

TOWN OF FARMINGTON



HAZARD MITIGATION PLAN

Adopted: November 9, 2004

Certified by: Leanne E. Pinkham
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Town Clerk
Title

TOWN OF FARMINGTON HAZARD MITIGATION PLAN

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TOWN OF FARMINGTON HAZARD MITIGATION PLAN

I. INTRODUCTION

The Federal Disaster Mitigation Act of 2000 mandates that all localities that seek to continue to receive Federal Emergency Management Agency (FEMA) funds after disaster events must draft a local Hazard Mitigation Plan. Pursuant to §201.6 of the Interim Final Rule prepared by FEMA, the Town of Farmington, Maine, has developed a local plan.

A. Purpose

The primary purpose of the Hazard Mitigation Plan is to identify hazards/risks, existing capabilities, and activities that can be undertaken by the community to prevent loss of life and reduce property damages associated with natural hazards.

It is important to recognize the difference between Hazard Mitigation and Emergency Operations Planning. For the purposes of this plan, hazard mitigation is broadly defined as follows:

Hazard Mitigation: Any action taken to reduce or eliminate long term risk to human life and property resulting from hazards, thereby also reducing or eliminating the need to respond.

The goal of all emergency management activities is to prevent loss of life and property. The four phases of emergency management include: Mitigation, Preparedness, Response, and Recovery. What sets mitigation apart is the distinction that its purpose is to eliminate or reduce the need to respond.

The plan identifies manpower, financial and information resources in order to facilitate funding and implementation of all hazard mitigation. Current and future grant programs for mitigation activities may require an applicant to have a mitigation plan. The plan will also provide guidance for future capital budgeting, which will be advantageous for Farmington in terms of implementing hazard mitigation measures.

Although the primary hazard in Farmington is severe winter storms, other potential natural hazards are covered. Man-made hazards are addressed in the Franklin County Hazard Mitigation Plan and HazMat Plan. Public safety and property loss reduction are the driving force behind this Plan. However, particular attention has been given to preserving the history, culture and natural environment of Farmington. Throughout the plan, various hazard-warning activities are discussed. Warning is not considered pure mitigation because of its lack of long-term results. Although the use of warning systems may fall under the response phase of emergency management, for the purposes of this plan the replacement and implementation of warning systems is considered mitigation.

B. Authority

The authority for the provisions of this plan are contained in the Disaster Mitigation Act of 2000 (DMA 2000), enacted October 30, 2000, and 44 CFR Parts 201 and 206 Interim Final Rule, published February 26, 2002.

This law states that communities are required to adopt a community-wide hazard mitigation plan in order to be eligible for Hazard Mitigation Grant Program funds subsequent to a disaster in the State.

This mitigation planning effort encouraged the Franklin County Emergency Management Agency, the Town of Farmington municipal officials, and the local residents to participate in the mitigation planning and implementation process. This participation enabled the development of mitigation measures that are written with local interests in mind incorporating land use and planning regulations. The plan is a cooperative effort between the Franklin County EMA and the Town of Farmington, in conjunction with area agencies. Richard Davis, Town Manager, and Sabra Stirling, Planning Assistant, took the responsibility of writing, assembling, and presenting the plan.

The Town of Farmington Hazard Mitigation Plan includes eight sections:

- Introduction
- Profile of Farmington
- Adoption by Local Governing body
- Planning Participation
- Planning Process
- Risk Assessment
- Mitigation Strategy
- Plan Maintenance Procedures

II. PROFILE OF FARMINGTON

Located in west central Maine, Farmington consists of 7,410 residents living in 2,813 households (per US Census 2000 Table DP-1 & 4 – see Appendix), encompassing 35,000 acres, or approximately fifty-five (55) square miles. As the county seat of Franklin County, Farmington is home to the Franklin County Courthouse, County District Court, Sheriff's Office, and jail facility. Farmington also hosts the University of Maine at Farmington and Franklin Memorial Hospital. In addition, there are approximately four (4) miles of abandoned rail bed that has been converted to a recreational trail.

The three largest employers in Farmington are Franklin Memorial Hospital, Maine School Administrative District #9, and the University of Maine at Farmington.

The Sandy River flows south, roughly through the middle of the town. Mountain foothills surround the River, cut by a multitude of streams. Temple and Wilson Streams are the principal tributaries to the Sandy River, as well as Cascade, Barker, Beaver, Beale's, and Hardy Brooks. Farmington has about 3,000 feet of shore frontage on Clearwater Lake, a large lake in the northeastern corner of the Town. Ballard Pond is a small, privately owned pond in the northwest corner of town. Other ponds in Farmington include Mosher Hill Pond, Walton's Mill Pond and Rollo Pond. The topography, geology and soils data can be found in the *Town of Farmington Comprehensive Plan*, Section 8. Natural Resources, adopted 1999.

As noted earlier, Farmington consists of approximately 35,000 acres. The land is steeply rolling, with many slopes 8 – 15% or greater except along the Sandy River, its tributaries and other streams, where the floodplains have nearly level slopes. The

elevations range from 345 feet where the Sandy River leaves the town limits in the southeast corner, to 700 feet on Perham Hill, 844 feet on Titcomb Hill, 1,000 feet on Porter Hill, and 1,100 feet on Mosher Hill.

The topography of Farmington is largely the result of the last glacier, which reached its maximum extent on the continental shelf about 18,000 years ago. The glacier deposited a layer of till (unsorted, non-stratified glacial drift consisting of clay, silt, sand, and boulders transported and deposited by glacial ice). Along the Sandy River are sandy stream terrace deposits formed in areas which were once flooded and outwash deposits of stratified sand and gravel.

The Natural Resource Conservation Service (NRCS) has available a set of aerial photos with second and third order mapping of soils on them, accompanied by the soil interpretation records for those soils.

The Farmington Village Corporation, a quasi-municipal body located in Farmington, provides water to 1,500+ customers in Farmington and Temple. The main office is located at 137 High Street, Farmington. The water source consists of two (2) ground water wells located on either side of the Sandy River. The water is stored in two (2) reservoirs: One located on Powder House Hill off Anson Street in Farmington, and the other located off Varnum Pond Road in Temple. Currently, the Water Department treats its water with chlorine and sodium silicate. Water quality is regulated by the Federal Safe Drinking Water Act and by Maine Department of Human Services.

Farmington owns and operates a Grade III Wastewater Treatment Facility that was constructed in 1972 and upgraded in 1993. The treatment facility can handle .9 Million Gallons Daily (MGD), but currently has a flow of .450 MGD. Presently, the effluent from the facility side-discharges into the Sandy River.

Three (3) certified operators maintain the facility, which has over 1,000 connections to the system. It has thirty (30) miles of collection line and twelve (12) pump stations. The facility generates 1,100 cubic yards of biosolids annually.

The facility is an activated sludge plant utilizing the extended aeration mode. It uses sand filters when needed. The Town has four (4) active land spreading sites for the sludge. Two (2) of the sites are located in Farmington: (1) Farmington Bulky Waste/Recycling Facility, 2 Dump Road, and (2) Edith Smiley's farm, 156 Smiley Road. The other two (2) sites are located in Mercer and Phillips.

Estimated cost for replacement of this critical facility, due to the "significant" likelihood of reoccurring floods in this area, is as follows: Building - \$9,654,490, Contents – \$43,285. The cost for replacement of (2) two critical facility pump stations due to the "significant" likelihood of reoccurring periods of extreme cold resulting in compressor failures is as follows: #4 and #2 - \$31,827. The Town of Farmington Insurer's Statement of Values is the source of the aforementioned replacement costs.

Farmington adopted a Biosolids and Other Residuals Management Ordinance that controls residuals that are generated outside of Farmington.

