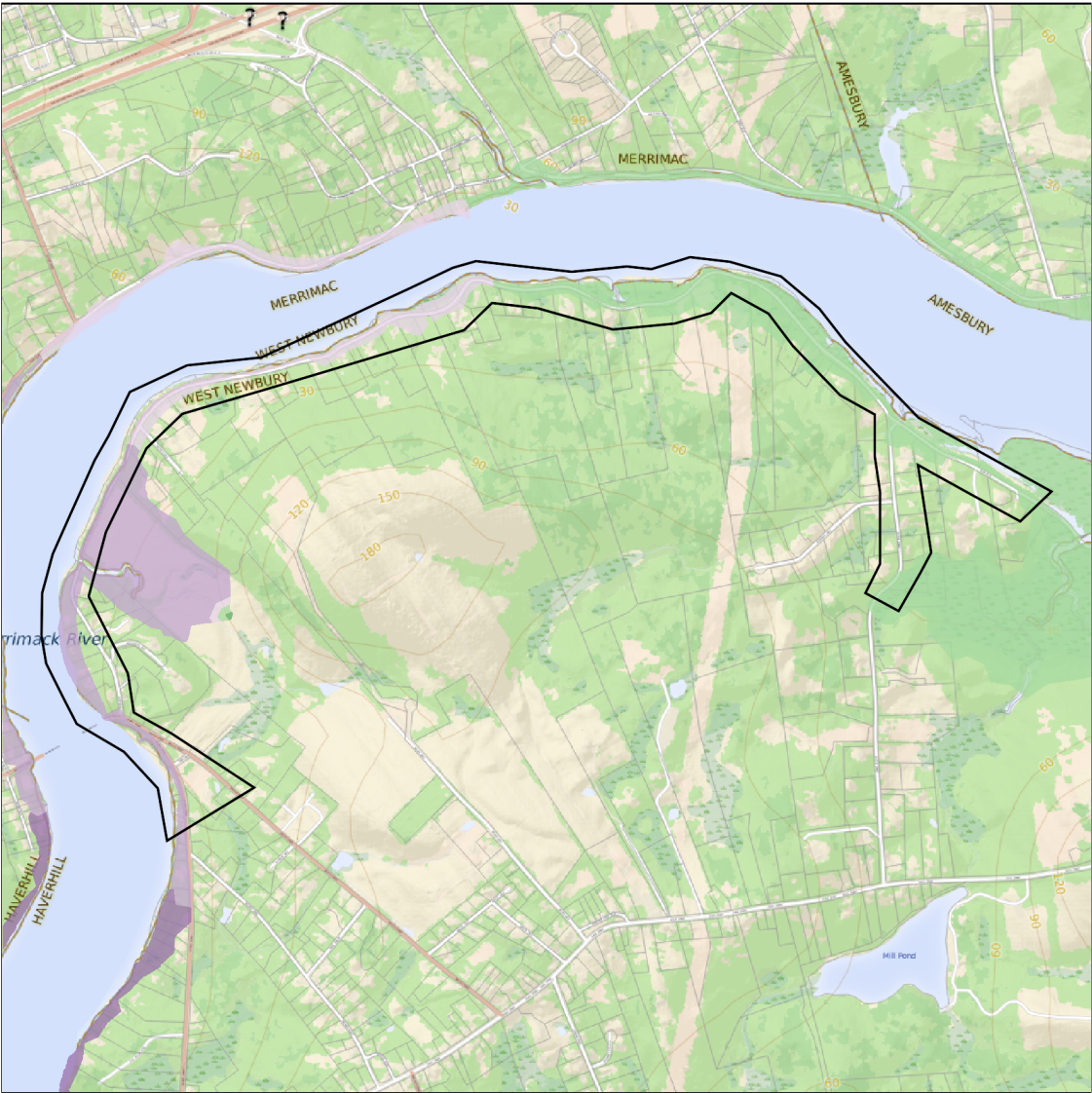
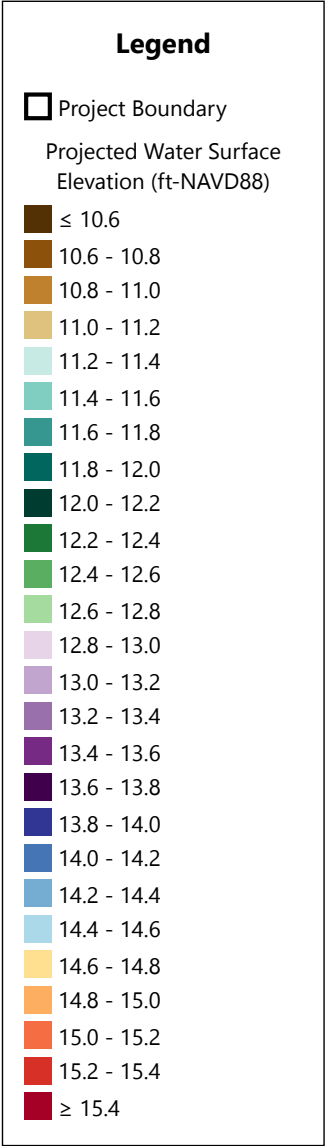
Project Name: Evaluating Vulnerabilities and Options to Promote Resiliency: River Road and Environs
 Location (Town): W. Newbury



Created by: dpwprojects
 Date Created: 3/30/2023
 Tool Version: 1.3



Asset Name	Planning Horizon	Return Period	Max	Min	Area Weighted Average (ft-NAVD88)
River Road, Rocks Village Bridge	2030	0.2% (500-yr)	10.9	10.5	10.6



Climate Resilience Design Standards Tool:
 Sea Level Rise/Storm Surge Design Criteria
 Projected Water Surface Elevation Map: 2050, 0.2% (500-yr)

