EXHIBIT A
SCOPE OF SERVICES/PROJECT SCHEDULE

Naugatuck Valley Council of Governments
Regional Multi-Jurisdictional Natural Hazard Mitigation Plan
for:
Ansonia, Beacon Falls, Bethlehem, Bristol, Cheshire, Derby, Middlebury, Naugatuck,
Oxford, Plymouth, Prospect, Seymour, Shelton, Southbury, Thomaston, Waterbury,
Watertown, Wolcott, Woodbury

Overview

The Naugatuck Valley Council of Governments (NVCOG), a political subdivision of the State of Connecticut serving the Naugatuck Valley Planning Region in west-central Connecticut, is developing a regional, multijurisdictional Natural Hazard Mitigation Plan (NHMP) for its nineteen (19) member municipalities. The NHMP will address regional natural hazards and strategies for resilience in the face of natural disasters and climate change. The product will be a consolidated regional, multijurisdictional NHMP to be adopted by each NVCOG municipality and approved by the Federal Emergency Management Agency (FEMA).

Background:

The Naugatuck Valley Council of Governments (NVCOG) was formed in 2015 by the consolidation of the Council of Governments of the Central Naugatuck Valley (COGCNV) and the Valley Council of Governments (VCOG), along with two municipalities from the Central Connecticut Regional Planning Agency (CCRPA). Existing NHMP’s were initiated by these predecessor organizations. The municipalities of Bristol and Plymouth were included in the CCRPA multijurisdictional NHMP. The municipalities of Ansonia, Derby, Seymour and Shelton were included in the VCOG multijurisdictional NHMP. The former COGCNV municipalities all have single jurisdictional NHMPs: Beacon Falls, Bethlehem, Cheshire, Middlebury, Naugatuck, Oxford, Prospect, Southbury, Thomaston, Waterbury, Watertown, Wolcott and Woodbury.

Purpose:

The purpose of this project is to update the various single and multijurisdictional NHMPs and develop a consolidated multijurisdictional plan in compliance with FEMA standards and requirements that will serve as the approved Natural Hazard Mitigation Plan for each municipality of the Naugatuck Valley planning region. The NHMP will identify natural hazards and risks, existing capabilities, and activities that can be undertaken by a community to prevent loss of life and reduce property damages associated with the identified hazards. Public safety and property loss reduction are the driving forces behind this plan. However, careful consideration also must be given to the preservation of history, culture and the natural environment of the region.
**Funding:**


**Oversight:**

The NVCOG will be the lead agency of the NHMP and will administer, coordinate, and oversee the planning process. The NVCOG will foster inter-agency cooperation between local governments, state and federal agencies, residents, and other stakeholders to ensure that a coordinated and efficient hazard mitigation planning process is developed.

The contractor, Milone & MacBroom, Inc. will work with the NVCOG staff and municipal staff from all 19 member towns and cities, the Connecticut Department of Energy and Environmental Protection (DEEP) DEMHS and other stakeholders to develop the NHMP for review and approval by DEMHS and FEMA. Once approved by FEMA, the consultant will guide the adoption of the plan by each of the nineteen (19) NVCOG member municipalities. The plan development process and plan content shall align with the Scope of Services outlined below, and with all terms and conditions associated with the PDM grant award.

**Scope of Services**

**Task 1. Project Initiation and Data Collection**

1.1 Kick-Off Meetings

1.1a Kick-Off Meeting with NVCOG Board – MMI will attend a meeting with the NVCOG Board to present the purpose of the project and describe the scope and planning tasks. The meeting will formulate a project plan and identify municipal resources and stakeholders for subsequent coordination.

1.1b Kick-Off Meeting with Regional Advisory Committee – MMI will attend a meeting with the Regional Advisory Committee (RAC) (NVCOG staff and approximately one municipal representative per community, which may be later designated as the “local coordinators”) to lay out a project plan. Municipal resources and stakeholders will be identified during the meeting.