Municipal facilities located in Farmington include approximately eighty-nine (89) miles of Town roadway and twelve (12) miles of sidewalks, the Municipal Building, the

Community Center, the Farmington Falls Fire Station, the Public Works Garage, the Bulky Waste Recycling Facility, Philbrick Park, Meeting House Park, Walton's Mill Pond Park, and Hippach Field.

For the purposes of this Plan, most of the municipal buildings are not in areas vulnerable to significant events. Where a fire station may be vulnerable, another station is available. However, the Wastewater Treatment Facility, located near river discharge points, is most vulnerable to flood damage.

Farmington is a participant in the National Flood Insurance Program (NFIP) - Community Rating System (CRS). See VI. Risk Assessments, B. Profiling Hazard Events, 2. FLOODING, A. Previous Occurrences for Farmington Flood Insurance Data Through December 2002 provided by Androscoggin Valley Council of Governments AVCOG.

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III. ADOPTION BY THE LOCAL GOVERNING BODY

This Plan is hereby adopted by the Farmington Board of Selectmen.

This Plan shall be submitted to the Franklin County Emergency Management Director and the Federal Emergency Management Agency upon its adoption.

The Selectmen hereby charge the Farmington Emergency Management Director to issue a report within thirty (30) days of his annual review of this Plan. Such report shall set forth the status of review of all programs and projects initiated pursuant to this Plan and shall characterize the status of identified projects and programs that have not yet been undertaken.

**Town of Farmington
Board of Selectman**

Mary W. Wright, Chairman

Date

Dennis C. Pike, Selectman

Date

Charles C. Murray, Selectman

Date

Stephan M. Bunker, Selectman

Date

Mark A. Cayer, Selectman

Date

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IV. PLANNING PARTICIPATION

The Town of Farmington Hazard Mitigation Plan has been developed by a Hazard Mitigation Planning Team with assistance from representatives for two purposes: to provide inventory data and to provide feedback on the plan as it was completed. The list below summarizes the names and capacities of these representatives who assisted with one or both of these tasks.

The Hazard Mitigation Planning Team consisted of the following representatives:

Richard Davis	Town Manager	207-778-6538
Terry Bell	Fire Rescue Chief	207-778-3235
Sabra Stirling	Planning Assistant	207-778-5874
Mitch Boulette	Public Works Director	207-778-2191
Richard Caton, III	Police Chief	207-778-6311
Steve Moore	Wastewater Superintendent	207-778-4712
Tom Holt	Village Corp. Superintendent	207-778-4777
Steve Kaiser	Code Enforcement Officer	207-778-5874
Mark Caldwell	Assessor	207-778-6530

The Following Organizations and Agencies participated in the development and review of the Plan:

Carol Fuller	Androscoggin Valley Council of Governments	207-783-9186
Tim Hardy	Franklin County Emergency Management	207-778-5892
Olive Toothaker	Franklin County Emergency Management	207-778-5892
Joann Mooney	Maine Emergency Management Agency	207-624-4466
Dennis Pike	Franklin County Sheriff's Department	207-778-4504

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V. PLANNING PROCESS

In compliance with §201.4(b) and 201.4 (c)(1) Farmington held all its meetings as open forums. The Town issued a press release and posted public notices to advertise and explain the mitigation planning process to the public. The following describes our documentation of the planning process, including how the plan was prepared, who was involved in the process, and how the public was involved.

After a “Kick Off” Meeting conducted by the Franklin County Emergency Planning Committee in 2003 and two subsequent instructional/informational meetings conducted by Androscoggin Valley Council of Governments (AVCOG), the Town of Farmington formed a Hazard Mitigation Planning Team. The Team included representatives from the Farmington Fire Rescue, Police Department, Public Works Department, Wastewater Facility, Code Enforcement Office, and Assessing Office. Representatives from the Franklin County Emergency Management Agency (EMA) and Farmington Village Corporation also attended.

In the fall of 2003 the Team began to conduct research for the Plan and worked with Franklin County Emergency Management Agency to identify the hazards to be included in the Plan. The next six months was spent collecting and analyzing data on the sixteen hazards. In addition to local knowledge provided by Planning Team members and their associates, inventory and data was collected from a number of different agencies whether by personal contact or via the Internet. The agencies involved in the assembly of the data for this plan included:

- Androscoggin Council of Governments
- Franklin County Emergency Management Agency
- Maine Emergency Management Agency
- Maine State Forest Service
- Maine State Planning Office
- Maine Department of Transportation
- Maine Office of Geographic Information Systems

The first draft was adopted after seven meetings over the course of six months. An effort was made to solicit public input during the initial planning process. The Town made every effort to advertise the informational meeting by issuing press releases in the Lewiston Sun Journal, Franklin Journal, and the Waterville Sentinel, by posting public notices in three areas of the Municipal Building, and by airing the information on Mt. Blue local access television Channel 11. The Planning Team also met or spoke with representatives of the community to collect their comments and recommendations regarding the identification of hazards, assessment or vulnerabilities and risks, and the determination of mitigation goals and measures. The press release (See APPENDIX) was also posted on the Town’s website (www.farmington-maine.org). (See APPENDIX for copies of sign-in sheets and public notices.)

After a Review and a Public Hearing conducted by the Board of Selectmen, the first Draft of the Town of Farmington Hazard Mitigation Plan was adopted November 18,

2003. The Plan was then forwarded to the Federal Emergency Management Agency (FEMA) and the Maine Emergency Management Agency (MEMA) for review.

The Town received a copy of the FEMA Crosswalk and Review of Farmington's Plan in March 2004. A joint meeting was scheduled to examine the Crosswalk and begin the process of developing a second Draft in accordance with the most recent FEMA recommendations. This meeting included Olive Toothaker and Tim Hardy of Franklin County EMA, Joann Mooney, (MEMA), and Sabra Stirling, Town of Farmington.

FEMA conducted an extremely helpful Risk Assessment Workshop in July attended by over 25 persons. With this information, the Hazard Mitigation Planning Team began the process of compiling information regarding the hazards with a "significant" likelihood of occurring in Farmington. Based on surveys, data, and comments collected at four subsequent Hazard Mitigation Planning Team meetings, the Goals, Objectives, and Measures were determined, and suggested recommendations from FEMA were incorporated.

The Board of Selectmen conducted a Review of the Plan followed by a Public Hearing on November 9, 2004 for the purpose of soliciting comments and questions from the public and other interested parties. Notification of this public hearing was provided in accordance with Maine statutes. (See APPENDIX for Public Hearing Minutes)

The Plan was adopted on November 9, 2004 and submitted to Franklin County EMA, MEMA, and FEMA.

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VI. RISK ASSESSMENT

§201.6(C)(2) of the Rule outlines specific information that Farmington must consider when completing the Risk Assessment portion of this Hazard Mitigation Plan. Our local Risk Assessments provide sufficient information to enable the Town to identify and prioritize appropriate mitigation actions to reduce losses from identified hazards. This plan includes detailed descriptions of the potential hazards that could affect the Town, along with an analysis of the Town’s vulnerability to those hazards with a “significant” possibility of occurring in Farmington. Specific information about numbers and types of structures, potential dollar losses, and an overall description of land use trends in those areas are included in this analysis.

This section includes the following five subsections as follows:

- Identify Hazards
- Profiling Hazard Events
- Assessing Vulnerability: Identifying Assets
- Assessing Vulnerability: Estimating Potential Losses
- Assessing Vulnerability: Analyzing Development Trends

A. Identify Hazards

The Town of Farmington Hazard Mitigation Planning Team identified and addressed several natural hazards. These hazards were identified through a process that utilized input from the Hazard Mitigation Planning Team, AVCOG, public input, research from past disaster declarations, and a Risk Assessment completed by the Franklin County Emergency Management Agency. (See APPENDIX). The Town of Farmington Hazard Mitigation Plan will focus on natural disasters having a “*significant*” likelihood of occurrence in Farmington.

