HAZARD MITIGATION PLAN
ANNEX
FOR
PRESTON, CONNECTICUT

An Annex of the
Southeastern Connecticut
Regional Hazard Mitigation Plan

PREPARED FOR:

Southeastern Connecticut
Council of Governments

DATE: June 2005

COMMUNITY CONTACTS

Robert Congdon	First Selectman
Henry D. Jorsz	Director of Office of Civil Preparedness
Robert Boyd	Public Works Department

SOUTHEASTERN CONNECTICUT COUNCIL OF GOVERNMENTS STAFF

James S. Butler, AICP	Executive Director
Linda Parquette	Senior Planner
Colleen Bezanson	GIS Specialist
Thomas Seidel	Senior Planner

CONSULTANTS

DELTA Environmental Services, Inc., Branford, CT.
Wilbur Smith Associates, New Haven, CT.

TABLE OF CONTENTS

APPENDICES

I. INTRODUCTION

A. Setting

The Town of Preston is 31.3 square miles in area and is located in eastern New London County. The Town of Preston is bordered by the City of Norwich to the west, the Town of Lisbon to the north, the Town of Griswold to the northeast, the Town of North Stonington to the southeast, the Town of Ledyard to the south, and the Town of Montville to the southwest.

The Town of Preston is a suburban/rural community with a 2000 Census population of 4,688 people. The town center of Preston is near the intersection of Routes 165 and 164 close to the North Stonington town line. Several buildings including Preston's historical society and fire station are located in this area. The Town of Preston is primarily undeveloped woodland and open space which is used as agricultural land. A small area of the Pachaug State Forest and Rose Hill Wildlife Management Area are located in the town. The Preston Community Park, located near the Ledyard town line, is open to residents for recreational use of ballfields, walking, and a pavilion.

Preston has several rivers that flow through the town. The Quinebaug River flows along the northern corporate boundary, while the Thames River and Poquetanuck Cove are located along the western and southern corporate boundaries. Amos Lake, the largest lake in the town, is situated near the town center. There are several other ponds scattered throughout the town including Ayer Pond, Bates Pond, Cooks Pond, Avery Pond, Gates Pond, and Hallville Pond. Elevations in the community range from 10 feet along the banks of Poquetanuck Cove to approximately 490 feet in the eastern portion of the community east of Northwest Corner Road.

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 Preston. 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 conducted with local representatives of the Town of Preston on September 16, 2003 to develop a risk assessment for the town. Based on the results of this meeting and additional risk assessment research it was determined that a significant hazard in Preston is flooding.

There are several rivers that contribute to flooding in Preston such as the Shetucket River and the Quinebaug River. The Shetucket River is formed by the confluence of the Willimantic River and the Natchaug River south of Willimantic, Connecticut. The river flows south to Norwich, Connecticut, where its confluence with the Yantic River forms the Thames River. The Shetucket River has a drainage area of approximately 1,269 square miles and is approximately 18 miles long. The main tributaries of the Shetucket River are the Quinebaug River, the Natchaug River and the Willimantic River.

The Quinebaug River flows southwest from Massachusetts into Connecticut to its confluence with the Shetucket River. It forms the northern corporate boundary of Preston. The Quinebaug River has an approximate drainage area of 744 square miles and length of 62 miles.

Joe Clark Brook originates to the south of Preston in the Town of Ledyard and flows northeast to its confluence with Poquetanuck Cove in the southern part of Preston. The drainage area of Joe Clark Brook is approximately 3 square miles.

The Thames River flows to the south and forms the western corporate boundary of Preston. Although the Thames River is only 15 miles long, the basin extends approximately 75 miles north, with the Shetucket and Quinebaug Rivers being the main contributing water sources. The drainage area of the Thames River is approximately 1,478 square miles.

The history of flooding in Preston indicates that flooding may occur during any season of the year. The most severe floods have occurred during the summer and fall as a result of hurricanes.