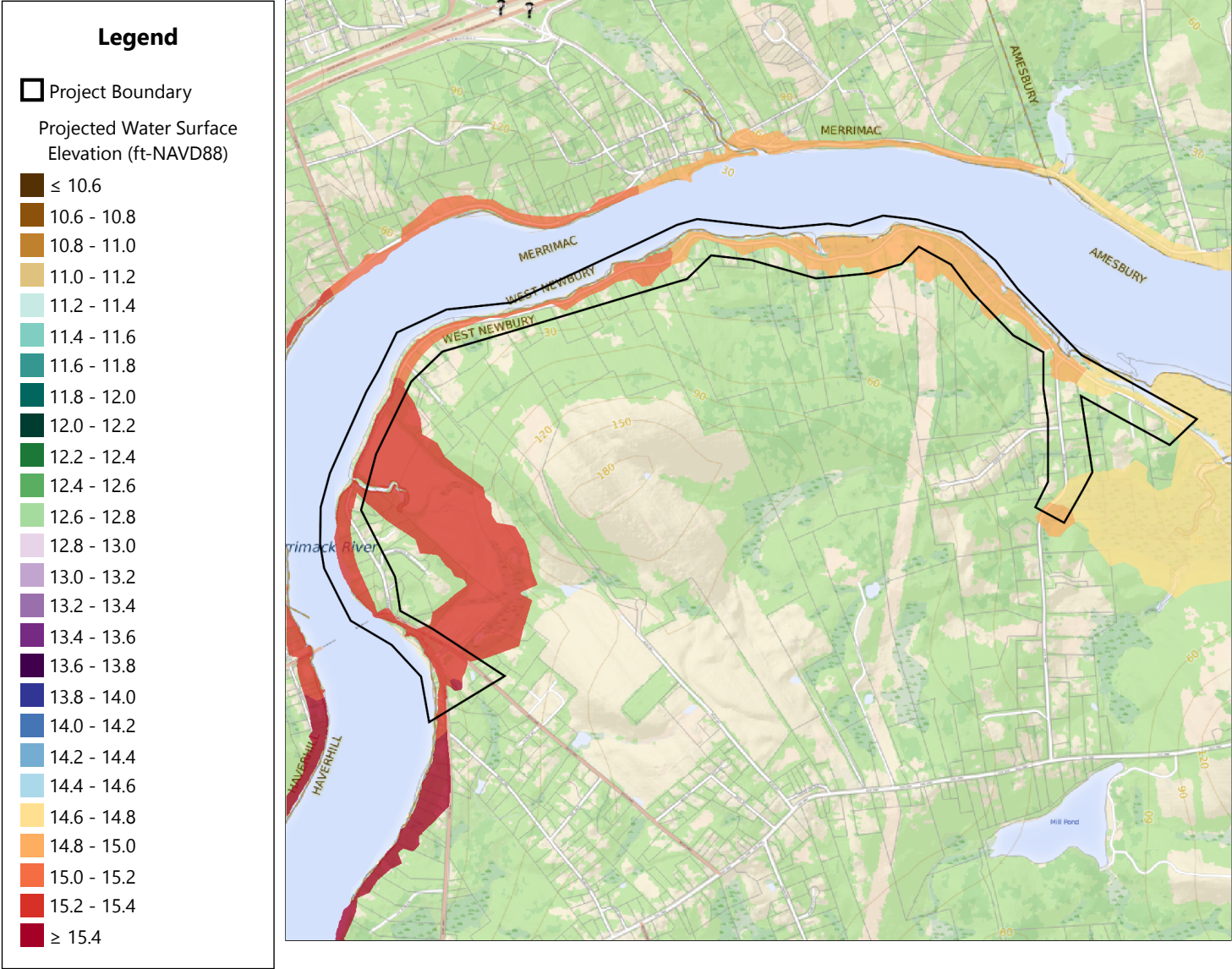
Project Name: Evaluating Vulnerabilities and Options to Promote Resiliency: River Road and Environs
 Location (Town): W. Newbury



Created by: dpwprojects
 Date Created: 3/30/2023
 Tool Version: 1.3



Asset Name	Planning Horizon	Return Period	Max	Min	Area Weighted Average
			(ft-NAVD88)		
River Road, Rocks Village Bridge	2050	0.2% (500-yr)	13.1	12.6	12.8



**Climate Resilience Design Standards Tool:
Sea Level Rise/Storm Surge Design Criteria
Projected Water Surface Elevation Map: 2070, 0.2% (500-yr)**

Project Name: Evaluating Vulnerabilities and Options to Promote Resiliency: River Road and Environs
Location (Town): W. Newbury

0.05 0.1 0.25

Miles

Created by: dpwprojects
Date Created: 3/30/2023
Tool Version: 1.3



Asset Name	Planning Horizon	Return Period	Max	Min	Area Weighted Average
			(ft-NAVD88)		
River Road, Rocks Village Bridge	2070	0.2% (500-yr)	15.4	14.7	15.0

Project Inputs

Core Project Information

Name:	Evaluating Vulnerabilities and Options to Promote Resiliency: River Road and Environs
Given the expected useful life of the project, through what year do you estimate the project to last (i.e. before a major reconstruction/renovation)?	2076
Location of Project:	W. Newbury
Estimated Capital Cost:	\$200,000
Who is the Submitting Entity?	City/Town W. Newbury Christine Wallace (dpwprojects@wnewbury.org)
Is this project identified as a priority project in the Municipal Vulnerability Preparedness (MVP) plan or the local or regional Hazard Mitigation Plan (HMP)?	Yes
Is this project being submitted as part of a state grant application?	No
Which grant program?	
What stage are you in your project lifecycle?	Pre-Planning
Is climate resiliency a core objective of this project?	Yes
Is this project being submitted as part of the state capital planning process?	No
Is this project being submitted as part of a regulatory review process or permitting?	No
Brief Project Description:	This project will analyze vulnerabilities & potential solutions to flood risk from the Merrimack at River Road and environs. It includes public activities, meetings & outreach to inform & engage citizens & Town officials; an existing conditions survey (including bank erosion, watershed delineations, etc) of the areas susceptible to Merrimack River flooding; a study of culverts & stormwater infrastructure; a report of vulnerabilities in 2030, 2050, & 2070; options for shoreline stabilization as well as other solutions (preferably nature-based) for longer timeframes.

Project Submission Comments:

Project Ecosystem Service Benefits

Factors Influencing Output

- ✓ Project provides flood protection through nature-based solutions
- ✓ Project reduces storm damage
- ✓ Project promotes decarbonization
- ✓ Project recharges groundwater
- ✓ Project filters stormwater using green infrastructure
- ✓ Project improves water quality
- ✓ Project enables carbon sequestration
- ✓ Project protects fisheries, wildlife, and plant habitat
- ✓ Project protects land containing shellfish
- ✓ Project provides pollinator habitat
- ✓ Project remediates existing sources of pollution
- ✓ Project provides recreation

Factors to Improve Output

- ✓ Incorporate education and/or protect cultural resources as part of your project

Is the primary purpose of this project ecological restoration?

No

Project Benefits

Provides flood protection through nature-based solutions	Yes
Reduces storm damage	Yes
Recharges groundwater	Yes
Protects public water supply	No
Filters stormwater using green infrastructure	Yes
Improves water quality	Yes
Promotes decarbonization	Yes
Enables carbon sequestration	Yes
Provides oxygen production	Yes
Improves air quality	Yes
Prevents pollution	Yes
Remediates existing sources of pollution	Yes
Protects fisheries, wildlife, and plant habitat	Yes

Protects land containing shellfish	Yes
Provides pollinator habitat	Yes
Provides recreation	Yes
Provides cultural resources/education	Maybe

Project Climate Exposure

Is the primary purpose of this project ecological restoration?	No
Does the project site have a history of coastal flooding?	Yes
Does the project site have a history of flooding during extreme precipitation events (unrelated to water/sewer damages)?	Yes
Does the project site have a history of riverine flooding?	Yes
Does the project result in a net increase in impervious area of the site?	No
Are existing trees being removed as part of the proposed project?	No

Project Assets

Asset: River Road
 Asset Type: Transportation
 Asset Sub-Type: Roads (local)
 Construction Type: Major Repair/Retrofit
 Construction Year: 2026
 Useful Life: 20

Identify the length of time the asset can be inaccessible/inoperable without significant consequences.

Infrastructure may be inaccessible/inoperable for more than a day, but less than a week after natural hazard without consequences.

Identify the geographic area directly affected by permanent loss or significant inoperability of the infrastructure.

Impacts would be regional (more than one municipality and/or surrounding region)

Identify the population directly served that would be affected by the permanent loss or significant inoperability of the infrastructure.

Less than 100,000 people

Identify if the infrastructure provides services to populations that reside within Environmental Justice neighborhoods or climate vulnerable populations.

The infrastructure does not provide services to populations that reside within Environmental Justice neighborhoods or climate vulnerable populations.

Will the infrastructure reduce the risk of flooding?

Yes

If the infrastructure became inoperable for longer than acceptable in Question 1, how, if at all, would it be expected to impact people's health and safety?