1.2 Local Advisory Committee Meetings – Within four weeks of the kick-off meetings, MMI will meet with municipal staff in each municipality to describe the purpose and need for hazard mitigation Plan, the planning process, potential outcomes and mitigation grant opportunities, and the types of information to be gathered. Potential members of these local advisory committees include:
- Chief Elected Officials or their designees
- Emergency Management Directors
- Members of Local Emergency Planning Commissions (LEPCs)
- Staff from Public Works or Highway Departments, Water Departments, Water Pollution Control etc.
- Building Officials or Staff from Building Departments
- Municipal Engineers
- Fire Chiefs
- Staff from Municipal Planning and Zoning/Land Use Departments
- Staff from neighboring communities
- Local stakeholders from the academic, environmental, and business communities, if applicable

1.3 Natural Hazard Mitigation Workshops – MMI and NVCOG will hold a series of hazard vulnerability and mitigation workshops based on appropriate geography to identify vulnerable areas, locate critical facilities, and discuss the effects and responses to past and recent natural events. MMI will provide technical information and facilitate the workshops. Two types of workshops are proposed: workshops with the RAC and their invited guests, and public workshops. The public workshops will serve as the primary public meetings to review and identify potential project and receive comments about hazard effects and/or areas that should be included in the planning process.

1.3a Vulnerability and Risk Assessment Workshop for RAC – MMI will prepare for and facilitate a meeting of the RAC and invited guests to discuss the hazard profiles, vulnerability assessment, risk assessment, loss estimates, critical facilities, historic resources, and other components of the planning process aligned with Task 2. The purpose of the workshop will be to obtain input from the RAC. A central location will be selected for the workshop.

1.3b Vulnerability and Risk Assessment Workshop for Public – MMI will prepare for and facilitate a public meeting to discuss the hazard profiles, vulnerability assessment, risk assessment, loss estimates, critical facilities, historic resources, and other components of the planning process aligned with Task 2. The purpose of the workshop will be to obtain input from the public. A central location will be selected for the workshop.

1.3c Mitigation Strategy Workshop for RAC – MMI will prepare for and facilitate a meeting of the RAC and invited guests to discuss mitigation goals, objectives, strategies, and actions aligned with Task 3. Statewide mitigation initiatives will be included. The purpose of the workshop will be to obtain input from the RAC. A central location will be selected for the workshop, but different than the location of Task 1.3a.
1.3d Mitigation Strategy Workshop for Public – MMI will prepare for and facilitate a public meeting to discuss mitigation goals, objectives, strategies, and actions aligned with Task 3. Statewide mitigation initiatives will be included. The purpose of the workshop will be to obtain input from the public. A central location will be selected for the workshop, but different than the location of Task 1.3b.

1.4 Data Collection – MMI will gather available data, mapping, information, and reports from relevant state and federal agencies, utility companies, municipal agencies, available news articles, and non-government organizations. The following is a preliminary list:

- Existing Hazard Mitigation Plans for nearby communities
- Local, Regional, and State plans of conservation and development
- Municipal codes
- Zoning Regulations
- Subdivision Regulations
- Inland Wetlands and Watercourses Regulations
- Other regulations or ordinances that may be related to hazard mitigation
- Building department records
- Local Emergency Operations Plans (LEOPs) and regional EOPs
- DEEP dam safety files and dam failure inundation mapping
- Dam inspection reports and Emergency Action Plans (EAPs)
- Flood Insurance Rate Maps (FIRMs)
- Flood Insurance Studies (FIS)
- Hurricane surge mapping
- Evacuation routes and critical facilities
- American Red Cross sheltering plans
- Repetitive Loss Property lists from the CT Department of Energy and Environmental Protection (DEEP) and/or FEMA
- Public Works complaint logs and files
- Snowplow routing and priorities
- Snow and ice management policies
- Lists of floods, earthquakes, tornados, downbursts, hurricanes, tropical storms, nor’easters, hailstorms, blizzards, and other severe events
- National Climate Data Center (NCDC) storm event data from the National Centers for Environmental Information (NCEI)
- Publicly available information regarding losses in the NVCOG region from the disaster declarations that have occurred since prior plans were adopted
• Copies of mitigation grant applications submitted for consideration under the HMGP, PDM, and FMA programs in the last five years
• The Connecticut Hazard Mitigation Plan
• The State Water Plan
• The Drinking Water Vulnerability Assessment and Resiliency Plan
• The historic resources resiliency gap analysis for towns that participated in New Haven and Fairfield Counties
• Comprehensive Economic Development Strategy (CEDS)

1.5  Public Outreach and Engagement – MMI will engage the public through public meetings, a survey, and story map to provide information to the public and solicit input and comments from the public.