The Natural Disasters that may occur in the Town of Farmington, taken from the Maine Emergency Management Agency hazard identification and vulnerability assessment for Franklin County, are as follows:

Natural Hazards
Avalanche – Ski areas
Blight/Infestation
Bridge Collapse
Civil/Political Disorder
Dam Failure – Affects towns with dams
Drought – Affects all of Franklin County
Earthquake – Affects all of Franklin County
Epidemic/Animals – Affects all of Franklin County
Erosion/Coastal – Affects part of Franklin County
Flood – Affects all of Franklin County
Hurricane/Tropical Storm – Affects all of Franklin County
Power Failure - Affects all of Franklin County
Summer Storms/Severe – Affects all of Franklin County
Tornado - Affects all of Franklin County
Wildfire/Urban Fire – Affects all of Franklin County
Winter Storms - Affects all of Franklin County

1. **Avalanche**

Avalanches involving people do not happen by accident. Three variables interact to determine whether an avalanche is possible.

- a. Terrain: The slope must be steep enough to avalanche
- b. Snowpack: The snow must be unstable enough to avalanche
- c. Weather: Weather is another important variable. Changing weather can quickly increase instability.

Avalanches can only occur on slopes steeper than about 25 degrees and they most often occur on slopes between about 35 and 45 degrees. It is very rare for someone to get caught in an avalanche within a ski area. This information is provided by the Forest Service Avalanche Center. For more information see www.avalanche.org.

Titcomb Mountain, West Farmington –

Titcomb Mountain does not have sustained slopes of 35 degrees and has never experienced an avalanche event, per Neil Foss, Titcomb Mountain Ski Patrol Leader.

2. **Blight/Infestation**

The Maine Department of Agriculture conducts inspections of businesses selling plants. Researchers at the University of Maine conduct research to develop plants resistant to various pests and also evaluate a number of methods to control plant pests. Mitigation efforts are ongoing with surveys of potential plant pest infestations to ensure control measures can be implemented as soon as necessary.

Strategy:

- Cooperate with State of Maine Department of Agriculture addressing causes and horticultural research.

3. **Bridge Collapse**

Normal routes of travel would be interrupted in the collapse, causing substantial inconvenience and the possibility of personal injury. All bridges are vulnerable to the effects of the elements and the natural deterioration which results. Increases in the amount and weight of traffic they are expected to support increase their vulnerability to failure.

The Maine Department of Transportation (MDOT) is responsible for the inspection, repair and/or replacement of bridges. Through their efforts, the danger of bridge collapse has been minimized in the absence of earthquake or other natural or man-made catastrophe.

Strategy:

- Cooperate with MDOT regarding ongoing inspections and repairs.

4. Civil/Social, and Political Disorder

These hazards may occur in Farmington merely by virtue of the Town's existence as a population center. The risk is low since there are no particular highly controversial facilities in the area. Further, Farmington has fully trained public safety staff including police, public works, and fire rescue departments, and a strong local government with high leadership skills. The Town has adopted a Mass Gatherings Ordinance which allows staff to prepare for large gatherings in advance. Refer to Franklin County Hazard Mitigation Plan and Franklin County HazMat Plan for mitigation regarding man-made hazard events.

Strategy:

- Coordinate response with federal, State, and local law enforcement agencies.

5. Dam Failure

The Department of Defense, Veterans and Emergency Management and the Maine Emergency Management Agency have the responsibility for the safety of dams not under federal jurisdiction for licensing and inspection. Maine Emergency Management Agency (MEMA) has developed a Dam Safety Program, and since November 1996, 68 dams have been inspected by a professional engineer. Additionally, MEMA conducts periodic Emergency Action Plan (EAP) development workshops to assist dam owners in preparing EAP's for their dams. Under Maine State Law, all "high" or "significant" hazard potential dams must have an EAP. EAP's detail actions to mitigate dam failures and alert and warn the public if a dam should fail.

Walton's Mill Dam –

Located on Temple Stream, a tributary to the Sandy River of the Kennebec watershed. According to the National Inventory of Dams, Walton's Mill Dam is classified as a structure with low hazard potential. The dam has been owned and operated by the Town of Farmington since 1977. Location of the dam and impoundment is shown on the USGS "Farmington" Quadrangle Map.

This dam withstood the flood of 1987, however; it is in poor condition. There is seepage and infiltration that has caused the soil on the top to slump. Recently the Town put fabric and stone in this area, which caused the water to find a way around the dam. This has caused erosion and settlement around the outside areas of the dam. MBP Consulting, Portland, ME provided the Town of Farmington with a Conceptual Design and Preliminary Construction Cost Estimate for dam repair. This report is available for review at the Farmington Municipal Building.

Strategy:

- Continue working with engineers to reconstruct, remove, or repair the dam.
- Support Maine State Dam Safety Program, FERC, and MEMA contracted engineers during inspections.

6. Drought

A drought and its subsequent impacts would affect the entire town. However, some specific areas of the town might experience dry wells and streams. This may make it difficult for the town's fire rescue department to find adequate water supplies near a fire.

Recent drought conditions, which began approximately three years ago, have caused problems with residential sewer services. Seventy-five percent of the house services are clay, and during drought conditions various roots have sought moisture and found their way into the clay sewers.

In August of 2001, a Drought Task Force was established by the Governor to follow the progress of the drought. River flows and test wells throughout the state were monitored and reported on. In April 2002, an unsuccessful request for disaster declaration was made. The Task Force made a number of recommendations for residents and businesses affected by the drought. These can be found on the Task Force web site at www.maine.gov/mema/drought.

Strategy:

- The “house service” pipes are the responsibility of the homeowners. It is the recommendation of the Wastewater Treatment Facility Superintendent, Steve Moore, that homeowners replace these clay pipes with Polyvinyl Chloride (PVC). This would eliminate bad joints and infiltration problems.
- Early identification of drought threats is important in order to educate the public in conservation measures and minimize damage.
- Continue to monitor drought conditions through Drought Task Force.
- Minimize potential damage by adopting and enforcing guidelines on issuance of burning permits during drought conditions.
- Continue to support the Maine Soil and Water Conservation Commission, together with other State of Maine Department of Agriculture divisions. The Maine Department of Conservation and the Maine Department of Environmental Protection have programs, regulations, policies, and/or educational materials to assist in minimizing this hazard.

7. Earthquake

Earthquakes have been reported from all counties in Maine, thereby indicating some level of statewide exposure. The occurrence is not equally distributed, however, and both modern and historical records indicate somewhat higher activity in the eastern, central, and southwestern parts of the State with more potential damage in urban areas. See www.state.me.us for map illustrating interpreted areas.

Most deaths and injuries during earthquakes result from people being struck or trapped by falling debris (Northeast States Emergency Consortium [NESEC, 1993]). Other possible concerns in a severe earthquake emergency include the disruption of infrastructure facilities such as roads, electricity, and water supplies, as well as the

disruption of emergency services such as police, firefighting, ambulance, and hospital services (Ludman and Coch, 1982).

Should a severe earthquake (of a magnitude of 6.0 and greater) strike, there would be a great need for fire fighting, as well as search and rescue of persons trapped in damaged or collapsed structures.

Strategy:

- Minimize potential damage by enforcing appropriate building codes.
- The Maine Geological Survey maps interpret and publish geologic information, and provide advisory and interpretive information for planning and regulatory agencies.

8. Epidemic/Animals

An endemic or epidemic can occur at any time during the year; but the warm summer months, when bacteria and microorganism growth are at their highest, present the greatest risk. An endemic or epidemic develops rapidly and may last from several days to several months.

Although epidemics occur infrequently, they have the potential to affect a large percentage of the town's population.

The consequential effects of disease are:

- a. Illness and/or loss of life
- b. Disruption or closing of schools
- c. Forced shutdown of businesses and industries.