Inoperability of the infrastructure would be expected to result in minor impacts to people's health, including minor injuries or minor impacts to chronic illnesses

If there are hazardous materials in your infrastructure, what are the extents of impacts related to spills/releases of these materials?

There are no hazardous materials in the infrastructure

If the infrastructure became inoperable for longer than acceptable in Question 1, what are the impacts on other facilities, assets, and/or infrastructure?

Significant – Inoperability is likely to impact other facilities, assets, or buildings and result in cascading impacts that will likely affect their ability to operate

If the infrastructure was damaged beyond repair, how much would it approximately cost to replace?

Between \$10 million and \$30 million

Does the infrastructure function as an evacuation route during emergencies? This question only applies to roadway projects.

Yes

If the infrastructure became inoperable for longer than acceptable in Question 1, what are the environmental impacts related to natural resources?

No impact on surrounding natural resources is expected

If the infrastructure became inoperable for longer than acceptable in Question 1, what are the impacts to government services (i.e. the infrastructure is not able to serve or operate its intended users or function)?

Loss of infrastructure may reduce the ability to maintain some government services, while a majority of services will still exist

What are the impacts to loss of confidence in government resulting from loss of infrastructure functionality (i.e. the infrastructure asset is not able to serve or operate its intended users or function)?

Reduced morale and public support

Asset: Rocks Village Bridge
 Asset Type: Transportation
 Asset Sub-Type: Bridge
 Construction Type: Maintenance (environmental)
 Construction Year: 2026
 Useful Life: 50

Identify the length of time the asset can be inaccessible/inoperable without significant consequences.

Infrastructure may be inaccessible/inoperable for more than a day, but less than a week after natural hazard without consequences.

Identify the geographic area directly affected by permanent loss or significant inoperability of the infrastructure.

Impacts would be regional (more than one municipality and/or surrounding region)

Identify the population directly served that would be affected by the permanent loss or significant inoperability of the infrastructure.

Less than 100,000 people

Identify if the infrastructure provides services to populations that reside within Environmental Justice neighborhoods or climate vulnerable populations.

The infrastructure does not provide services to populations that reside within Environmental Justice neighborhoods or climate vulnerable populations.

Will the infrastructure reduce the risk of flooding?

Yes

If the infrastructure became inoperable for longer than acceptable in Question 1, how, if at all, would it be expected to impact people's health and safety?

Inoperability of the infrastructure would be expected to result in minor impacts to people's health, including minor injuries or minor impacts to chronic illnesses

If there are hazardous materials in your infrastructure, what are the extents of impacts related to spills/releases of these materials?

There are no hazardous materials in the infrastructure

If the infrastructure became inoperable for longer than acceptable in Question 1, what are the impacts on other facilities, assets, and/or infrastructure?

Significant – Inoperability is likely to impact other facilities, assets, or buildings and result in cascading impacts that will likely affect their ability to operate

If the infrastructure was damaged beyond repair, how much would it approximately cost to replace?

Between \$10 million and \$30 million

Does the infrastructure function as an evacuation route during emergencies? This question only applies to roadway projects.

Yes

If the infrastructure became inoperable for longer than acceptable in Question 1, what are the environmental impacts related to natural resources?

No impact on surrounding natural resources is expected

If the infrastructure became inoperable for longer than acceptable in Question 1, what are the impacts to government services (i.e. the infrastructure is not able to serve or operate its intended users or function)?

Loss of infrastructure may reduce the ability to maintain some government services, while a majority of services will still exist

What are the impacts to loss of confidence in government resulting from loss of infrastructure functionality (i.e. the infrastructure asset is not able to serve or operate its intended users or function)?

Reduced morale and public support

Report Comments

N/A



Consulting
Engineers and
Scientists

Revised May 3, 2023
March 26, 2021
Proposal 2101052

Via email: dpwprojects@wnewbury.org

Ms. Christine Wallace, P.E.
DPW Program and Project Manager
Town of West Newbury
381 Main Street
West Newbury, MA 01985

Dear Ms. Wallace:

**Re: Proposed MVP Action Grant Tasks
West Newbury MVP Action Grant
West Newbury, Massachusetts**

GEI Consultants Inc. is pleased to present the Town of West Newbury Municipal Vulnerability Preparedness (MVP) Team with a draft document of the suggested scope of work and task list to aid the Town in applying for an MVP Action Grant in 2023. It is our understanding that the Town of West Newbury is interested in evaluating the flood risk due to more frequent and extreme flooding events caused by climate change, and how this risk may affect residences, access to residences, and roadways. Specifically, we understand that the area of interest is along River Road and the lower portions of Coffin Street and Bridge Streets where they intersect with River Road. Additionally, the Town is concerned about erosion along the banks of the Merrimack River near River Road and the potential benefit of shoreline stabilization measures such as Living Shorelines.

The Town has asked for GEI's assistance in identifying task items and cost estimates for tasks that would support an MVP Action Grant addressing the flood risk and bank stability concerns summarized above. It is our understanding that these proposed tasks and cost estimates will help the Town determine the amount of funding to seek from an MVP Action Grant. Should the Town be awarded an MVP Action Grant in 2023, GEI will prepare a separate proposal in order to contract with the Town for these suggested tasks.

Our recommended tasks are based on our local knowledge of the Town of West Newbury, our correspondence with you via email, and our participation in the West Newbury MVP Team meetings.

About GEI

GEI is a consulting engineering firm specializing in geotechnical, environmental, water resources, and ecological services. GEI has an in-house staff of skilled and experienced environmental scientists, restoration ecologists, hydrologic and hydraulic modelers, landscape architects, water quality specialists, and marine and geotechnical engineers with extensive coastal and riverine experience. We partner with organizations skilled in risk-related community engagement.

We are experts in resiliency and vulnerability studies in coastal and waterfront settings, utilizing robust coastal and riverine modeling to determine flood extents and erosion potential during increased storm conditions, future rates of precipitation, and projected sea level rise values.

GEI has significant experience in a wide range of Living Shoreline project types for a spectrum of spatial scales. GEI also has experience in combined approaches that couple structural elements with bioengineering techniques on the slope face and grading into a fully vegetated transition area at the top of the slope. GEI has found this technique to be a successful solution in challenging and dynamic coastal and riverine systems where Living Shorelines alone would not be sufficient in preventing erosion. We strive to assemble the most appropriate mix of Living Shoreline techniques for each given site.

GEI will team with the Gulf of Maine Research Institute (GMRI). GMRI has a robust Municipal Climate Action Program (MCAP) that engages coastal communities to support better understanding of local sea level rise impacts and provides them with knowledge, skills, and tools they need to develop community-focused and data-driven resilience plans to thrive in a changing world. GMRI has worked with over 40 coastal communities and has engaged over 3,000 participants.

Suggested MVP Action Grant Tasks

We recommend that the following task items be included when considering an MVP Action Grant for the Town of West Newbury. Depending on funding availability, the Town of West Newbury could choose to undertake some or all of the suggested tasks as well as consider options for phasing the tasks over multiple grant awards. GEI will work with GMRI to provide educational community workshops to the public and guided planning workshops geared towards community leaders and project stakeholder throughout the duration of project. We have indicated below where GMRI will be included. We anticipate participating in monthly meetings with the Town of West Newbury Project Team. Additionally, we will help prepare the Town of West Newbury with grant reporting and invoicing requirements for this grant project.