1.5a  Public Meetings – MMI will prepare for and lead up to 19 public informational meetings in the NVCOG region that will be additional to the two public workshops described in Task 1.3. These public meetings will be tailored to the overall planning phase and scope occurring at the time of the meeting, but they can at a minimum present the history and purpose of hazard mitigation planning, the FEMA mitigation funding programs, and the project scope of work; and be used to receive comments about hazard effects and/or areas that should be included in the planning process. NVCOG and the individual communities will be responsible for posting of public notices to their constituents. Public comments will be assembled by MMI, and meeting minutes will be appended to the Plan.

1.5b  Internet-Based Public Survey – MMI will prepare, deploy, and maintain a SurveyMonkey-based survey to gather comments for the hazard mitigation plan update process. Availability of the survey will be publicized simultaneously with the public meetings of Task 1.3 and 1.5, and through various internet-based news services.

1.5c  Story Map - MMI will prepare an ESRI Story Map to augment public engagement tasks listed above and enhance public participation.

1.6  Administration and Reporting – MMI will provide progress reports and updates to NVCOG as needed.

1.6a  Administration – MMI will participate in biweekly calls to discuss project status and any problems, issues, or challenges. The intent of the calls is to maintain the schedule. MMI will also provide progress reports with invoices.

1.6b  Project Updates and Quarterly Reporting – MMI will contribute narratives to NVCOG for quarterly reporting to FEMA and for other purposes that may be required.

1.7  Project Webpage – MMI will provide content to the project web page. This may include maps, graphics, tables, copies of presentations, links to the survey, etc.
Task 2. Vulnerability and Risk Assessment

2.1 Mapping of Land Use and Zoning – MMI and NVCOG will work with the municipalities to review existing zoning and development trends and develop GIS-based land use and zoning maps. Future potential areas of development will be identified and mapped by MMI, including developments under review by local land use commissions and others that have been speculated.

2.2 Historical Summary of Recent Hazard Events – MMI will summarize recent natural events that have occurred in the region and describe the extent to damage caused and the response to the events.

2.3 Flood Hazard Areas – FEMA-designated floodplains and floodways will be mapped by MMI. Areas of potential flooding and vulnerable land/structures will be identified/reviewed by MMI and municipalities. Land use and zoning mapped as part of Task 2.1 will be overlaid onto these layers as well. Drainage basins within the study area will be evaluated via GIS and described in narrative form. Ice jam hazards (which were addressed in the Southbury hazard mitigation plan) will be included.

2.4 Historical Flooding - A history of flooding problems will be compiled by MMI from available information and interviews with municipal staff and others. Known flood-prone areas (referenced relative to streets, neighborhoods, and/or drainage basins) will be identified and described, including areas affected by nuisance flooding and other flood-related issues. Critical and known problem areas will be visually surveyed and photographed by the consultant as part of this effort (and as part of Tasks 1.2 and 1.4 above). Ice jam hazards (which were addressed in the Southbury hazard mitigation plan) will be included.

2.5 Facilities and Historic Resources

2.5a Critical Facilities - Critical facilities will be identified, described, and mapped by MMI (if allowed by local representatives). Critical facilities will include municipal offices; hospitals and medical facilities; designated primary and backup shelters; other places where people may congregate (i.e. schools); facilities that cannot be easily evacuated such as assisted-living homes; power generation, communication, and transmission facilities; and some infrastructure such as roads, wastewater, and water system components. Critical facilities will be counted and assessed values will be tabulated in each hazard risk area as an exposure analysis.

2.5b Historic Resources – Historic resources will be identified, described, and mapped by MMI using point data available for Fairfield County and New Haven County, and polygon data available for Litchfield County and Hartford County. Where point data is available, historic resources will be counted and assessed values will be tabulated in each hazard risk area as an exposure analysis. Where point data is not available, polygons will be used to approximate this information.

2.6 Dams - An inventory of high and significant hazard dams will be conducted based upon data and information on file at the CT DEEP, as well as municipal and water utility files. The
locations of moderate, high, and significant hazard dams will be mapped along with conditions and failure inundation areas if this information is available.

