

**HAZARD MITIGATION PLAN
ANNEX
FOR
MONTVILLE, CONNECTICUT**

**An Annex of the
Southeastern Connecticut
Regional Hazard Mitigation Plan**

PREPARED FOR:

**Southeastern Connecticut
Council of Governments**

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I. INTRODUCTION

A. Setting

The Town of Montville is 43.9 square miles in area and is located in central New London County. The town is bordered by the Towns of Bozrah and Norwich to the north, the Thames River to the east, the Town of Waterford to the south, and the Town of East Lyme to the west. Elevations vary from sea level at the Thames River to 625 feet at Chapel Hill located in the western section of the town.

Montville is a predominantly suburban community. The population density is approximately 429 persons per square mile. The population is approximately 18,546 according to the 2000 U.S. Census. There are several areas in the town which have high population densities. Three notable areas of population concentrations include the neighborhoods around Route 32 and Route 2A in the eastern part of town and two larger subdivisions located in the western part of town. Outside of these areas the town is low to moderately densely developed. The section of Montville called Uncasville is moderately developed with a senior citizen's center and several churches. Montville also has a medical center called the Backus Health Center.

The town has experienced a growth in tourism and entertainment industries with the development of the two casinos in the region. The Mohegan-Sun Casino in particular was opened on land formerly within the boundary of Montville in 1996. This gaming facility is operated by the Mohegan Tribal Nation on their reservation, which is located in the northeast corner of the town. The tribe received federal recognition from the Bureau of Indian Affairs in 1994.

Development has occurred in the Route 32 corridor since the opening of the Mohegan-Sun Casino. This area is likely to experience more development after the town upgrades water and sewer services.

B. Purpose of Annex

The purpose of this annex is to provide hazard risk assessment, capability assessment, hazard mitigation measures, and a hazard mitigation project ranking for the Town of Montville. The Natural Hazard Mitigation Plan 2000 prepared and submitted by the Town of Montville was utilized as a guide to prepare this Hazard Mitigation Plan Annex for the Town of Montville. Hazards such as earthquakes and windstorms which affect the entire region are addressed in the Southeastern Connecticut Council of Governments Regional Hazard Mitigation Plan.

C. Plan Development Process and Public Involvement

The Regional Hazard Mitigation Plan and this annex were developed through a series of meetings and the completion of written questionnaires, personal interviews, and workshops. To provide oversight of the plan development process and maximize local involvement, all member communities in the region and the two tribal affiliate members were invited to appoint a representative to serve on the Hazard Mitigation Steering Committee. Committee members and chief elected officials received notices of all the committee meetings and were encouraged to attend. Meeting notices and agendas were also sent to area media and to town and city clerks for posting in each community. Steering committee meetings were held in public at the Southeastern Connecticut Council of Governments office in Norwich. Three steering committee meetings were held during the development of the hazard mitigation plan. Verbal reports on progress were given to monthly meetings of the Southeastern Connecticut Council of Governments, which are routinely attended and covered by area press in local newspapers. Articles describing the planning process have appeared in the three issues of the SCCOG Quarterly Newsletter since March, 2003. This newsletter is mailed to 285 officials, organizations, and media within the region.

II. HAZARD RISK ASSESSMENT

A meeting was held with Montville community officials on August 26, 2003 to develop a risk assessment for the town. Based on the results of the meeting and additional risk assessment research, it was determined that a significant natural hazard in Montville is flooding, with the most severe flooding occurring during hurricanes or coastal storms. These storms, with their intense winds and rainfall can create abnormally high tidal surges, wave run-up and peak runoff.

Historically, Montville has suffered damage from several powerful storms. The 1938 hurricane occurred on September 21, 1938 and caused great impact to Montville. Both the Thames River area and the Oxoboxo River experienced significant flooding. Several roads and bridges throughout the town were damaged. Montville also experienced severe flooding during the hurricanes of 1893 and 1954.

One of the more recent hurricanes to cause widespread damage in Montville was Hurricane Gloria in 1985. Hurricane Gloria caused substantial wind damage, which interrupted electrical service for several days. There have also been several nor'easters that have impacted southeastern Connecticut in the past decade.