Task 1: Project Kickoff and Initial Community Engagement

This first task will include an initial internal kickoff meeting with the project group (GEI, GMRI, and the Town of West Newbury Project Team), a facilitated public kickoff meeting to review the project goals and start conversations around sea level rise education, and digital and print media development.

Task 1.1: Internal Kickoff Meeting

The internal kickoff meeting with the Town of West Newbury Project Team, GEI, and Gulf of Maine Research Institute (GMRI) will take place once the Town has contracted with GEI. The overall project schedule, goals, tasks, and deliverables will be reviewed during this meeting. We assume this meeting will take place virtually.

Task 1.1 Deliverables: Meeting minutes.

Task 1.2: Print and Digital Media Development

The Town of West Newbury Project Team, GMRI, and GEI will work together to develop posters and flyers that describe the study and advertise public events. The posters and flyers will be made available around Town to notify residents of the need for the project, the study process, and objectives. GEI and GMRI will assist the Project Team with language development for project-related announcements made in print-media sources, such as the local newspaper.

West Newbury will join GMRI's Coastal Flood Community Science project. Here, coastal communities engage their residents in making observations of high water, or evidence of high water, and contributing photographs, weather observations, impacts to their community and personal narrative about changes they have observed over time. This process builds community awareness of past and current flood impacts, provides the Town with local data and community input to inform decisions, and is used by the National Weather Service to ground truth flood models and provide more

timely flood alerts. To promote participation, signage will be installed along each end of River Road. The signs will be in English and Spanish (the most prevalent second language in Essex County) and will describe the project and contain a QR code to the project webpage where community members can contribute data. We will also host a virtual training webinar to share with community members the project goals, the need for this data, and how to make and contribute observations. We will record the webinar and link to it on the project page.

GEI and GMRI will provide language and updates for a project-specific webpage to be hosted on the Town's website. The project webpage will review the project, link to the community science project, provide updates, and advertise project-related events. Updates to the website will be communicated via Town email lists and Town social media platforms. The webpage will include a space for community feedback and questions related to the project. The webpage will be updated throughout the project.

Task 1.2 Deliverables: Webpage development, West Newbury joining the Coastal Flood Community Science project, copies of signage along River Road and Coffin Street, copies of media announcements.

Task 1.3: Community Engagement Kickoff Event

The Town of West Newbury Project Team, GMRI, and GEI will jointly host the initial public kickoff event. While the project takes place in West Newbury, neighboring communities will be invited to the public events to increase understanding of sea level rise and its impacts among a broader audience. GEI will provide an overview of the project and its goals. GMRI will facilitate a community climate conversation to build participant knowledge of sea level rise scenarios and future projections using the scenarios available in the Massachusetts Ocean Resource Information System (MORIS). Community values and high-priority climate vulnerabilities will emerge through the facilitated discussion and map-based group activity.

Task 1.3 Deliverables: Presentation slides and recording of event.

Task 1 Schedule: We anticipate the project kickoff to occur in September 2023 and for Task 1 to be completed by December 31, 2023.

Task 2: Existing Conditions of Shoreline Evaluation and Drone Survey

Task 2.1: Existing Conditions of Shoreline Evaluation

In this task, we will evaluate the condition of the existing shoreline along the Merrimack River, paying particular attention to areas with evidence of unstable banks, erosion, and slumping. We will document current land cover along the shore (such as vegetation, exposed soil or bedrock, and man-made stabilization such as rip rap retaining walls, log jams, live staking and other bio-engineering methods). Shoreline gradient (i.e., slope of bank), height of bank, presence of a fringing marsh, and distance of nearest structures to the shoreline will also be documented. We will also identify structures in the river such as docks, noting whether these structures appear to be permanent or temporary. The shoreline conditions will be documented using a combination of drone footage, field visits, GIS data compilation, and historical map and imagery review. As part of this task, GEI will also identify and inventory areas suitable for fully green living shoreline solutions, areas likely requiring a hybrid solution that combines vegetation with hard armoring, and areas likely requiring a hardened shoreline such as rip rap or a retaining wall. Documenting the existing conditions will provide GEI with a strong foundation moving forward in the project and will ensure that we understand conditions specific to West Newbury.

Task 2.1 Deliverables: Technical memo of findings.

Task 2.2: Drone Survey

GEI will complete a drone survey to aid in documenting the existing conditions of the shoreline. We will invite the public to watch our trained field staff operate the drone. Technical experts will be on site to describe the project to community members and answer questions about the drone and drone survey. Drone footage of real-time uses and operations of shorelines and slopes, such as the interactions with currents and waves, the launching of watercraft, and local boat traffic patterns, has proved beneficial in acquiring comprehensive knowledge of conditions and uses of waterfront locations. Footage from the drone will be made available on the project webpage.

Task 2.2 Deliverables: Digital files of drone footage.

Task 2 Schedule: We anticipate the evaluation of the existing conditions and the drone survey to be completed by January 31, 2024.

Task 3: Existing Conditions of Culverts Survey

This task consists of evaluating the condition of existing culverts and other potential surface water conveyances (i.e., drainage ditches) in the area of interest. The purpose of the investigation would be to assess the capacity limits of existing culverts and identify areas where flow may be constricted, and/or where culvert conditions may contribute to current or future flooding. GEI field staff will visit the site during a rainfall event to observe how culverts perform during storm conditions.

Task 3 Deliverables: Technical memo of findings to include tables detailing existing conditions of culverts and a figure of culvert locations.

Task 3 Schedule: We anticipate the drone footage to be completed by January 31, 2024.

Task 4: Community Education Event and Local Official Training**Task 4.1: Community Education Event**

A second community education event will be held in the winter of 2023/2024 to target an audience that may have missed the initial facilitated sea level rise event. Similar to the initial event, neighboring communities will be invited to participate. GMRI will facilitate a community climate conversation to build participant knowledge of sea level rise scenarios and future projections using the scenarios available in the Massachusetts Ocean Resource Information System (MORIS). Community values and high-priority climate vulnerabilities will emerge through the facilitated discussion and map-based group activity. We will also stream and record this event to allow for hybrid participation and will provide a link to view the presentation which can be posted on the project website.

Task 4.1 Deliverables: Presentation slides and recording of event.

Task 4.2: Planning Forward Event

GMRI will lead a small-group learning experience aimed at local officials, leaders representing socially vulnerable populations, and project stakeholders. The learning experience is designed to provide a community-driven framework for coastal communities to engage in the complex conversations surrounding climate planning as they consider vulnerabilities and resiliency strategies. The learning experience is rooted in challenges and strategies that will ground participants in a discussion that should feel strongly relevant to the places they call home. Through a 3-part, 4 hour workshop, participants will engage in conversations around community values and identity to help guide the experience and empower participants to confront the difficult reality of our changing climate as they consider possible futures through new perspectives.

Part 1: Participants complete activities that ground the discussions in a strong sense of place and community value.

Part 2: Guided by community values, participants confront the complex impacts of sea level rise and related impacts to their community and collaborate around identifying and prioritizing resilience strategies.

Part 3: Participants reflect on the role of community values in decision-making and identify climate vulnerabilities and resilience that emerged as high priorities for their community.

Task 4.2 Deliverables: Presentation slides, sign in sheet.

Task 4.3: Local Official MC-FRM Training

GEI and GMRI will work together to provide a training of the Massachusetts Coast Flood Risk Model (MC-FRM) to local officials in the Town of West Newbury. The goal of the training will be on the science behind the model, increasing the understanding of risk-related terminology (e.g., “what is the meaning of exceedance probabilities?”), and discussing how the model can be used to inform Town planning.