2.7 Vulnerabilities to Flooding - MMI will describe, evaluate, and map existing structures and infrastructure (including roads) vulnerable to flooding, as well as potential areas of development vulnerable to flooding; and organize structures and properties by type (residential, commercial, etc.) and characteristics (areas, locations). Potential flooding problems from upstream communities, and Repetitive Loss Properties and Severe Repetitive Loss Properties will be tabulated. Ice jam hazards (which were addressed in the Southbury hazard mitigation plan) will be included. Future climate impacts will also be evaluated. Buildings, critical facilities, and historic resources will be counted and assessed values will be tabulated in each flood risk area as an exposure analysis. Loss estimates will be prepared for flood-related hazards using the State Hazard Mitigation Plan, Public Assistance (PA) reimbursements, and National Flood Insurance Program (NFIP) statistics for each municipality.

2.8 Existing Capabilities and Mitigation - MMI will describe existing flood loss reduction and mitigation capabilities, inclusive of all six standards categories (prevention, property protection, structural projects, public education and awareness, natural resource protection, and emergency services). Regulations will be included as well. These measures will be evaluated along with the capabilities and resources to implement such measures. Existing flood management capabilities will be identified. These may include education, “Reverse 911”- type warning systems such as Code Red, community notification systems, flood insurance, Community Rating System (CRS) participation, detention/retention, stream channel modifications, bridge and culvert replacement, wet and dry floodproofing, regulation revisions or amendments, structure relocation or elevation, etc. Capabilities related to other hazards will be similarly described.

2.9 Wind Hazards - The wind hazards events (winter storms, summer storms and tornadoes, hurricanes, and tropical storms) and hazard effects will be described. Vulnerabilities will be evaluated based upon historic climatological data, as well as written and verbal documentation of past occurrences and responses to such events. Loss estimates will be prepared for wind-related hazards using the State Hazard Mitigation Plan and Public Assistance (PA) reimbursements. Buildings, critical facilities, and historic resources will be counted and assessed values will be tabulated as an exposure analysis. Similar to flooding, the history, future climate impacts, existing mitigation capabilities, and objectives and actions will be developed.

2.10 Wildfire Hazards - Wildfires and their effects (fire, heat, and smoke) will be described. Vulnerabilities will be evaluated based upon historic records, as well as written and verbal documentation of past occurrences and responses to such events. Potential risks due to capabilities in neighboring communities will be tabulated. Loss estimates will be prepared using the State Hazard Mitigation Plan. Buildings, critical facilities, and historic resources will be counted and assessed values will be tabulated in each risk area as an exposure analysis. History, future climate impacts, existing mitigation measures, and objectives and actions will be developed.
2.11 Earthquake Hazards [this task has been expanded relative to the Scope of Services in the RFP] - Earthquakes and their effects (shaking and liquefaction) will be described. Vulnerabilities will be evaluated based upon historic records, as well as written and verbal documentation of past occurrences and responses to such events. Loss estimates will be prepared using the State Hazard Mitigation Plan. Buildings, critical facilities, and historic resources will be counted and assessed values will be tabulated as an exposure analysis. History, existing mitigation measures, and objectives and actions will be developed.

2.12 Landslide Hazards - Landslides and their effects will be described if applicable to the particular community. Vulnerabilities will be evaluated based upon historic records, as well as written and verbal documentation of past occurrences and responses to such events. Areas of steep and severe slopes will be identified. Loss estimates will be prepared using the State Hazard Mitigation Plan. Buildings, critical facilities, and historic resources will be counted and assessed values will be tabulated as an exposure analysis. History, existing mitigation measures, and objectives and actions will be developed such as regulations to protect steep slopes.

2.13 Sinkhole Hazards – Sinkholes related to mines were included as a chapter in the first and second editions of the Cheshire Hazard Mitigation Plan. MMI anticipates that this will continue. Vulnerabilities will be evaluated based upon historic records, as well as written and verbal documentation of past occurrences and responses to such events. Loss estimates will be prepared using local data. Buildings, critical facilities, and historic resources will be counted and assessed values will be tabulated as an exposure analysis. History, existing mitigation measures, and objectives and actions will be developed.