Several major floods have occurred in Preston. Two severe floods occurred in March 1936 as a result of extra-tropical storms. The flood of record for the Shetucket River occurred in September 1938 as the result of a hurricane. Severe flooding occurred along the Shetucket River as the result of Hurricane Diane which occurred on August 19, 1955. Damage along the Shetucket River from the 1955 flood was reduced by the flood control dam at Mansfield Hollow Lake which was constructed in the Towns of Mansfield and North Windham in March 1952.

The two most significant floods along the Thames River were caused by hurricanes which occurred on September 21, 1938, and August 31, 1954. The 1938 hurricane produced the greatest natural disaster in the history of Connecticut. This was caused by the combined effects of flooding, gale winds, and storm surge. The combined high tide and storm surge resulted in a maximum tidal elevation of 9.7 feet at New London, Connecticut.

Flooding along the Quinebaug River in Preston has been reduced by U.S. Army Corps of Engineers (COE) dams which were built to form the following lakes: Hodges Village Lake, located at Oxford, Massachusetts; Buffumville Lake, at Oxford and Charlton, Massachusetts; Westville Lake, at Southbridge, Massachusetts; East Brimfield Lake, at Fiskdale, Massachusetts; and West Thompson Lake, at North Grosvenor Dale, Connecticut. West Thompson Lake finished in October 1965, was the last of these projects to be completed.

Town officials have expressed concern regarding several dams including a private dam at Hallville Pond adjacent to the abandoned Piela Electric Industrial Facility in the south-central portion of town. This private structure would need to be evaluated in order to determine the degree of risk it would pose in the case of failure during a flood.

The Town of Preston 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 review of the Town of Preston's Flood Insurance Rate Maps and topographic maps, residential structures that are subject to flooding during significant flood events are located near Mattewson Mill Road and Poquetanuck Cove area.

Town officials have specifically expressed concern regarding several residences in the area of Mattewson Mill Road. This low lying section of road routinely experiences flooding during heavy rains. Residents along the Shewville Brook have constructed "berms" to protect their property from flooding. The town's ability to respond to emergencies could be significantly hampered by flooding in this area.

Route 2A (Poquetanuck Road) has several sections in the flood zone near Poquetanuck Cove. These sections fall between Harris Fuller Road and Middle Road with several structures in the flood zone.

There are several residential areas in the flood zone that have the potential for flooding. These areas include Stanton Lane where Choate Brook crosses the road and Lynn Drive near Avery Pond where structures are located in the flood zone. Emergency response could by hampered during a major flood event due to the lack of alternative access/egress routes.

B. Commercial/Industrial

The majority of the town's commercial and industrial properties are located along Route 165 and Route 164, near the North Stonington town line. Other commercial and industrial developments are scattered throughout Preston. Based on review of the Preston Flood Insurance Rate Maps none of these major commercial and industrial developments appear to be located in flood hazard areas.

C. Critical Facilities

The Town of Preston's critical public facilities including the Preston City and Poquetanuck Fire Departments and ambulance company, Preston Town Hall, and the Preston Plains School, which is a designated emergency shelter, are not located in flood hazard areas. These areas are free from flooding and are generally protected from other potential hazards.

D. Transportation Corridors

There is a potential for flooding along several major routes in Preston as well as secondary roads and local roads. Flooding may cause these roads to become impassable during emergencies.

Several major routes in Preston that have sections in the flood zone include Route 164 at the meeting of Broad Brook and Route 165 near Lewis Pond. Route 2 has several sections that are in the flood zone including its intersection with Hewitt Brook, near the intersection of Route 164, and at the intersection of Indiantown Brook. In the Happyland section of Preston, Route 2A travels across the Thames River and the Route 2A bridge is in the flood zone. This could potentially affect access/egress via Route 2A during severe flooding.