Task 4.3 Deliverables: Presentation slides and meeting minutes.

Task 4 Schedule: We anticipate Task 4 to be completed by March 31, 2024.

Task 5: Flood Vulnerability Study

The vulnerability study will focus on present day and future flood risk due to sea level rise, storm surge, and precipitation events. The goal of this study will be to identify infrastructure, environments, and populations at risk of flood inundation for various timelines, specifically in 2030, 2050, and 2070. We will create a GIS asset database for the Town of West Newbury, described in Section 5.1, to support the vulnerability study. The coastal flood risk will be based on the Massachusetts Coastal Flood Risk Model (MORIS) results for the 1% annual chance (“100-yr”) storm exceedance probability for the years 2030, 2050, and 2070. These results show the 1% annual chance risk of flooding due to storm surge and sea level rise. In addition to evaluating the coastal flood risk, we will develop a hydrologic and hydraulic analysis of existing culverts that cross River Road, Coffin Street, and/or Bridge Street to evaluate the hydraulic capacity of the culverts during precipitation events. GEI will perform the following tasks to support the Vulnerability Study:

Task 5.1: GIS Data Compilation

GEI will prepare an asset inventory using readily available GIS data of assets to include in the vulnerability analysis for the Town of West Newbury. Assets such as transportation, power, public safety, education, and building infrastructure will be included in the inventory. Additionally, we will include public spaces, such as wetlands, parks, playgrounds, and trails.

GEI will compile existing topographic data using readily available technical data from sources such as FEMA, United States Geological Survey (USGS), and the National Oceanic and Atmospheric Administration (NOAA). Topographic data will be used to understand depths of flooding of at-risk infrastructure.

Task 5.1 Deliverables: Digital GIS files.

Task 5.2: Merrimack River Flood Risk Analysis

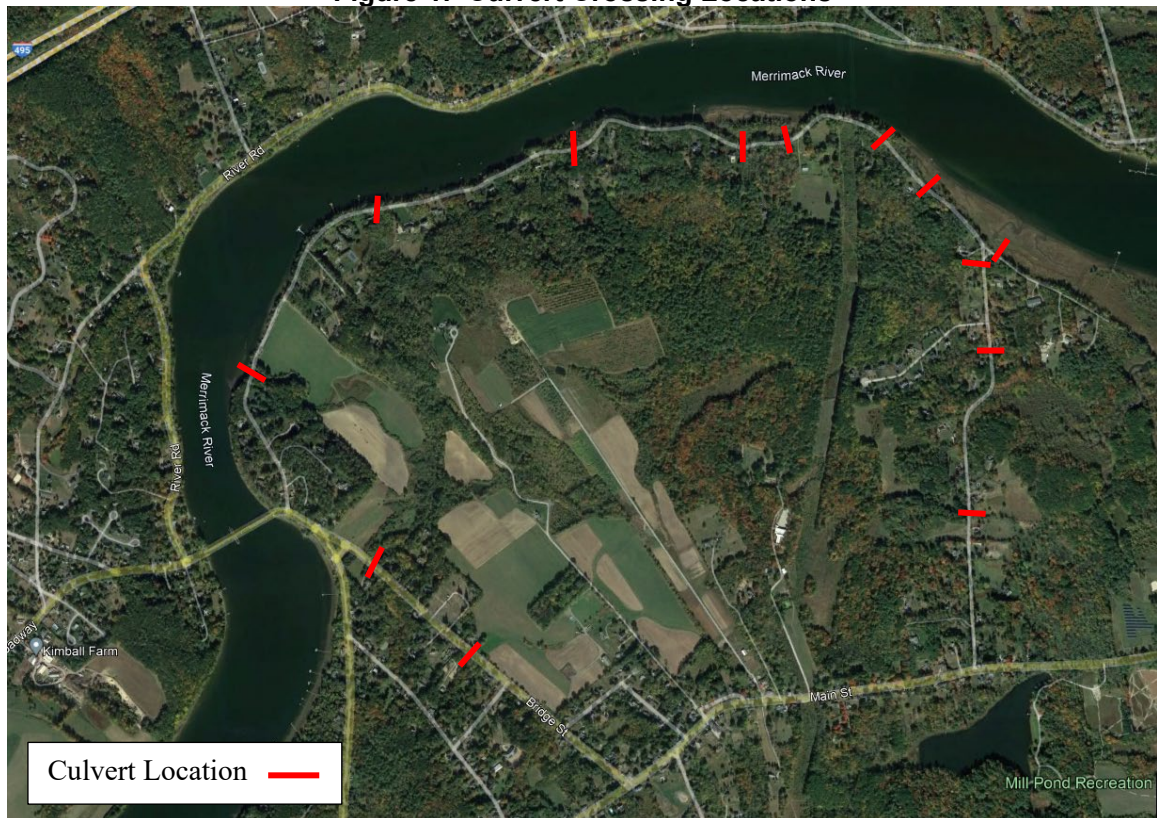
GEI will use the MORIS modeling results to evaluate flood vulnerability of infrastructure, environments, and populations due to coastal storms and sea level rise for the years 2030, 2050, and 2070. The model results will be used with the GIS data asset inventory to identify infrastructure, environments, and populations at risk of flooding. Taking into consideration the risk of flooding, sensitivity to flooding, and adaptive capacity of the infrastructure, we will help the Town prioritize adaptation efforts in terms of near-term (2030), medium-term (2050), and long-term (2070) timelines.

Task 5.2 Deliverables: Report summarizing vulnerability assessment and identified infrastructure, environments, and populations at risk of flood inundation due to storm surge, sea level rise, and precipitation events. The report will include recommendations on adaptation timelines depending on the flood-risk, adaptive capacity, and sensitivity to flooding of assets. Maps showing flood extents and infrastructure at risk will be included in the report.

Task 5.3: River Road Flood Risk Analysis

This task will include a hydrologic and hydraulic analysis of local streams and culverts that cross River Road, Coffin Street, or Bridge Street. Based on a review of aerial imagery, MassDEP Wetlands dataset, and USGS' StreamStats web application we have identified at least 13 possible culvert crossings to be included in the analysis. The proposed culvert locations to be analyzed are shown in the figure below:

Figure 1: Culvert Crossing Locations



We will delineate the watersheds using the readily available online digital elevation data and assess the hydrologic characteristics using available GIS data. We intend to use the Soil Conservation Service (SCS) Runoff Curve Number (CN) Method to model infiltration. To calculate the weighted curve numbers, we will use Hydrologic Soil Group (HSG) data obtained from the NRCS Web-Soil

Survey online tool and land cover (forest, impervious, grassland, etc.) data from MassGIS' 2016 Land Cover/Land Use dataset. Our work will also include developing Unit hydrographs and time of concentration estimates for the watersheds using the SCS Unit hydrograph transform method.

GEI will use information obtained in Task 4, such as culvert length, diameter, material, and relative culvert and roadway elevations, to develop a HEC-HMS model to estimate culvert discharge and depths of flow for the 2-, 5-, 10-, 25-, 50- and 100-year annual recurrence 24-hour storm events.

Precipitation estimates for the selected events will be obtained from the National Oceanic and Atmospheric (NOAA) Atlas 14 Precipitation Frequency Data Server.

Task 5.3 Deliverables: Technical memo to include information on each crossing's hydraulic capacity during selected storm events and identify culvert crossings at risk of inundation during design storms.