Strategy:

- The Rules for the Control of Notifiable Diseases require medical care providers to report to the Maine Department of Human Services (DHS) all persons diagnosed with infectious disease conditions. By maintaining a surveillance base for infectious disease entities of public health importance, the Bureau of Health is able to respond appropriately to potential epidemic conditions. For more information relating to Infectious Epidemiology call (207) 287-5301 or go to the Maine Bureau of Health website at www.state.me.us/dhs/boh/ddc/Infectious.htm.
- Continue to support and cooperate with Maine Department of Human Services and Maine Department of Health addressing causes and research

9. Invasive Aquatic Plants

“The introduction of non-indigenous invasive plant and animal species to the United States has been escalating with widespread destructive consequences. Until now Maine has been spared the worst introductions, but this will not last. Significant habitat disruption, loss of native plant and animal communities, loss of property values, reduced fishing and water recreation opportunities and large public/private expenditures have accompanied invasive plant introductions in all of the lower forty-

eight states except Maine.” (Per the State of Maine Department of Environmental Protection at www.state.me.us/dep). For more information regarding Maine’s action plan and instructions on how to report invasive plants go to www.Maine.gov or contact Volunteer Lake Monitoring Program by mail at PO Box 445, Turner, ME 04282, or e-mail at vlmp@megalink.net.

This type of infestation would have the potential for adverse economic impact on shorefront property values, especially **Clearwater Lake**, Farmington.

Strategy:

- Continue public education by distributing State of Maine Boating Regulations Laws and Rules as they become available.
- Continue to have river protection stickers available for purchase by persons who register a motorboat or personal watercraft in the Town of Farmington.

10. Erosion

For the purpose of this plan, erosion is defined as the wearing away and removal of soil particles by running water, earthmoving activity, and/or ice or wind, resulting in severe land destruction and property damage. The Town enacted a Soil Erosion Control and Storm Water Runoff Management Ordinance, Floodplain Ordinance, and Shoreland Zoning Ordinance.

Cushman Drive is an area of immediate concern due to chronic riverbank erosion. The western edge of Cushman Drive loop has five lots threatened by severe bank erosion.

Flooding has caused serious erosion of the riverbank adjacent to **Whittier Road** in the vicinity of Route 156. If this continues, there is a good possibility that the Town will lose a significant amount of Whittier Road within the next five to seven years.

Strategy:

- Cushman Drive - Deflect the river flow that is undermining the bank and permanently stabilize the bank with large boulder riprap, tacked gabion baskets, or some other method. Continue the cooperative effort between the affected residents, the Town, and several State (and possibly federal) entities.
- Whittier Road – Install heavy riprap to stabilize the riverbank.
- Continue to enforce and update the regulations/restrictions for any flood prone areas through the Town of Farmington Floodplain Ordinance. The purpose of this Ordinance is to conserve soil resources, protect water, maintain public health and safety by regulating earth-moving and other activities resulting in the exposure of soils, and to address the effects of development on both the quantity and quality of storm water runoff.
- Mitigate the impact of development and prevent future increases in the hazard risk through Farmington’s Soil Erosion Control & Stormwater Runoff Management Ordinance and the Town of Farmington Zoning Ordinance.

- Public education regarding erosion is vitally important. Agriculturists must be encouraged to plant cover crops, use contour planting techniques, and practice conservation tillage. The following departments provide training, education and assistance to farmers, and forest land management practices:

1. State and federal Agriculture Departments
2. Department of Conservation
3. Bureau of Forestry

The Department of Environmental Protection provides advice, guidance, and technical assistance to municipalities regarding shoreland zoning.

11. Localized Flooding

Hydrologic events frequently cause local road flooding when drainage features are not adequately designed and sized to handle runoff from intense rains. Proper design and installation of problem area drainage systems can reduce cost while improving service. Public awareness and other activities can help to mitigate both current and future floodplain management problems.

The State Planning Office provides assistance to communities, reviews proposed flood plain projects, monitors local administration and enforcement of shoreland zoning, and administers the National Flood Insurance Program (NFIP).

Strategy:

- Inform the general public about preparedness actions to protect life and property from flood damage through the disbursement of updated brochures prepared by AVCOG. (See APPENDIX)
- Provide businesses and residents in the floodplain with information on topics recommended by the National Flood Insurance Program. The Town of Farmington is one of 17 communities in Maine to participate in the Community Rating System (CRS) process and is rated a Class 9 community.
- Continue to enforce and update the regulations/restrictions for any flood prone areas through the Town of Farmington Floodplain Ordinance, and the Town of Farmington Zoning Ordinance.
- Prioritize projects for upgrades.

12. Hazardous Materials (HazMat) Incident

The Town of Farmington has a fully trained public safety staff including police, public works, and fire rescue departments, and a strong local government with high leadership skills. Manmade hazard events are not included in the current Farmington Hazard Mitigation Plan. Please refer to the Franklin County Hazard Mitigation Plan and the Franklin County HazMat Plan.

Strategy:

- Continue to coordinate with FEMA, local hospitals, and medical treatment centers regarding HazMat protocol/response.

- Continue appropriate employee training and certification in HazMat procedures.

13. Hurricane

The entire state is vulnerable to the primary or secondary effects of a hurricane. The experiences of Hurricane Gloria in September 1985 and Hurricane Bob in 1991 have raised awareness of the state's vulnerability.

Strategy:

- The current level of weather forecasting and warning by the National Weather Service (NWS) gives sufficient time for preparations for hurricanes.
- Residents are urged to take precautions to ensure their safety and well being during and following storms due to primary and secondary effects.
- The Farmington Public Works Department provides debris clearance from streets as soon as possible to enable emergency services as well as routine traffic.

14. **Power Failure**

Power failures frequently occur, and utilities activate their resources to the fullest possible extent to restore services first to essential facilities and services, then urban areas, and finally, individual residences, as soon as possible.

Power failures can occur at any time of the year. June, July, and August pose the greatest risk of summertime failures due to thunderstorms and associated high winds and lightning. Falling limbs raise havoc with power lines, generators and transformers. The heavy snow and ice storms of the winter months are also responsible for similar damage. A prolonged power failure during the winter months will have a greater impact on community life since household heating is most commonly dependent upon an electrical source.

During peak demand, Central Maine Power (CMP) can draw the added power from the New England Power Pool. However, due to several plants being off line at one time, New England Power Exchange (NEPEX) may not be capable of supplying the needed power. When this occurs, a 15-step procedure called "Operational Plan 4" will be implemented. The procedure was developed to prevent an overload of the entire electrical system in New England. The steps that will affect the consumers are:

- a. Power Conservation Days
- b. Power Watch
- c. Power Warning

Strategy:

- With support from the Maine Forestry Service and Pine Tree State Arboretum, develop a program to inform the public about proper tree maintenance and/or removal of damaged limbs and dead trees and the

selection of tree types for landscaping which are less susceptible to blow down or breakage during storm events.

- Plans must be made to evacuate and shelter persons from high-risk areas. Reasonable steps must be taken to protect the public from such effects as drinking water contamination and other hazardous conditions.

15. Summer Storms/Severe

Thunderstorms are a violent form of convection. Convection is a process in which cold upper air sinks and warm, moist air rises. As the warm moist air rises, cumulous clouds develop. These clouds turn into thunderstorms that bring strong winds, lightning, hail, and rain. The entire community may experience the storm, but lightning strikes and hail affect a specific area within the storm zone.

- a. **Lightning** is the discharge of electricity within the storm cloud, and it always accompanies a thunderstorm.
- b. **Hail** is a factor in causing property damage during storms.
- c. **High Winds** are another factor causing injuries and damage here in Maine. Since 1950, nearly 400 incidents of convective wind damage have occurred, adding up to several million dollars of damage. Though frequently mistaken for tornados, straight-line winds from downbursts can cause considerable damage.