In 1982, a non-hurricane related storm occurred in southeastern Connecticut. During this storm several areas of Montville were affected. The Latimer Brook area of Chesterfield suffered the most damage and flooding. This storm caused extensive bridge and road damage in the affected areas.

The Thames River is the largest body of water that affects Montville during flooding. However, there are other streams and brooks throughout Montville that are also prone to flooding such as the Oxoboxo Brook. The Oxoboxo Brook, a large brook, rises in the northwestern corner of Montville at Oxoboxo Lake and flows across Montville in a southeasterly direction to Horton Cove on the Thames River. The waters of the brook flow through several ponds, including Paris Pond, Schofield Pond, Oakdale Pond, Wheeler Pond, Rockland Pond, and Red Mill Pond, on the way to the Thames River.

Two smaller brooks, Stony Brook and Trading Cove Brook, rise in the hills to the west of the Thames River and also flow southeasterly to the Thames River. Trading Cove Brook forms a part of the northern boundary of Montville.

Dams are located along Oxoboxo, Stony, and Trading Cove Brooks. These dams retard the flow of flood waters and thereby afford a small measure of protection to residential and commercial structures.

Dams located at Stony Brook and Bogue Brook reservoirs and at Oxoboxo Lake retain large amounts of storage water. Also, dams at several small reservoirs provide further moderate control of upland runoff.

According to the Montville Flood Insurance Study, localized inland flooding occurs in the Oxoboxo, Stony, and Trading Cove Brooks due to culverts with inadequate capacity.

A preliminary study by the U.S. Army Corps of Engineers for the Montville Station area on the Thames River indicated that tidal flooding damage could be reduced with dikes and walls. At this time, no work has commenced on flood protection measures for this area of the community.

Furthermore, the Town of Montville has no formalized program currently in place to identify the location or the number of structures that are susceptible to flooding. Such information would be valuable in directing hazard mitigation efforts to locations with the greatest risk. A potential hazard mitigation project would involve the review of all existing available data regarding flood hazards and the preparation of an inventory and assessment of structures at risk in the flood hazard areas.

Such an inventory program would be the first step in completing a Flood Audit which would provide early flood warning, guidance and technical information regarding flood risks to property owners, as well as prioritize future property protection projects. The completion of a Flood Audit would be an important step in the National Flood Insurance Program Community Rating System by which towns can qualify for a reduction in flood insurance rates.

A. Residential

Based on a review of the Flood Insurance Study and topographic maps, residential structures that are subject to flooding during significant flood events are located along the Thames River and the Oxoboxo Brook.

The Flood Insurance Study adopted in 1995 and local Natural Hazard Mitigation Plan completed in 2000 for the Town of Montville indicate several specific areas that are vulnerable to flooding. Improvements have been made in several areas that were identified in the Natural Hazard Mitigation Plan, however, some areas still pose a threat to residential structures in the flood zones. Areas of concern include the Oxoboxo Brook and Lake, Horton Cove, Trading Cove Brook, and Latimer Brook.

The Oxoboxo Brook and Oxoboxo Lake could cause a great amount of damage and risk to human life to surrounding property if a dam failure was to occur. There is a section of Pink Row, in the area of the Oxoboxo Brook, adjacent to the Thomas J. Faria Corporation in which homes have been historically damaged by flooding. There is also a bridge in the area, which is reportedly in need of replacement and could hamper river flow thus exacerbating flooding conditions.

Horton Cove discharges water from Stony Brook into the Thames River. This tidal area has suffered damage during coastal floods. According to the Montville Hazard Mitigation Plan, “there are ten homes which are at ten feet elevation and certainly could be at risk. Homeowners were made aware of this during the Flood Insurance Study conducted in 1994.”

B. Commercial/Industrial

Montville has several areas of commercial properties that have been identified as being located within the floodplain and are considered to be susceptible to damage.

Commercial development within the community has been primarily concentrated along Routes 32 and 2A corridors. A flood hazard area exists on Route 32 immediately north of the Waterford town line. Town of Montville officials have expressed that the lack of adequate storm drainage structures in this area often results in businesses being impacted by flooding.