Task 5 Schedule: We anticipate Task 5 to be completed by June 30, 2024.

Task 6: Public Project Update and Community Event

Task 6.1: Community Site Visit

GEI and GMRI will participate in a community site visit event where areas at risk of flooding, identified during Task 5, will be visited in-person so the impact of the flooding can be imagined by community members. The event will be advertised in digital and print media. Areas at risk of flooding and/or erosion will be explored. We will also use this event to promote the Coastal Flood Community Science project to community members in attendance.

Task 6.1 Deliverables: Photos of event.

Task 6.2: Public Project Update

A public meeting will be held after the completion of Task 5, the Vulnerability Study. GEI will lead the meeting and provide a summary of the results of the vulnerability study and an updated timeline for the remainder of the project. We will provide an overview of climate adaptation options that could be used for the identified vulnerable areas. Additionally, GMRI will work with GEI and the Town of West Newbury Project Team to update the project webpage with an ArcGIS StoryMap of the vulnerability study results. The StoryMap will include climate projection maps, community-contributed data of flood observations, and geo-located narratives of the climate adaptation options provided by GEI.

Task 6 Deliverables: Memorandum with presentation slides, meeting materials, meeting minutes, StoryMap and updated webpage.

Task 6 Schedule: We anticipate Task 6 to be completed by September 30, 2024.

Task 7: Shoreline Stabilization Options and Locations

In this task, GEI will provide an overview of shoreline stabilization options suitable for areas along the banks of the Merrimack River identified as being unstable. Our overview will have an emphasis on application of green and hybrid shoreline protection systems to the extent practical. We will provide our recommendations for which options to pursue in future phases of work. Our recommendations will be based on our experience designing shoreline stabilization solutions, including many Living Shorelines solutions, in the Northeast and Mid-Atlantic. GEI will also utilize our knowledge of the local riverine and shoreline environment which includes shoreline stabilization projects with Living Shorelines elements along the Merrimack River.

Task 7 Deliverables: Memo summarizing shoreline stabilization options at areas with observed shoreline instability.

Task 7 Schedule: We anticipate Task 7 to be completed by December 31, 2024.

Task 8: Infrastructure Flood Adaptation Options

GEI has had the opportunity to work on many municipal vulnerability and adaptation projects, utilizing both our modeling staff and waterfront design team. We strive to create designs to ensure that communities can continue to use their assets well into the future and during storm conditions. This task would evaluate concepts for increased resiliency of infrastructure elements at risk of future flooding. We will provide a general overview of adaptation options, which may include elevating roads, replacing/enlarging culverts, installing floodwalls, flood-proofing infrastructure, managed retreat, or other related measures. We will consider adaptation measures for the near-term, medium-term, and long-term and will put an emphasis on adaptation measures that can be modified over time as the flood risk changes.

Task 8 Deliverables: Memo reviewing adaptation options and recommendations for infrastructure, environments, and populations identified as being at risk of flooding.

Task 8 Schedule: We anticipate Task 8 to be completed by December 31, 2024.

Task 9: Final Public Meeting

A final meeting will be held by the Town, GEI, and GMRI to present project results and next steps. This meeting will be held after the completion of the vulnerability assessment, shoreline stabilization options, and infrastructure flood adaptation options. The meeting will be held with the Select Board, community members, and other local and state representatives to present the study results and solution options and to seek input and develop consensus and consider next steps as a community.

Task 9 Deliverables: Presentation slides, meeting minutes.

Task 9 Schedule: We anticipate Task 9 will be completed by March 31, 2025.

Task 10: Final Report and Continuing Webpage Development

Task 10.1: Final Report

GEI will compile and summarize the findings of the project into a final report. The report will include an Executive Summary that will have the ability to operate as a stand-alone document to summarize the project goals, methods, and findings in a non-technical manner for information conveyance to a layperson. GEI will prepare a draft report by May 31, 2025, for review by the Project Team and the MVP Regional Coordinator.

Task 10.1 Deliverables: Final Report

Task 10.2: Continuing Webpage Development

GMRI will assist in updating the ArcGIS Storymap with final project results and next steps for the community. We will also develop the map with the intent that West Newbury will host it, which enables the town to update the map as it could showcase geo-located adaptation success stories.

Task 10.2 Deliverables: Updated webpage.

Task 10 Schedule: Task 10 will be completed by June 30, 2025.

Project Team

The key personnel for this project have been chosen based on their experience with flood vulnerability studies and shoreline stabilization projects. Leila Pike, P.E. will be the Project Manager and Lead Engineer responsible for the Flood Risk Analysis. Mike Sabulis, LSP will assist in Project Management and grant requirements. Lissa Robinson, P.E., will serve as senior advisor of the flood risk analysis. Dan Bannon, P.E. will be the senior designer leading the shoreline stabilization and infrastructure adaptation design. Barney Baker, P.E. will be the senior advisor on the shoreline stabilization and design aspects for this project. Travis Pryor, RLA will serve as a landscape architect on the team. Marc Chmura, Amanda Barnett, and Dan Pelletier will assist with compiling data, performing analyses, field work, and preparing results. Brenda Pinkham will assist with report and figure preparation.

GEI will team with GMRI, who will lead the community engagement and public education portion of this project. Gayle Bowness will be the lead for the GMRI. Gayle will leverage additional expertise at GMRI to support sea level rise science (Hannah Baranes) and digital product development (Alex Kerney).

Cost Estimate and Schedule

Based on GEI's expertise in executing the tasks described above, we have developed the following cost estimate:

Task	Cost Estimate
Task 1: Project Kickoff and Initial Community Engagement	\$21,400
Task 2: Existing Conditions of Shoreline Evaluation and Drone Survey	\$16,400
Task 3: Existing Conditions of Culverts Survey	\$9,200
Task 4: Community Education Event and Local Official Training	\$21,500
Task 5: Flood Vulnerability Study	\$49,500
Task 6: Public Project Update and Community Event	\$18,000
Task 7: Shoreline Stabilization Options and Locations	\$15,500
Task 8: Infrastructure Flood Adaptation Options	\$18,000
Task 9: Final Public Meeting	\$12,200
Task 10: Final Report and Continuing Webpage Development	\$17,300
Total:	\$199,000

These costs are subject to change if revisions to the Scope of Work are made after conversations with the Town of West Newbury and/or after the grant is awarded.

If the Town of West Newbury is awarded an MVP Action Grant, we anticipate a project start in mid-September 2023 with a project completion by June 30, 2025.

Limitations

These suggested tasks for an MVP Action Grant for the Town of West Newbury and the accompanying cost estimates were prepared for the use of the Town of West Newbury, exclusively, including its submission for MVP Grants. The opinions, cost estimates, and conclusions presented in

this letter are based solely on the information exchanged through emails and meetings with the MVP Team. Additional information regarding the project area that was not available to us may result in a modification of tasks and cost estimates.

If the grant is awarded to the Town, we will prepare a separate scope of work and cost estimate which will include a Standard Professional Services Agreement.

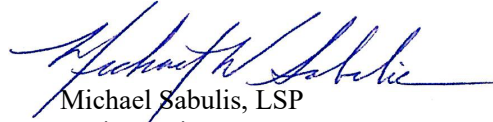
We appreciate this opportunity to support the Town of West Newbury in acquiring an MVP Action Grant. We are happy to discuss the options above, provide additional tasks that you would like to include, and/or revise tasks as shown. Please reach out should you have any questions.

Sincerely,

GEI CONSULTANTS, INC.