Strategy:

- Weather forecasting and severe weather warnings issued by the National Weather Service (NWS) usually provide residents and visitors adequate time to prepare. Isolated problems arise when warnings are ignored.

16. Tornado

Since 1950, Maine has experienced 88 tornadoes; the strongest on record in Maine were classified as F2's. Eighteen of the tornadoes were F2's.

Tornadoes develop rapidly. Unless a tornado is sighted or indicated by radar, adequate warning to initiate preparedness activities may not be disseminated.

Strategy:

- The National Weather Service provides warning of tornado-producing conditions and alerts citizens through radio and television broadcasts.
- All citizens are urged to go into below-ground areas at the earliest warning with flashlights and a battery operated radio and to remain there until informed that all danger is past. Shelter and mass feeding may be required as widespread destruction occurs. Responses from State level agencies may be required to respond to the severe effects of a tornado.

17. Urban/Rural Fires

The Town has a full time fire chief and a 34-member volunteer fire rescue department which serves this area with active mutual aids from 17 adjacent communities and agencies. Public water in the urban area provides fire protection capability. Therefore, while the possibility of fire exists, the frequency and severity would be limited.

Strategy:

- An estimated 92% of all forest fires in Maine are human-caused, either intentionally or accidentally. Therefore, public education and care in preventing forest fires is of major importance, as well as effective prosecution of arsonists. The remaining 8% of forest fires are ignited by lightning and are beyond human control. Spotting and warning programs in effect when forest fire danger is high will enable evacuation and firefighting efforts to begin as soon as possible.
- Maintain mutual aid agreements between municipal fire rescue departments.
- Continue to support the Maine Forest Service education, prevention, and suppression programs.

18. Severe Winter Storm Event (Ice, wind, or heavy snow storms)

For this Plan severe winter storms are described as 24" of snow over a 12-hour period. The highest hazard potential exists in the winter due to climatic conditions (favorable for ice formation) and the loss of power and heat. The impacts of ice and wind, as well as potential property damage during blizzards, are compounded by the loss of overhead power service and blocking of roadways by fallen trees.

Strategy:

- Accurate public information, including recommended actions to prepare for adverse weather conditions continue to be most effective in preventing loss of life and minimizing property damages. Citizens should be encouraged to keep posted on weather conditions and prepare early for anticipated severe storm warnings. These preparations should include an adequate supply of food, fuel, medical items, battery operated radio, and flashlight.
- Cooperate with federal, State and local agencies for cleanup. The Farmington Public Works Department is responsible for the removal of snow and ice and the treatment of roadway surfaces with sand and salt on primary and local highways and bridges.
- With support from the Maine Forestry Service and Pine Tree State Arboretum, develop a program to inform the public about proper tree maintenance and/or removal of damaged limbs and dead trees, and the selection of tree types for landscaping which are less susceptible to blow down or breakage during storm events.

- Develop a training program for public works employees so they can recognize trees in the right-of-way requiring maintenance or removal and notify the appropriate responsible party.
- Review land use regulations to assure that landscaping standards minimize species susceptible to blow down or breakage as the result of winter storms.

19. Other Hazards

Extreme cold weather from mid December through mid February of 2002-2003 led to four compressor failures in two of the Town's sewer pump stations. These pump stations are located on Lake Avenue and Temple Road.

The compressors provide air to operate/regulate the sewage level in the pump station. They indicate the level of water to be pumped. If the compressors fail, there is no indication of water level or an alarm level. Excessive vibration on one pump station caused the failures, and the other compressors wore holes in the surrounding plastic tubing, which caused their failure.

All four compressors have been replaced and independent float alarms added. Cost of this project was \$1,500.

Strategy:

- Proposed actions involve an appropriate public safety response team and specialized personnel trained in appropriate response techniques.

See Comprehensive list

TOWN OF FARMINGTON HAZARD MITIGATION PLAN
Hazards To Be Profiled

In order to determine which of these many types of hazards to consider in a local mitigation plan for Farmington, two factors were taken into consideration:

1. The level of risk present in Farmington
2. The ability of Farmington to mitigate each type of hazard – Many types of hazards can only be effectively mitigated at the regional or state level, and thus fall beyond the control of the Town of Farmington. Most such hazards fall under control of either federal or state regulation. Hazards of this type include avalanche, bridge collapse, dam failure, agricultural blight, civil disorder/terrorism, disease/epidemic, drought, hazardous materials, and utility/power failure.

After assessment and analysis of the comprehensive list of potential hazard types (See table “Impact of Each Hazard” on page 20), three “*significant*” natural hazards were identified as falling within the scope of the Town of Farmington Hazard Mitigation Plan:

1. Erosion
2. Localized Flood
3. Severe Winter Storms

The following Table identifies the natural hazards to be profiled in the Town of Farmington Hazard Mitigation Plan.

Hazard	How Identified	Why Identified	Vulnerability
Severe Winter Storms	Review of past disaster declarations Input from residents NOAA data	Maine is frequently hit with major “Nor’easter” storms and blizzards and is often subject to ice storms.	High
Localized Flooding	Review of FIRM Maps Input from residents Review of past disaster declarations Identification of repetitive losses	Associated with the effects of spring runoff. The Sandy River flows through the middle of Town and several areas experience flooding during spring thaw, ice jams, and/or heavy rains.	High
Erosion	Review of FIRM Maps Input from residents Input from Army Corps of Engineers Input from NRCS Input from Maine DEP	There are two areas of immediate concern in Farmington due to chronic riverbank erosion, threatening properties and paved roadway.	High

TOWN OF FARMINGTON HAZARD MITIGATION PLAN

Hazards Eliminated

The following table identifies the hazards that were eliminated from further consideration in the Plan due to the lack of historical evidence, lack of overall severity, or a low to low/moderate likelihood for the event to occur. Although these disaster events were not profiled in the Hazard Mitigation Plan, the Plan does not certify that any of these events will not or could not occur and cause great damage. The Farmington Hazard Mitigation Planning Team decided to keep its first Plan simple by only profiling the top three “significant” natural hazards.

Avalanche	Review of USGS Maps Input from Titcomb Mountain Ski Patrol Leader, Neil Foss	Titcomb Mountain does not have sustained slopes of 35 degrees.
Blight/Infestation	Review of State Entomological Office historical records Input from residents See page 46-48	There are no historical records of major damage that has caused catastrophic economic conditions.
Bridge Collapse	Review of historical data Residents input See page 46-48	Low likelihood of bridge collapse
Civil/Social and Political Disorder	Review of historical data See page 46-48	Refer to Franklin County Hazmat Plan.
Dam Failure	Review of historical data See page 46-48	No history of dam collapse causing damage by major flooding.
Drought	Review of State EMA records Review of NOAA records See page 46-48	Rainfall data doesn't show a serious problem. The drought effects have never been sufficient to create disaster conditions.
Earthquake	Review of Maine Geological Survey records	Although earthquakes are common in Maine, no significant damaging movement has occurred in 20,000 years.
Epidemic/Animals	Review of historical data Residents input See page 46-48	No major outbreaks of disease that have caused serious harm in many years.
Hazardous Materials Incident	Review of historical data See page 46-48	Refer to Franklin County Hazmat Plan.
Invasive Aquatic Plants	Review of historical data See page 46-48	No known cases of invasive plants in Clearwater Lake to date.
Power Failure	Review of historical data See page 46-48	Farmington experiences intermittent power failure with two occurrences of power failure for an extended period of time.
Summer Storms/Severe	Review of past disaster declarations Review of historical data Input from residents See page 46-48	Although Farmington experiences severe thunderstorms, they rarely cause major widespread damage.
Tornado	Review of National Weather Service records See page 46-48	On average, 1-2 tornadoes occur in the State of Maine each year, however, there has been no loss of life or major damage in many years.
Urban/Rural Fires	Historical data Input from Fire Chief, Terry Bell See page 46-48	Farmington Fire Rescue reports no wild fires of 500 acres or more, and no unmanageable urban fires

TOWN OF FARMINGTON HAZARD MITIGATION PLAN

B. Profiling Hazard Events

1. SEVERE WINTER STORM

A. Previous Occurrences

The National Climate Data Center (a division of NOAA) reports statistics on severe winter storms from January 1993 through April 2003. These data illustrate 11 years of winter storm history for Farmington.