Another business that is in a potential flood zone is the Montville Funeral Home. This business is regularly impacted by flood waters and has reportedly experienced significant structural damage due to flooding.

The majority of the town's industry is not located in the floodplain, which reduces the hazard potential. A former defense manufacturing facility located on the south shore of Trading Cove Brook was redeveloped in the 1990s into the current Mohegan Sun Casino, which is owned and operated by the Mohegan Tribal Nation.

One remaining industrial area of concern is Montville Station. Montville Station is located along the Thames River and is a mix of residential and industrial use. The Stone Container Corporation and AES Thames are located in this area and are subjected to tidal flooding.

C. Critical Facilities

A review of the critical public facilities in the Town of Montville indicates that they are located in areas free from flooding and are generally protected from other potential hazards.

D. Transportation Corridors

The Town of Montville has several major transportation routes which include Interstate Route 395, and Connecticut Highways Route 32, Route 85, Route 163, and Route 82. The CN North America-Canadian National Railroad maintains a single line running parallel with the Thames River in a north to south direction. AES Thames Cogeneration Station and Stone Container Company utilize the rail services.

Several roads throughout Montville are subject to potential flooding which may impact vehicle travel during emergency situations. Mapped flood zones associated with Oxoboxo Brook, Latimer Brook, Trading Cove Brook, and Stony Brook have the potential to impact roads. These roads include Bridge Street, Maple Avenue, Pequot Road, and Route 163 along Oxoboxo Brook; Montville Road and the New London Turnpike along Trading Cove Brook; Beckwith Road and Route 85 along Latimer Brook; and Raymond Hill Road along Stony Brook.

Town officials have expressed concern with issues regarding flooding along New London Turnpike.

Town officials have also expressed concern with increased thru-traffic in Montville. Specifically, the town is concerned with the transportation of hazardous materials over their roadways and their ability to respond to a major incident regarding a release of such materials.

III. HAZARD MITIGATION MEASURES

The following sections provide a brief description of the types of hazard mitigation measures that are available to address the natural hazards that exist in Montville.

A. Prevention

Hazard prevention includes identification of risks and the use of land-use regulatory and other available management tools to prevent future damage. The Town of Montville has planning and zoning tools in place that incorporate floodplain management.

Some of the most important mitigation actions are taken each day by the Planning and Zoning Department and the commissions that enforce both the local zoning regulations as well as state and federal standards and regulations. These groups have been active and busy due to an increasing interest that developers have shown toward Montville.

The Planning and Zoning Commission works with the Planning and Zoning Department to assure that all codes, statutes and ordinances are adhered to. The Conservation Commission plays an important role by maintaining an inventory of all open space locations both public and privately owned. Their knowledge of the community is important as they advise other commissions.

Inspections by the Planning and Zoning staff are made daily to assure that standards and regulations are adhered to. The Planning Department also works closely with other town agencies including: Public Works Department, Building Department, Finance Office, Police Department, and Fire Marshal's Office.

The following are examples of how hazard prevention can be accomplished through existing programs:

1. Planning and Zoning

Planning and Zoning Regulations can be tailored to be consistent with hazard mitigation planning. Establishment of Flood Prone Conservancy Districts, Coastal Resource Zones, and River Corridor Preservation Zones are all techniques that can potentially be employed to limit additional development in hazardous locations.

2. Open Space Preservation

Community planning that includes open space acquisition and preservation sections can be established or revised in a manner that is consistent with hazard mitigation planning. Acquisition of floodplain and river corridor properties should be encouraged as a municipal priority.

3. Floodplain Development Regulations

The modification of floodplain management regulations to include more restrictive development standards is consistent with hazard mitigation planning. The National Flood Insurance Program Community Rating System gives credit to communities that exceed the minimum floodplain management requirements of the National Flood Insurance Program. Requirements include elevating structures higher than the 100-year base flood elevation, which is an example of a more stringent standard.

4. Stormwater Management

Stormwater management regulations that limit any potential increase in the state of discharge of stormwater and that preserve floodplain storage are examples of the use of stormwater management in a manner consistent with hazard mitigation planning.