Leila A. Pike, P.E.
Civil Engineer/Project Manager



Michael Sabulis, LSP
Senior Project Manager

LAP/MWS:bdp

West Newbury Climate Change Resiliency

TASK	LEAD	START	END	FY 2024												FY 2025											
				Sep 2023	Oct 2023	Nov 2023	Dec 2023	Jan 2024	Feb 2024	Mar 2024	Apr 2024	May 2024	June 2024	Jul 2024	Aug 2024	Sep 2024	Oct 2024	Nov 2024	Dec 2024	Jan 2025	Feb 2025	Mar 2025	Apr 2025	May 2025	Jun 2025		
FY 2024																											
Task 1: Project Kick-off, Management, and Reporting	PM, GEI/GMRI PM PM	SEP 2023	SEP 2023																								
Task 1.1 - Internal Kick-off Meeting with Town, EEA, and Consultant (GEI Task 1.1)		SEP 2023	JUN 2024																								
Task 1.2 - Monthly Progress Reports FY24		SEP 2023	JUN 2024																								
Task 1.3 - Monthly Coordination at Climate Change Resiliency Committee Meetings (CCRC)																											
Task 2: Public Involvement and Community Engagement in FY24																											
Task 2A - Led by GEI/GMRI																											
Task 2A.1 - Initial Community Engagement: Print and Digital Media Development (GEI Task 1.2)	GEI/GMRI	SEP 2023	DEC 2023																								
Task 2A.2 - Initial Community Engagement: Community Engagement Kickoff (GEI Task 1.3)	GEI/GMRI	SEP 2023	DEC 2023																								
Task 2A.3 - Drone Public Event (included in Task 3.2 below, GEI Task 2.2)	GEI	SEP 2023	JAN 2024																								
Task 2A.4 - Community Education Event (GEI Task 4.1)	GEI/GMRI	JAN 2024	MAR 2024																								
Task 2A.5 - Planning Forward Event (GEI Task 4.2)	GEI/GMRI	JAN 2024	MAR 2024																								
Task 2A.6 - Local Official MC-FRM Training (GEI Task 4.3)	GEI/GMRI	JAN 2024	MAR 2024																								
Task 2B - Led by CCRC																											
Task 2B.1 - Kayaking Tour of Merrimack River	CCRC	SEP 2023	OCT 2023																								
Task 2B.2 - Host Climate Cafe by Local Youth	CCRC	DEC 2023	MAY 2024																								
Task 2B.3 - Resiliency Committee Members to Offer River Tour of River Road Section with InterpretiveTour	CCRC	SEP 2023	OCT 2023																								
Task 2B.4 - "Field Trips" Guided Walks/Tours Related to the Rriver	CCRC	APR 2024	MAY 2024																								
Task 2C - Led by Library																											
Task 2C.1 - G.A.R. Library Read Up A Storm Kickoff Event	LIBRARY	OCT 2023	OCT 2023																								
Task 2C.2 - G.A.R. Library Event/Talk with Corresponding Children's Storytime/Craft	LIBRARY	JAN 2024	APR 2024																								
Task 3 - Existing Conditions of Shoreline Survey (GEI Task 2)																											
Task 3.1 - Existing Conditions of Shoreline Evaluation (GEI Task 2.1)	GEI	SEP 2023	JAN 2024																								
Task 3.2 - Drone Survey, including Drone Public Event (GEI Task 2.2)	GEI	SEP 2023	JAN 2024																								
Task 4: Existing Conditions of Culverts Survey (GEI Task 3)																											
Task 4.1 Existing Conditions of Culverts Survey (GEI Task 3)	GEI	SEP 2023	JAN 2024																								
Task 5 - Vulnerability Study (GEI Task 5)																											
Task 5.1 - GIS Data Compilation (GEI Task 5.1)	GEI	SEP 2023	JUN 2024																								
Task 5.2 - Merrimack River Flood Risk Analysis (GEI Task 5.2)	GEI	SEP 2023	JUN 2024																								
Task 5.3 - River Road Flood Risk Analysis (GEI Task 5.3)	GEI	SEP 2023	JUN 2024																								
FY 2025																											
Task 6: Project Management and Reporting																											
Task 6.1 - Monthly Progress Reports FY25	PM	JUL 2024	JUN 2025																								
Task 6.2 - Monthly Coordination at CCRC Meetings	PM	JUL 2024	JUN 2025																								
Task 6.3 - Project Case Study	PM	APR 2025	JUN 2025																								
Task 7: Public Involvement and Community Engagement in FY25																											
Task 7A - Led by GEI/GMRI																											
Task 7A.1 - Community Site Visit (GEI Task 6.1)	GEI/GMRI	JUL 2024	SEP 2024																								
Task 7A.2 - Public Project Update (GEI Task 6.2)	GEI/GMRI	JUL 2024	SEP 2024																								
Task 7A.3 - Final Public Meeting (GEI Task 9)	GEI/GMRI	JAN 2025	MAR 2025																								
Task 7B - Led by CCRC																											
Task 7B.1 - Host Climate Cafe by Local Youth	CCRC	DEC 2024	MAY 2025																								
Task 7B.2 - Develop Interpretive Tour with Harbor Tours for their Routine Tours on Merrimack River (Haverhill section)	CCRC	MAY 2025	JUN 2025																								
Task 7C - Led by Library																											
Task 7C.1 - G.A.R. Library Storywalk Family Night (unveil new story & have program/craft related to it)	Library	JUL 2024	JUL 2024																								
Task 7C.2 - G.A.R. Library Begins publicizing Community Read	Library	JAN 2025	JAN 2025																								
Task 7C.3 - G.A.R. Library Programs Related to the Chosen Book (talk/movie/kid's event)	Library	FEB 2025	APR 2025																								
Task 7C.4 - G.A.R. Library Community Read Book Discussion/Author talk	Library	MAY 2025	JUN 2025																								
Task 8: Shoreline Stabilization Options and Locations (GEI Task 7)																											
Task 8.1 Shoreline Stabilization Options and Locations (GEI Task 7)	GEI	JUL 2024	DEC 2024																								
Task 9: Infrastructure Flood Adaptation Options (GEI Task 8)																											
Task 9.1 Infrastructure Flood Adaptation Options (GEI Task 8)	GEI	JUL 2024	DEC 2024																								
Task 10 - Final Report and Continuing Webpage Development (GEI Task 10)																											
Task 10.1 - Draft and Final Report (GEI Task 10.1)	GEI	JAN 2025	JUN 2025																								
Task 10.2 - Continuing Wepage Development (GEI Task 10.2)	GEI	JAN 2025	JUN 2025																								

OVERALL TASKS AND SCHEDULE - CHRONOLOGICAL ORDER

West Newbury Climate Change Resiliency

Evaluating Vulnerabilities and Options to Promote Resiliency: River Road and Environs