Preston has many secondary roads connecting to the major routes that run through the town. Several secondary roads in Preston have sections that are in the flood zone and therefore are susceptible to flooding. These roads include River Road and Old Jewett City Road at the intersection of Choate Brook. Old Jewett City Road is also in the flood zone near the intersection of McClimon Road and where Ayers Brook crosses the road. Other roads that are in the flood zone include Prodell Road at the intersection of Choate Brook, Parks Road at the crossing of Broad Brook, Lewis Road near Lewis Pond, and Brown School Road.

Another area of concern is near Poquetanuck Cove where Schoolhouse Road and Hallville Road have the potential to become impassable due to flooding at Poquetanuck Brook. The flood zone of Poquetanuck Brook then intersects Poquetanuck Road near Route 2, indicating an additional hazard area.

Other areas with the potential to flood and become impassable include: Lincoln Park Road, Mattewson Mill Road at the intersection of Shewville Brook, two areas near Cooks Pond on Cooktown Road, Lake of Isles Road in the vicinity of Main Brook and Lake of Isles Brook, and Wattson Road at the intersection of Main Brook.

Town officials have also expressed concern with increased thru-traffic in Preston. 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 Preston.

A. Prevention

Hazard prevention includes the identification of risks, and the use of land-use regulatory and other available management tools to prevent future damage. The Town of Preston 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 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 the 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 Preston. 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 has 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

Preston's dispatch center is located in Ledyard but there is a town radio used for fire frequency. There is a mutual aid agreement with several towns surrounding Preston. This agreement allows them to use low band radio frequencies for town to town communication. This has created good communication with the surrounding towns which include Ledyard, Voluntown, and Griswold.

The official emergency shelter in Preston is Preston Plains School. The building is up to date with fire code safety and it meets the Red Cross shelter requirements, including emergency power. Unofficially, churches and firehouses may also be used.

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. Several structural areas of concern to Preston town officials include a farmer's levee near Bunny Drive, the Hallville Pond Dam, and Gates Pond Aquifer. Structural projects that can be included in hazard mitigation planning include the following:

1. Levees/Floodwalls
2. Bridge and 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 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 home owners 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 Preston.

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 potential hazard mitigation projects recommended to reduce Preston'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 Preston 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
Flooding	Areas Downstream of Hallville Pond Dam	Structural Assessment of Dam and Plan for Maintenance and Repair	High - Medium
Flooding	Matthewson Mill Road Near Shewville Brook	Property Protection Study and Drainage Improvements and Culvert Replacement	High - Medium

The Town of Preston Hazard Mitigation Projects			
Flooding	Poquetannuck Road	Drainage Improvements and Study to Determine Feasibility of Roadway Elevations	Medium
Hazard	**Vulnerable Location**	**Mitigation Project**	**Priority**
Flooding	Stanton Lane near Choate Brook and Lynn Drive near Avery Pond	Drainage Improvements and Study to Determine Feasibility of Roadway Elevations	Medium
Flooding	Route 2 and Route 2A	Drainage Improvements and Roadway Study	Medium
All Hazards	Town Wide	Review of TownTransportation Facilities to Identify Critical Risks	Medium
Hazardous Materials Spills on Roadways	State Roads	Identify Appropriate Improvements to Traffic Infrastructure and Emergency Response Training and Equipment	Medium

The Town of Preston 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
Hazard	**Vulnerable Location**	**Mitigation Project**	**Priority**
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

The Town of Preston Hazard Mitigation Projects			
Wind Hazards	Town Wide	Evaluate and Consider Burying Power Lines Underground and Away From Possible Tree Damage	Low
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
Hazard	**Vulnerable Location**	**Mitigation Project**	**Priority**

The Town of Preston Hazard Mitigation Projects			
Fire Hazards	Town Wide	Complete a Survey of Fire Hydrants in each Community to Assess Vulnerabilities and Capabilities for Fire Protection Dry Hydrants should be Considered as a means for Emergency Equipment	Low