5. Wetlands Protection

Wetlands areas are generally also critical flood storage areas. By limiting wetlands development not only are important natural resource areas protected but additional floodplain development is also limited.

6. Erosion and Sediment Control Regulation

Effective implementation of sediment and erosion controls include utilization of detention basins and use of other Best Management Practices to slow the velocity and limit increase in runoff. Strict adherence to these requirements are effective hazard mitigation tools.

B. Property Protection

Property protection measures can address hazards at a single structure or can include multiple structures.

The following list identifies common property protection measures:

1. Relocation
2. Acquisition
3. Building Elevation
4. Utility Protection
5. Flood Proofing

Additional descriptions of property protection measures are provided in Appendix A in the Regional Hazard Mitigation Plan.

C. Emergency Services

Emergency communication is a critical aspect of the hazard response programs currently in place in Montville. Emergency Services hazard mitigation measures can be combined with other types of measures to form successful projects, or remain as stand-alone projects.

The major utilities that provide service to the town follow similar procedures. The Connecticut Light and Power Company and Bozrah Light and Power Company have emergency operation centers which become operational in the event of any emergency that could impact the utilities.

The interagency communication between the town and independent utilities requires continued coordination to assure the critical communications link between the town operations and the utilities is effectively maintained. A need for improved and continued coordination has been identified during this study.

Aspects of emergency services typically addressed in hazard mitigation include the following:

1. Emergency Communication
2. Flood Warning
3. Flood Response
4. Critical Facilities Protection

Town officials have expressed concern about the logistics of a major evacuation of the town. The residents of Montville have been told to go to Hartford in case of an evacuation and town officials have expressed interest in discussing a potential evacuation plan.

D. Structural Projects

Structural projects include utilization of the flood control strategies that have been and continue to be throughout Connecticut. The potential environmental impacts of structural projects are often a concern.

The Town of Montville has been working on roadway maintenance programs such as catch basin replacement and stormwater drainage improvements for many of its roads. Many drainage systems and culverts that have inadequate capacity have been identified. Some drainage systems were installed during the construction of large subdivisions in the 1960's. The town has replaced several catch basins and culverts during the past few years. This work reduces the flooding risks and also prevents further damage to roadways. Most of this work has been scheduled to coincide with the re-paving of roadways. There are many additional areas that require attention and it is the town's intention to conduct a catch basin survey when funds become available. The town has completed an aerial photography study providing an inventory of all drainage, catch basin, and water resources.

The following areas have been identified by town officials as specific areas in need of further investigation or improvements:

- The bridge and associated culvert on Pink Row Road in the area of the Oxoboxo River.
- The bridge and associated culvert on Meetinghouse Lane at Oxoboxo Brook.

- The bridge and associated culvert on Old Colchester Road near Fair Oaks.
- Access drainage issues on Chesterfield Road in the area of Dr. Charles E. Murphy School

An area of structural concern during the town's Natural Hazard Mitigation Report was dam repair. The Connecticut Department of Environmental Protection had ordered several dams to be repaired according to the town's report. At this time, all dams under the CT DEP order of repair have been repaired and are in acceptable condition.

Additional structural projects that can be included in hazard mitigation planning include the following:

1. Levees/Floodwalls
2. Bridge & Culvert Replacement
3. Channel Modifications
4. Storm Sewer Improvements
5. Structural Project Maintenance and Repair

Any prospective projects which were identified during the course of assembling this plan are included in the hazard mitigation matrix in Appendix A of this annex report. Additional information on some types of structural projects is provided in Appendix A in the Regional Hazard Mitigation Plan.

E. Public Information

Public information is another type of hazard mitigation measure which, like prevention and resource protection, can be most effectively implemented in conjunction with other hazard mitigation projects.

The Hazard Mitigation Committee has identified the need for a continued and expanded program of public information. Such a program could include providing educational information to the homeowners and business owners in the flood hazard areas. A public education and information component should be included in all hazard mitigation projects undertaken by the Town of Montville.