TASK	LEAD	START	END	FY 2024												FY 2025											
				Sep 2023	Oct 2023	Nov 2023	Dec 2023	Jan 2024	Feb 2024	Mar 2024	Apr 2024	May 2024	June 2024	Jul 2024	Aug 2024	Sep 2024	Oct 2024	Nov 2024	Dec 2024	Jan 2025	Feb 2025	Mar 2025	Apr 2025	May 2025	Jun 2025		
FY 2024-2025																											
Task 1.1 - Internal Kick-off Meeting with Town, EEA, and Consultant (GEI Task 1.1)	PM, GEI/GMRI	SEP 2023	SEP 2023	X																							
Task 1.2 - Monthly Progress Reports FY24	PM	SEP 2023	JUN 2024	X	X	X	X	X	X	X	X	X	X														
Task 1.3 - Monthly Coordination at Climate Change Resiliency Committee Meetings (CCRC)	PM	SEP 2023	JUN 2024	X	X	X	X	X	X	X	X	X	X														
Task 2B.1 - Kayaking Tour of Merrimack River	CCRC	SEP 2023	OCT 2023		X																						
Task 2B.3 - Resiliency Committee Members to Offer River Tour of River Road Section with InterpretiveTour	CCRC	SEP 2023	OCT 2023		X																						
Task 2C.1 - G.A.R. Library Read Up A Storm Kickoff Event	LIBRARY	OCT 2023	OCT 2023		X																						
Task 2A.1 - Initial Community Engagement: Print and Digital Media Development (GEI Task 1.2)	GEI/GMRI	SEP 2023	DEC 2023				X																				
Task 2A.2 - Initial Community Engagement: Community Engagement Kickoff (GEI Task 1.3)	GEI/GMRI	SEP 2023	DEC 2023				X																				
Task 2A.3 - Drone Public Event (included in Task 3.2 below, GEI Task 2.2)	GEI	SEP 2023	JAN 2024					X																			
Task 3.1 - Existing Conditions of Shoreline Evaluation (GEI Task 2.1)	GEI	SEP 2023	JAN 2024					X																			
Task 3.2 - Drone Survey, including Drone Public Event (GEI Task 2.2)	GEI	SEP 2023	JAN 2024					X																			
Task 4.1 Existing Conditions of Culverts Survey (GEI Task 3)	GEI	SEP 2023	JAN 2024					X																			
Task 2A.4 - Community Education Event (GEI Task 4.1)	GEI/GMRI	JAN 2024	MAR 2024						X																		
Task 2A.5 - Planning Forward Event (GEI Task 4.2)	GEI/GMRI	JAN 2024	MAR 2024						X																		
Task 2A.6 - Local Official MC-FRM Training (GEI Task 4.3)	GEI/GMRI	JAN 2024	MAR 2024						X																		
Task 2C.2 - G.A.R. Library Event/Talk with Corresponding Children's Storytime/Craft	LIBRARY	JAN 2024	APR 2024							X																	
Task 2B.2 - Host Climate Cafe by Local Youth	CCRC	DEC 2023	MAY 2024									X															
Task 2B.4 - "Field Trips" Guided Walks/Tours Related to the River	CCRC	APR 2024	MAY 2024									X															
Task 5.1 - GIS Data Compilation (GEI Task 5.1)	GEI	SEP 2023	JUN 2024											X													
Task 5.2 - Merrimack River Flood Risk Analysis (GEI Task 5.2)	GEI	SEP 2023	JUN 2024											X													
Task 5.3 - River Road Flood Risk Analysis (GEI Task 5.3)	GEI	SEP 2023	JUN 2024											X													
Task 6.1 - Monthly Progress Reports FY25	PM	JUL 2024	JUN 2025												X	X	X	X	X	X	X	X	X				
Task 6.2 - Monthly Coordination at CCRC Meetings	PM	JUL 2024	JUN 2025												X	X	X	X	X	X	X	X	X				
Task 7C.1 - G.A.R. Library Storywalk Family Night (unveil new story & have program/craft related to it)	Library	JUL 2024	JUL 2024											X													
Task 7A.1 - Community Site Visit (GEI Task 6.1)	GEI/GMRI	JUL 2024	SEP 2024												X												
Task 7A.2 - Public Project Update (GEI Task 6.2)	GEI/GMRI	JUL 2024	SEP 2024												X												
Task 8.1 -Shoreline Stabilization Options and Locations (GEI Task 7)	GEI	JUL 2024	DEC 2024													X											
Task 9.1 - Infrastructure Flood Adaptation Options (GEI Task 8)	GEI	JUL 2024	DEC 2024													X											
Task 7C.2 - G.A.R. Library Begins publicizing Community Read	Library	JAN 2025	JAN 2025														X										
Task 7A.3 - Final Public Meeting (GEI Task 9)	GEI/GMRI	JAN 2025	MAR 2025															X									
Task 7C.3 - G.A.R. Library Programs Related to the Chosen Book (talk/movie/kid's event)	Library	FEB 2025	APR 2025																X								
Task 7B.1 - Host Climate Cafe by Local Youth	CCRC	DEC 2024	MAY 2025																	X							
Task 10.1 - Draft and Final Report (GEI Task 10.1)	GEI	JAN 2025	JUN 2025																		X	X					
Task 10.2 - Continuing Wepage Development (GEI Task 10.2)	GEI	JAN 2025	JUN 2025																			X					
Task 6.3 - Project Case Study	PM	APR 2025	JUN 2025																				X				
Task 7B.2 - Develop Interpretive Tour with Harbor Tours for their Routine Tours on Merrimack River (Haverhill section)	CCRC	MAY 2025	JUN 2025																				X				
Task 7C.4 - G.A.R. Library Community Read Book Discussion/Author talk	Library	MAY 2025	JUN 2025																				X				



Town of West Newbury Massachusetts

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River Road Climate Change Resiliency

FY24 Municipal Vulnerability Preparedness (MVP) Action Grant Project



River Rd at Coffin St 12-23-22

Evaluating Vulnerabilities and Options to Promote Resiliency: River Road and Environs

In October 2022 West Newbury Town Meeting voted unanimously to appropriate \$50,000 for a study of climate change impacts on River Road and its environs. The Town seeks MVP Action Grant funds to address flood risk and road stability concerns at vulnerable locations subject to Merrimack River flooding. The project will evaluate the risks due to more frequent and extreme flooding events caused by climate change and sea level rise, and will enable the Town to identify, develop consensus about, and plan for an array of near-(2030), mid-(2050), and long-term (2070) resiliency options.



Specifically, the project will focus on River Road and the lower portions of Coffin and Bridge Streets where they intersect with River Road. This directly affects the Rocks Village Bridge, which is a critical connector to Haverhill and Merrimac, neighboring municipalities with Environmental Justice (EJ) communities. Among other things, school buses serving West Newbury and Merrimac traverse this bridge, as do public safety vehicles, commuters, and others from and to adjacent areas and beyond. Additionally, the Town seeks to proactively explore climate resiliency solutions to provide access to houses that may be impacted by road erosion and flooding, and to preserve recreational resources for birdwatching, hiking, biking, fishing, and similar activities.

This assessment will allow Town officials and residents to better understand the timeline and locations of future flooding and explore both interim and long-term climate adaptation strategies. It will also inform planning and consideration of alternatives to foster resiliency. The proposed project consists of:

- public activities, meetings and outreach to inform and engage citizens and Town officials;
- an existing conditions survey (including bank erosion, watershed delineations, and other factors) of the areas shown susceptible to Merrimack River flooding;
- a study of culverts and stormwater infrastructure;
- a report of vulnerabilities in 2030, 2050, and 2070; and
- options for shoreline stabilization as well as other solutions (preferably nature-based) for longer



timeframes.

The Town submitted an Expression of Interest (EOI) on January 9, 2023, which can be found [here](#). The grant application is due May 4, 2023. The award announcements will be made over the summer and projects are expected to start in the fall.

See the [slideshow](#) for more photos.

Source URL: <https://www.wnewbury.org/home/town-projects/pages/river-road-climate-change-resiliency>