During the 11-year period, Farmington experiences a total of 54 storms, an average of about 5 severe winter storms per year. The number of storms per year varies only slightly.

Winter Storms in Farmington, 1993 through 2003 (Source NOAA National Climate Data Center)

02/12/93 (13 In.)	02/05/95 (12 In.)	03/07/99 (13 In.)	12/06/03 (14 In.)
03/14/93 (18 In.)	01/08/98 (RA-Ice)	02/06/01 (24 In.)	12/07/03 (26 In.)
01/18/94 (15 In.)	01/09/98 (RA-Ice)	03/05/01 (14 In.)	12/15/03 (15 In.)
01/04/94 (12 In.)	01/10/98 (RA-Ice)	01/04/03 (19 In.)	

A total of \$163,402 in FEMA funding was spent in Farmington from 1987 through 1998 to address these severe winter storms. The Table below summarizes these events taken from Overview of Natural Disasters provided by Franklin County Emergency Management Agency (See APPENDIX).

DATE	EVENT	I. D. NO.	DESCRIPTION
March 1993	Blizzard	007-24775	Approximately 23 inches of snow fell in a period of 2 days. Heavy winds caused major drifting with some roads almost impassable.
January 1998	Ice Storm	007-24775	Freezing rain over a period of 48 hours caused roads to become extremely icy. Attempts to sand and scrape were futile. Ice covered tree limbs fell in roadways and on power lines causing traffic disruption and major power line damage/outage.

B. Conditions Contributing to Risk

Farmington's location in Northern New England places it in a high-risk area for winter storms. While the majority of winter storms in Farmington occur during the winter season itself, there are occasional winter storms in the late fall (November and early December) in the spring (late March and April). However, the severity of storms is typically most serious in December, January, and February, with storms in the earlier and later parts of the seasons usually being of lesser magnitudes. Another consideration in assessing past winter storms is the time of day they occurred. Winter storms were slightly more likely to occur during the AM hours, as 55% percent of storms

arrived in Farmington between midnight and 5:00 AM. Late morning, afternoon, and evening storms were slightly less likely to occur (45%).

C. Future Occurrences

Using historical data and local knowledge as a predictor of future storms, Farmington is assumed to be at risk for about four to six storms each winter. More importantly, the town should expect one especially damaging storm at least once every one to three years, similar to the ice storm of January 8, 1998. The greatest amount, by a slight margin, of future severe winter storms can be expected to occur in January, with significant numbers also expected in December, February, and March.

The time of day at which storms occur is also important, as overnight storms allow for the closure of schools, and businesses, whereas storms during the day force people to travel home during storm conditions.

TOWN OF FARMINGTON HAZARD MITIGATION PLAN

2. FLOODING

A. Previous Occurrences

The Town of Farmington is subject to riverine and wetland area flooding. The Municipal Floodplain Maps show the areas that are susceptible to potential flooding. Over an 11-year span from 1987-1998, there were six (6) federally declared disasters in Farmington, three (3) of which were floods. A total of \$123,844 in FEMA relief funding was spent to address damages from these floods.

The Table below summarizes these events taken from Overview of Natural Disasters provided by Franklin County Emergency Management Agency (See APPENDIX)

DATE	EVENT	I. D. NO.	DESCRIPTION
April 1987	Flood	007-24775	Over 4 inches of rainfall in a period of 48 hours (March 31- April 2) with the addition of snow melt caused flooding and road washouts due to plugged or frozen culverts.
January 1996	Flooding	007-24775	Heavy rain for a period of 24 hours caused flooding in the Intervale and caused road to wash out due to frozen ditches and culverts.
July 1998	Floods	007-24775	Heavy rainfall (3+ inches) for a period of 36+ hours flooded the Intervale. In-town roads were washed out due to debris plugging large road culverts.

Farmington is a participant in the National Flood Insurance Program (NFIP) - Community Rating System (CRS). There have been fifteen (15) claims made for damages, thirteen (13) of which have been paid. Five (5) of the claims were for a January 9, 1978 storm and four (4) were for the April 1987 flood. The remaining six (6) claims were for miscellaneous events. There were twenty-three (23) policies in force in Farmington on December 31, 2002, with a total insured value of \$1,467,500.

The total amount paid out to claimants is \$82,446. See the Table below provided by Androscoggin Valley Council on Governments (AVCOG).

Farmington Flood Insurance Data Through December 2002	
# Policies	23
\$ Value of Policies	\$1,457,500
# Claims Made	15
# Claims Paid	13
\$ Paid for Building Damage	\$65,746
\$ Paid for Content Damage	\$16,700
Total \$ Paid	\$82,446

B. Conditions Contributing to Risk

The Sandy River flows south, roughly through the middle of the town. Mountain foothills surround the river, cut by a multitude of streams. Temple and Wilson Streams are the principal tributaries to the Sandy River, as well as Cascade, Barker, Beaver, Beale's, and Hardy Brooks. Farmington has about 3,000 feet of shore frontage on Clearwater Lake, a large lake in the northeastern corner of the Town. Ballard Pond is a small, privately owned pond in the northwest corner of town. Other ponds in Farmington include Mosher Hill Pond, Walton's Mill Pond and Rollo Pond.

The majority of flood damage in Farmington is caused by winter runoff in the springtime, which undercuts or overtops rural areas as well as Main Street (Intervale), Front Street parking lots, and the Waste Treatment Facility. When Maine has an above average snowfall for winter and then warmer temperatures and rainfall suddenly arrive in early spring, the snow pack melts off quicker than the watersheds can handle. This causes local wetlands to overflow their boundaries and flood nearby road surfaces. Typically, this road damage is not major, though it can absorb the municipal road maintenance budget for an entire year.

C. Future Occurrences

In addition to these major flooding disasters, many smaller flooding events also take place in Farmington. The best predictor of future flooding is the historical information compiled by the Franklin County Emergency Management Agency and the Farmington Public Works Department regarding flood hazard locations.

As part of this Hazard Mitigation Plan, the Farmington Public Works Department, Police Department, and Wastewater Department have identified areas suffering from repeated damage (See Recommended Mitigation Projects – APPENDIX). The locations of FIRM flood risk areas are also documented as part of this process (See Floodplain Map in APPENDIX). Using the best data available, Farmington has identified twelve manufactured homes, forty-eight residential structures, and twenty-five non-residential structures located in floodplains. (See APPENDIX) It was noted in the September 21, 2004 Minutes of the Comprehensive Plan Implementation Committee meeting that a list of structures located in floodplain areas has been compiled.

TOWN OF FARMINGTON HAZARD MITIGATION PLAN

3. EROSION

A. Previous Occurrences

In past years flooding has caused erosion of the riverbank adjacent to the Whittier Road in the vicinity of Route 156 (44° 36.983 N - 070° 05.372 W). Previously, a house at this location was moved because of the erosion of the Sandy River. If this erosion continues, there is a possibility that the Town will lose a significant portion of Whittier Road within the next five to seven years. Mitch Boulette, Public Works Director, recommends installing heavy riprap.

Chronic riverbank erosion is affecting a number of Cushman Drive residents (44° 42.435 N - 70° 10.647 W). Code Enforcement Officer, Steve Kaiser, recommends deflecting the river flow that is undermining the bank and permanently stabilizing the bank with large boulder riprap, tacked gabion baskets, or some other method.