2.14 Climate Vulnerability Assessment - MMI will perform a climate vulnerability assessment as outlined in Sustainable CT’s Action 4-4 “Assess Climate Vulnerability.” This task shall be conducted in such a way that each municipality in the region is eligible to earn at least 25 credits.

2.15 HAZUS Flood – The latest version HAZUS-MH model will be run for calculation of flood event losses and damage estimates for each community. The analysis area will include those floodplains for the 1% annual chance flood event where elevations are mapped by FEMA.

2.16 HAZUS Wind - The HAZUS-MH model will be run for calculation of hurricane wind event losses and damage estimates for each community. Actual hurricane data and probable wind events will be included.

2.17 HAZUS Earthquakes - The HAZUS-MH model will be run for calculation of earthquake losses and damage estimates. Four potential earthquakes will be modeled based on the four potential scenarios presented in the State Hazard Mitigation Plan.

2.18 Hazard Rankings - The consultant will rank all hazard events and hazard effects using a standardized quantitative system like the methods used for other hazard mitigation plans.

2.19 Project Meeting – MMI will attend quarterly meetings with the RAC to provide updates on the project status. One such meeting is likely to occur as part of the Vulnerability and Risk Assessment (Task 2).
Task 3. Mitigation Strategies and Plan Development

3.1 Progress and Strategies

3.1a Document Progress of Prior Actions – Progress toward previous mitigation actions will be described. Prior actions will be removed, de-listed due to completion, migrated to the capability narratives, or carried forward as needed.

3.1b Formulate Strategies and Actions - Under this phase of work, mitigation strategies and actions will be developed for each hazard and area of vulnerability identified under Task 2. The anticipated effectiveness of such measures will be provided and recommendations for future evaluation, assessment, and action will be offered. Strategies to be evaluated will be grouped into the categories: prevention, protection of property, protection of natural resources, emergency services, structural projects, and public information/education efforts. Statewide mitigation initiatives such as historic resource resiliency, spills at small businesses, Sustainable CT participation, use of low impact development in rural towns, green infrastructure, and living shorelines (in coastal communities) will be screened and included as appropriate. All mitigation actions will be assigned to fiscal year or calendar year timeframes over the lifespan (look-ahead) of the hazard mitigation plan update.

3.2 STAPLEE and Basic BCA - Although formal benefit-cost analysis (BCA) will not be completed for each mitigation action proposed, MMI will utilize its experience with FEMA’s BCA toolkit and process to estimate the likelihood of a project being cost-effective with regards to a formal BCA. Cost effectiveness will be incorporated into the STAPLEE analysis.

3.3 Ranking of Actions - The consultant will then rank recommendations using STAPLEE in combination with the likelihood of qualifying for federal funding. Recommendations that could be easily fit into the three mitigation funding programs (HMGP, PDM, and FMA) will be noted and those that are most easily processed for funding applications will be additionally tagged for ease of Hazard Mitigation Plan use. Staff from each municipality will provide input to this task. Funding sources will be identified for those actions that do not fit into the mitigation funding programs.

3.4 Produce Draft Plan - The methods, analysis, and mitigation strategies and actions from previous tasks will be assembled into multi-jurisdiction plan organized as follows (alternate organizational structures are permissible and can be worked out with NVCOG and the planning team):

- Introduction (Purpose, Authority, Description of Funding Programs, Scope, Documentation of Planning Process, and Identification of Hazards)
- Community Profiles (Geographical, Historical, Cultural, Development Trend
- Climate Trends and Climate Vulnerability Assessment
- Critical Facilities, Historic Resources, and Other Areas of Concern
• Flooding (Setting; Hazard Assessment; Historic Record; Future Climate Impact; and

• Potential Mitigation Strategies and Actions) inclusive of Ice Jams

• Hurricanes and Tropical Storms (Setting; Hazard Assessment; Historic Record; Future

• Climate Impact; and Potential Mitigation Strategies and Actions)

• Summer Storms and Tornados (Setting; Hazard Assessment; Historic Record; Future

• Climate Impact; and Potential Mitigation Strategies and Actions)

• Winter Storms (Setting; Hazard Assessment; Historic Record; Future Climate Impact; and

• Potential Mitigation Strategies and Actions)

• Earthquakes (Setting; Hazard Assessment; Historic Record; and Potential Mitigation Strategies and Actions)