The following list includes some common types of public information measures:

1. Map Information

Development of hazard maps for public distribution or posting in public locations. This type of information is easily understood and assists in raising the public's awareness of the natural hazards that exist in their community.

2. Flood Audits

For additional information regarding flood audits refer to Appendix F of the Regional Hazard Mitigation Plan.

3. Real Estate Disclosure

This is a procedure where buyers and sellers of real estate are compelled to provide notice of known hazards affecting the property to be conveyed.

4. Public Library

Libraries can be an effective location of a hazard information center. Town Halls and other public facilities can also serve as information centers. A wide range of hazard mitigation documentation should be compiled for review.

5. Technical Assistance

Local governments can provide technical assistance to homeowners and contractors regarding hazard resistant construction. An appropriate time for such assistance can be at the time of a building permit application.

6. Environmental Education

Private and public schools and adult education programs can offer environmental education classes that include hazard identification and hazard mitigation components.

IV. HAZARD MITIGATION PROJECT RANKING

Based on the hazard risk assessment analysis, the Hazard Mitigation Committee has developed a matrix of several hazard mitigation projects recommended to reduce Montville's vulnerability to natural hazards. A matrix depicting potential hazard mitigation projects and a prioritized ranking is included in Appendix A.

Projects identified in the matrix have been prioritized based on the following criteria:

- Safety of the population
- Historical damage
- New development in high risk areas
- Value of property at risk
- Consistency with plan goals and objectives

The projects were also considered on how they relate to potential health risks, structural damage, access/egress for evacuation, and protection of structures that house people with special needs and residential areas housing a large portion of the town's population. For additional information on projects listed in the matrix and for a complete list of criteria used in the prioritization process, please refer to the text and attachments of the Regional Hazard Mitigation Plan.

V. IMPLEMENTATION, MONITORING, AND EVALUATION

The Southeastern Connecticut Council of Governments Regional Hazard Mitigation Plan and this associated community annex report were prepared with the understanding that potential funding sources may not be available within the time frame necessary to implement the recommended actions on a specific schedule. It is therefore necessary to incorporate into the plan a system of monitoring its progress and making necessary adjustments. In addition, the goals and objectives may need to be modified over time in order to meet the demands of a changing community. Accomplished activities will be eliminated, and new ones added.

The staff of the Southeastern Connecticut Council of Governments (SCCOG) serves as coordinator of the Hazard Mitigation Committee that provided oversight of the plan preparations. In accordance with § 201.6 (c)(4)(i) of the Interim Final Rule, it is recommended that the Committee meet on or before the fifth anniversary of the adoption of the plan to review the implementation progress as well as the goals, objectives, and actions outlined in the plan. With input from the Committee, SCCOG staff should prepare a report on the status of plan implementation. The report should include the following: a review of the goals and objectives of the original plan; a review of any disasters or hazards that occurred during the period; a review of each element or objective of the original plan, including what was accomplished the previous year; and recommendations for new projects or revised objectives.

FEMA also recommends that each of the local communities name a person as a local coordinator for the implementation and monitoring of the progress of the plan. This person would act as a contact for the Southeastern Connecticut Council of Governments and the State of Connecticut National Flood Insurance Program Coordinators during the grant application and cost-benefit analysis process.

APPENDIX A

HAZARD MITIGATION PROJECT LOCATION / RANKING MATRIX

APPENDIX B

HAZARD ASSESSMENT MAP

The Town of Montville Hazard Mitigation Projects

Hazard	Vulnerable Location	Mitigation Project	Priority
Flooding	Pink Row	Bridge Replacement	High
Flooding	Meeting House Lane	Channel Improvements/ Bridge Culvert Replacement	High
Flooding	Old Colchester Road (Near Fair Oaks)	Culvert Replacement	High
Flooding	Murphy School	Drainage Improvements	High
Flooding	Route 32 South	Drainage Improvements	Medium
Flooding	Town of Montville	Flood Audit / Inventory Program	Medium

The Town of Montville Hazard Mitigation Projects

Flooding	Horton Cove	Property Protection and Public Information Projects	Medium
Flooding	Town of Montville	Catch Basin Survey	Low-Medium