The terminus to the wastewater treatment facility's outfall on Farmington Falls Road/Route 2 (44° 39.311 N - 070° 08.369 W) is located in an extreme curve or bow of the Sandy River. The extreme curve or oxbow, past river flooding, and future river flooding all contribute to sand and gravel being deposited along the edge of the river, resulting in the formation of an oxbow which will eventually connect the Sandy River to Temple Stream. The treatment facility's outfall is located in what would be the old river channel, thus eliminating effective dilution. The Town of Farmington is currently working with Woodard & Curran Engineering and Alden Turner, USDA Rural Development, to relocate the outfall pipe, which will result in increasing effluent mixing and providing rapid and complete mixing with the receiving waters, Sandy River. The cost of this project will be approximately \$900,000. (Report available at the Municipal Building during normal business hours).

Rodney Howe, Army Corps of Engineers, is currently coordinating an effort to reach consensus on how to best address the erosion problems along the Sandy River. A meeting was held on July 27, 2004 to discuss several issues regarding erosion and stabilization. This meeting included Paul Hersey, District Conservationist (NRCS); staff from other NRCS offices in the State, Rod Howe, ACOE, staff from US Fish and Wildlife, staff from DEP, a land use consultant, Steve Kaiser, Farmington Code Enforcement Officer, and Tom Eastler and several of his geography students. (See Memo from Steve Kaiser, Farmington CEO – APPENDIX).

B. Conditions contributing to risk

The Sandy River flows south, roughly through the middle of the town. Mountain foothills surround the River, cut by a multitude of streams. Temple and Wilson Streams are the principal tributaries to the Sandy River, as well as Cascade, Barker, Beaver, Beale's, and Hardy Brooks. Past river flooding and future river flooding all contribute to the erosion and accumulation of sand and gravel along the edge of the river.

C. Future Occurrences

River flow, past river flooding, and future river flooding will exacerbate the current situation of erosion and sand and gravel deposits. These conditions will persist unless the agencies come to an amicable solution to this recurring problem.

It was noted in the Minutes of the June 9, 2004 meeting of the Comprehensive Plan Implementation Committee that Steve Kaiser, Code Enforcement Officer, discussed the sometimes conflicting recommendations from varied agencies regarding solutions to the problems and their impact on Maine landowners, recreational interests, and the Town of Farmington (relating to the Sandy River) i.e. Department of Environmental Protection, US Fish & Wildlife, Maine Geological Survey, NCRS, etc.

TOWN OF FARMINGTON HAZARD MITIGATION PLAN

C. Assessing Vulnerability: Identifying Assets

1. Location of Critical Facilities

Critical facilities are categorized as those town or state buildings or services that are first-responders in a disaster, Fire Departments, Police Departments, Public Works Departments, Municipal office buildings, hospitals, and shelters. Utilities and towers are also included because of communication capabilities.

Ensuring that key public buildings and infrastructure remain intact during disasters give a community the ability to mitigate against potential damage from hazards. This section discusses the location of these critical resources. The Town of Farmington Tax Maps provide data regarding the facility locations. (See APPENDIX for Map of Critical Facilities) Many different types of public structures must be protected in case of disaster. These include emergency shelters, hospitals, EMS facilities, schools, Public Works facilities, prisons, and municipal buildings. In addition, many types of public infrastructure must also be protected from disasters, including water and sewer treatment facilities, roads, and bridges.

Emergency Shelters

Farmington has one emergency shelter with a capacity of 450. This shelter is located in the Farmington Community Center. One concern with shelters is the presence of backup generators to provide heat and electricity during severe winter storm events. Severe winter storms in Maine often result in the widespread loss of electricity for several days. Therefore, having backup generators to provide heat for displaced families is critical during such storms.

Tim Hardy, Franklin County Emergency Management Director, reports that data regarding inspections and locations of Red Cross shelters located in Farmington is currently being updated. This information will be incorporated in the Plan at a later date. The Table below displays emergency shelter data for Farmington.

Name	Location	Capacity	Generator	Assessed Value
Community Center	127 Middle Street	450	Yes	\$710,400

Hospitals

There is one hospital located in Farmington that serves a large portion of Franklin County, Franklin Memorial Hospital (FMH), and numerous clinics located within the town. The hospital is accessible to major transportation routes and includes a helipad. FMH is licensed for 70 acute care beds, per Alex Freeman, FMH. Compared to Farmington's population this represents one bed for about every 105 residents. This ratio does not include surrounding populations that also utilize this facility.

Name	Location	Assessed Value
Farmington Memorial Hospital	111 Franklin Health Commons	\$7,293,200

EMS Locations

Farmington's Fire Chief, Terry Bell, oversees a 34-member volunteer firefighter unit serving Farmington, Farmington Falls, and West Farmington. Ambulance service is contracted with LifeStar Ambulance based at Franklin Memorial Hospital, Farmington.

Farmington FireRescue has mutual aid agreements with 15 towns in Franklin County, with the Livermore Falls Fire Department in Androscoggin County, and International Paper Company HazMat Team, in Jay. The table below displays EMS data for Farmington.

Name	Location	Assessed Value
Farmington Fire Rescue	153 Farmington Falls Road (Central)	*See Municipal Building
Farmington Falls	114 Philbrick Street (Substation)	\$40,400
LifeStar	111 Franklin Health Commons	*See Fkln. Mem. Hosp

Schools

As of September 2004 there were a total of 2,005 students in five schools in Farmington. This information was provided by Kris Pottle, Business Manager, School Administrative District #9. Roger Spear, UMF Vice President of Administration, reports that approximately 1,050 resident students and 1,309 commuter students are currently enrolled at the University of Maine at Farmington.

School	Location	Students Enrolled	Generator	Assessed Value
Cascade Brook Sch.	162 Learning Lane	299	No	\$6,700,000
Mt. Blue Middle Sch.	269 Middle Street	408	No	\$9,000,000
W. G. Mallett School	113 Quebec Street	358	No	\$3,108,600
Mt. Blue High Sch.	129 Seamon Road	940	No	\$10,380,300
Foster App. Tech Ctr.	173 Seamon Road	0- from Farmington	No	\$82,800
UMF	224 Main Street (Main Office) Various Locations	Resident 1,050 Commuter 1,309		\$42,152,600

Water and Wastewater Treatment Facilities

Water Supply

The Farmington Village Corporation provides water to 1,500+ customers in Farmington and Temple. The water source consists of two (2) ground water wells located on either side of the Sandy River. (See Critical Facility map) The water is stored in two (2) reservoirs: One located on Powder House Hill off Anson Street in Farmington, and the other located off Varnum Pond Road in Temple.

Name	Location	Generator	Assessed Value
Farmington Village Corporation	137 High Street (Main Office)	Yes	\$272,200
	Well locations - See Critical Facilities map	Yes	

Wastewater Treatment Facility

Farmington owns and operates a Grade III Wastewater Treatment Facility. The treatment facility can handle .9 Million Gallons Daily (MGD), but currently has a flow of .450 MGD. Presently, the effluent from the facility side-discharges into the Sandy River.

Three (3) certified operators maintain the facility, which has over 1,000 connections to the system. It has thirty (30) miles of collection line and twelve (12) pump stations. The facility generates 1,100 cubic yards of biosolids annually. The facility is an activated sludge plant utilizing the extended aeration mode.

