

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

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

PREPARED FOR:

**Southeastern Connecticut
Council of Governments**

DATE: June 2005



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I. INTRODUCTION

A. Setting

The Town of Salem is approximately 30 square miles in area and is located in the western portion of New London County, 25 miles southeast of the City of Hartford. It is bordered by the Town of Montville to the east, the Town of Bozrah to the northeast, the Town of Colchester to the north, and the Town of East Haddam to the south.

Incorporated in 1819, the Town of Salem is a rural community with a 2000 U.S. Census population of 3,858. The Town Hall, Salem Elementary School, and other municipal buildings are located on Route 85 approximately one mile from the intersection of Route 82. Several commercial businesses are located at Salem Four Corners near the intersection of Routes 85 and 82. Salem is considered a prime location for commercial and residential development with access to Hartford, Norwich, New London, and Willimantic. Major routes in Salem include Route 11, Route 82, Route 85, and Route 354.

Nehantic State Park is located near the southern corporate boundary and provides hiking trails for the community. Several bodies of water that are located in Salem include East Branch Eight Mile River, Harris River, Gardner Lake, Fairy Lake, Barnes Reservoir, and Mitchell Pond.

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 Salem. 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 Development

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 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

The most significant hazard in the Town of Salem is flooding.

Buildings located in flood hazard areas are primarily residential but also include some commercial and industrial structures. Most of the structures that are threatened by flooding are located within the 100-year floodplain.

There is no formalized program currently in place to identify the location or the number of structures that are susceptible to flooding in Salem. 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 Town of Salem's Flood Insurance Rate Maps and topographic maps, the Harris Brook and the East Branch Eight Mile River are the two main watercourses that flow through Salem. At this time there appears to be no significant concentrations of development within flood hazard areas.

B. Commercial/Industrial

The Town of Salem's commercial and industrial developments are primarily located on Route 85 (Hartford Road) and Route 82 (East Haddam Road). These areas of commercial and industrial development do not appear to be in flood hazard areas.

Town officials have expressed concern with the possible flooding and release of chemicals into the water at Salem Country Gardens on Route 85. Town officials are concerned with the safety of the surrounding community and would like to develop a risk analysis and emergency plan for this area as well as a containment for a possible release.

C. Critical Facilities

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

D. Transportation Corridors

The Town of Salem has several major transportation routes including Route 11, Route 82, Route 85, and Route 354. It is critical that these roads and others remain accessible to emergency vehicles and residents during emergencies.

Potential flooding may impact several roads throughout Salem, thus impacting emergency response. These roads include Morgan Road, Walden Road, Route 82 (East Haddam Road), Rattlesnake Ledge Road, and Darling Road which are impacted by the East Branch Eight Mile River. Route 85 (Hartford Road), Salter Road, Route 82 (East Haddam Road), Music Vale Road, Round Hill Road, and several access roads may be impacted by Harris Brook. Old New London Road may potentially be impacted by Shinglemill Brook.

Town officials have also expressed concern with increased thru-traffic in Salem. 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 and programs that are available to address the natural hazards that exist in Salem.

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 Salem has planning and zoning tools in place that incorporate floodplain management. The town's planning and zoning regulations, inland wetlands and watercourses regulations, and the building department's enforcement of the Connecticut Basic Building Code are all important existing regulatory mechanisms that address hazard prevention and incorporate floodplain management.

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 modifications of floodplain management regulations to include more restrictive development standards are 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 Salem. 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

Salem has two fire departments, the Gardner Lake Fire Department and Salem Volunteer Fire Department. Coordination and communication between the fire departments and other emergency services is important for effective emergency service.

D. Structural Projects

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

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 Salem.

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 Salem'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.

The Town of Salem Hazard Mitigation Projects

| Hazard | Vulnerable Location | Mitigation Project | Priority |
|--|----------------------------|--|-----------------|
| All Hazards | Town Wide | Evaluate the Hazard Resistant Nature of All Critical Facilities | High |
| All Hazards | Town Wide | Comprehensive Evaluation of Emergency Communication Capabilities Throughout Town | High |
| Flooding | Town Wide | Develop a Flood Audit Program | High |
| Hazardous Materials Spills on Roadways | State Roads | Improvements to Traffic Infrastructure and Emergency Response Training and Equipment | Medium |

The Town of Salem Hazard Mitigation Projects

| | | | |
|-------------------------------|---|---|-----------------|
| Flooding and Chemical Release | Salem County Gardens on Route 85 | Evaluate Potential Chemical Release as well as Potential Containment Procedures | Medium |
| Hazard | Vulnerable Location | Mitigation Project | Priority |
| Flooding | Old New London Road and Darling Road Culverts - Darling Road Bridge | Bridge Replacement or Structural Repair of Bridge | Medium |
| All Hazards | Town Wide | Review of Town Transportation Facilities to Identify Critical Risks | Medium |

The Town of Salem Hazard Mitigation Projects

| | | | |
|---------------|----------------------------|---|-----------------|
| All Hazards | Town Wide | Implement a Reverse 9-1-1 System to Automatically Call Telephones Throughout Town, Relaying Important Information During an Emergency | Low |
| All Hazards | Town Wide | Distribute or Post Public Information Regarding Hazards in the Town | Low |
| All Hazards | Town Wide | Evaluate Emergency Shelters, Update Supplies and Check Communication Equipment | Low |
| All Hazards | Town Wide | Maintain Emergency Personnel Training as well as Maintaining and Updating Emergency Equipment and Response Protocols | Low |
| Hazard | Vulnerable Location | Mitigation Project | Priority |
| Wind Hazards | Town Wide | Evaluate and Consider Burying Power Lines Underground and Away From Possible Tree Damage | Low |

The Town of Salem Hazard Mitigation Projects

| | | | |
|--------------------|-----------|--|-----|
| Earthquake Hazards | Town Wide | Complete an Earthquake Survey of all Critical Facilities and Infrastructures | Low |
| Flooding | Town Wide | 1) Complete Catch Basin Surveys to Identify Catch Basins in need of Maintenance and/or Replacement 2) Complete Culvert Survey to Determine Priority for Maintenance and/or Replacement Plan | Low |
| Fire Hazards | Town Wide | Complete a Survey of Fire Hydrants to Assess Vulnerabilities and Capabilities for Fire Protection Dry Hydrants should be Considered as a means for Emergency Equipment | Low |