• Dams (Setting; Hazard Assessment; Historic Record; and Potential Mitigation Strategies and Actions)

• Wildfires (Setting; Hazard Assessment; Historic Record; Future Climate Impact; and Potential Mitigation Strategies and Actions)

• Landslides (Setting; Hazard Assessment; Historic Record; and Potential Mitigation Strategies and Actions)

• Sinkhole Hazards (Setting; Hazard Assessment; Historic Record; and Potential Mitigation Strategies and Actions)

• Proposed Mitigation Strategies and Actions

• By Municipality

• For the Region

• Implementation Table and Schedule (Proponent Agency or Department, Priority Mitigation Strategies, Monitoring, Evaluating and Updating the Plan, Plan for Continued Public Involvement)

• Review of NVCOG Programs that Support Mitigation

• Regional Prioritization

• Technical and Financial Resources

• Appendices including Documentation of the planning process (meeting minutes, public meeting announcements, copies of power point presentations, etc.), FEMA plan maintenance worksheets, HAZUS-MH documentation, and Records of Adoption.

3.5 Draft Plan Review - MMI will provide electronic copies (via email or ftp site) to the RAC members and identified representative of each of NVCOG’s member municipalities for
review by staff and other interested parties as described above. The local Hazard Mitigation Planning Team representative will be responsible for coordinating local review, collecting staff comments, and submitting the comments to MMI.

3.6 Draft Plan Meeting – As noted in Task 2.19, MMI will attend quarterly meetings with the NVCOG RAC team to provide updates on the project status. One such meeting is included as part of the plan review. Comments will be described, and remaining conflicts will be addressed.

3.7 Final Draft Plan - Upon receipt of comments, the draft plan will be revised per each municipality’s input and a “final draft plan” will be produced. The final draft plan will be posted to the applicable municipal websites and the NVCOG website to allow for public comments, including any additional comments by the local review team. NVCOG and the local communities will be responsible for public notification of the availability of the plan.

3.8 Public Discussion – Public comments will be sent to the municipal contact person in each of the municipalities in written or electronic format and then forwarded to MMI for processing and documentation.

3.9 Final Draft for DEMHS Review – MMI will incorporate applicable edits and additions to the document based on public comments. At this point, the hazard mitigation plan will be considered a “final draft” for State review.

Task 4. DEMHS and FEMA Review and Approval

4.1 DEMHS Review - One electronic (PDF) copy of the final draft plan will be submitted to DEMHS for review. MMI will fill out the Local Plan Review Tool (which is used for single and multi-jurisdiction hazard mitigation plans) and provide it to DEMHS for its use.

4.2 Incorporate Comments/Edits - Upon receipt of comments from DEMHS (if any), the final draft plan will be revised (if necessary) and sent back to DEMHS to forward to FEMA. The Local Plan Review Tool will be revised if needed and included with the plan.

4.3 FEMA Review – DEMHS will provide a PDF of the plan to FEMA as noted above. Upon receipt of comments from FEMA (if any), the final draft plan will be revised (if necessary) and sent back to DEMHS to forward to FEMA.

4.4 Conditional Approval - MMI will secure the “Approval Pending Adoption” (APA) from FEMA. At this time, the plan will be ready for adoption by each legislative body of the respective municipality.

4.5 Local Adoptions - MMI and NVCOG will attend one public hearing in each municipality to adopt the plan. The local meetings will likely be Board of Selectmen, Town Council, City Council, or equivalent. During these meetings, MMI and NVCOG will briefly present the planning process and explain the need for adopting and maintaining the plan. Signed resolutions will be provided by the municipal clerks to NVCOG who will forward to MMI.
4.6 Final Approval – MMI will insert copies of the signed resolutions into the plan document and provide it to DEMHS for FEMA. MMI will secure final approval letters from FEMA.

4.7 Hard Copies of Plan - Upon municipal approval, five hard copies of the plan will be provided to each respective municipality for in-house filing, as well as an electronic copy of the final plan (included with each plan on CD or thumb drive). Like FEMA, MMI is committed to making hazard mitigation plan filing process as “paperless” as possible. To reduce the volumes produced, certain appendices (such as HAZUS output) may be placed on CDs or thumb drives.
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