Name	Location	Generator	Assessed Value
Farmington Wastewater Treatment Facility	269 Farmington Falls Road	Yes	\$11,000,000

Other Utilities

There are 144.48 miles of electrical transmission lines (401.62 conductors) and 4,238 poles in Farmington. This data was provided by Rhonda Perkins, Central Maine Power Company. Data regarding miles of telephone and cable lines was not available through Adelphia Cable and Verizon Telephone services. There are three communication towers and one radio tower in Farmington. These towers break down as follows:

Tower	Location	Company	Assessed Value
Radio towers –	423 Voter Hill Road	WKTJ	\$52,000
Telecommunication tower	421 Voter Hill	US Cellular	\$158,300
Telecommunication tower	180 Main Street	Unicel	
Telecommunication tower	300 Mosher Hill Road	Thomas Eastler	

Transportation Network

Farmington's transportation network includes roads and bridges. In total there are approximately 89 miles of roadway, approximately 76 miles of which are paved and 13 miles of which are unpaved. For this Plan, Routes 2, 4, 27, and the Town Farm Road are defined as Arterials. Routes 133, 149, 156, and 41 are defined as Major Collectors, and Route 43 is defined as a Major Collector to Industry and a Minor Collector to Temple. For this Plan Knowlton Corner Road, Whittier Road, and Seamon Road are defined as Minor Collectors. (Data provided by the *Town of Farmington Zoning Ordinance*.)

The Maine Department of Transportation (MDOT) is responsible for the inspection, repair and/or replacement of bridges. Through their efforts, the danger of bridge collapse has been minimized in the absence of earthquake or other natural or man-made catastrophe. The Town's bridge inventory is shown below:

Name		Location
Center Bridge	West Farmington	44° 39.738 N - 070° 09.157 W
Temple Stream Bridge	West Farmington	44° 39.392 N - 070° 09.175 W
Morrison Hill Bridge	West Farmington	44° 39.694 N - 070° 09.803 W
Fairbanks Bridge	Fairbanks	44° 42.069 N - 070° 10.466 W
Cement Bridge	Farmington Falls	44° 37.230 N - 070° 04.512 W

Dams

The Town of Farmington owns one dam located in the Walton's Mill Pond Park. This dam withstood the flood of 1987; however, it is in poor condition. A July 2004 conceptual design and preliminary construction repair estimate of \$159,711, provided by MBP Consulting, Portland, ME, is available for review at the Farmington Municipal Building, 153 Farmington Falls Road. The table below displays data regarding the dam:

Name	Location	Location
Walton's Mill Pond Dam	Temple Road, West Farmington	44° 39.650 - 070° 09.943 W

Municipal Buildings

As mentioned above, ensuring public buildings remain intact during disasters gives a Town the ability to mitigate against potential damage from hazards. Many different types of public structures must be protected in case of a disaster event. The significant Municipal facilities addressed in this Plan include the Municipal Building, the Police Department, the FireRescue Department (See above), the Wastewater Treatment Facility (See above), and the Public Works facilities. Please refer to the Franklin County Hazard Mitigation Plan for mitigation efforts related to the Franklin County Jail.

For the purposes of this Plan, most of the municipal buildings are not in areas vulnerable to significant events. Where a fire station may be vulnerable, another station is available. However, the Wastewater Treatment Facility (See above), located near river discharge points, is most vulnerable to flood damage.

Name	Location	Generator	Assessed Value
Municipal Building	153 Farmington Falls Road	Yes	\$1,360,900
Police Department	153 Farmington Falls Road	Yes	*See Municipal Building
FireRescue Department	153 Farmington Falls Road	Yes	*See Municipal Building
Public Works Garage	152 Public Works Drive	No	\$838,000
Franklin County Sheriff's Office	121/123 County Way	Yes	

TOWN OF FARMINGTON HAZARD MITIGATION PLAN

D. Assessing Vulnerability: Estimating Potential Losses

The Town of Farmington has been impacted in the past by natural disasters, including severe winter storms, flooding, and erosion. This section identifies areas in Farmington that are most vulnerable to these events and estimates their potential loss. It is difficult to ascertain the amount of damage caused by a natural hazard because the damage will depend on the hazard's extent and severity, making each hazard event somewhat unique. In addition, human loss of life was not included in the potential loss estimates, but could be expected to occur, depending on the severity of the hazard.

Severe Winter Storms

Heavy snows typically occur during December, January, and February. New England usually experiences at least one or two "Nor'easters" with varying degrees of severity each year. Power outages, extreme cold, and impacts to infrastructure are all effects of severe winter storms that have been felt in Farmington in the past. All of these impacts are a risk to the community, including isolation, especially of the elderly, and increased traffic accidents. Damage caused as a result of this type of hazard varies according to wind velocity, snow accumulation, and duration. The assessed value of all residential and non-residential structures in Farmington is \$316,119,700 (\$395,149,625 estimated Fair Market Value). Assuming 1% to 5% town-wide damage, a winter storm could result in \$3,161,197 to \$15,805,985 in damage (\$3,951,496 to \$19,757,481 estimated Fair Market Value).

Flooding

Flooding is often associated with heavy rains, ice jams, and rapid snow melt in the spring.

In the following calculations, the average replacement value was calculated by adding the assessed value of all structures in the 100- and 500-year floodplains dividing by .80 (80%) and then dividing by the number of structures (See APPENDIX). FEMA has developed a process to calculate potential loss for structures during flooding. The potential loss was calculated by multiplying the average replacement value by the percent of damage expected from the hazard event, and then by multiplying that figure by the number of structures. Manufactured homes, other residential, and non-residential structures were separated. The costs for repairing or replacing bridges, railroads, power lines, telephone lines, and the contents of structures has not been included in this estimate.

The following calculation is based on eight-foot flooding and assumes that, on average, a manufactured home receives 82% damage (*Understanding Your Risks, Identifying Hazards and Estimating Losses, FEMA page 4-13*).

Manufactured Home Damage:

$$12 \text{ structures} \times (\$18,081 \text{ avg. replacement value} \times 0.82) = \\ \$177,912 \text{ Potential Losses}$$

The following calculation is based on eight-foot flooding and assumes that, on average, one or two story buildings with basements receive 49% damage (*Understanding Your Risks, Identifying Hazards and Estimating Losses, FEMA page 4-13*).

Residential Damage:

48 structures x (\$60,630 avg. replacement value x 0.49) =
\$1,426,018 Potential Losses

Non-Residential Damage:

25 structures x (\$127,495 avg. replacement value x 0.49) =
\$1,561,814 Potential Losses

The following calculation is based on four-foot flooding and assumes that, on average, a manufactured home receives 78% damage.

Manufactured Home Damage:

12 structures x (\$18,081 avg. replacement value x 0.78) =
\$169,238 Potential Losses

The following calculation is based on four-foot flooding and assumes that, on average, one or two story buildings with basements receive 28% damage.

Residential Damage:

48 structures x (\$60,630 avg. replacement value x 0.28) =
\$814,867 Potential Losses

Non-Residential Damage:

25 structures x (\$127,495 avg. replacement value x 0.28) =
\$892,465 Potential Losses

The following calculation is based on two-foot flooding and assumes that, on average, a manufactured home receives 63% damage.

Manufactured Home Damage:

12 structures x (\$18,081 avg. replacement value x 0.63) =
\$136,692 Potential Losses

The following calculation is based on two-foot flooding and assumes that, on average, one or two story buildings with basements receive 20% damage.

Residential Damage:

48 structures x (\$60,630 avg. replacement value x 0.20) =
\$582,048 Potential Losses

Non-Residential Damage:

25 structures x (\$127,495 avg. replacement value x 0.20) =
\$637,495 Potential Losses

Erosion

The potential losses due to erosion are somewhat predictable based on location. Damage depends on the location, extent, and severity of this hazard.

In past years flooding has caused erosion of the riverbank adjacent to the Whittier Road in the vicinity of Route 156 (44° 36.983 N - 070° 05.372 W). Previously, there was a house on this site, which was moved because of the erosion of the Sandy River. If this erosion continues, there is a good possibility that the Town will lose seven properties and a significant portion of Whittier Road within the next five to seven years. Mitch Boulette, Public Works Director, recommends installing heavy riprap.

The assessed value of all residential and commercial structures located in the Whittier Road project area totals \$324,100. If the riverbank is left unattended and the erosion continues, there is the possibility of \$474,100 in damages resulting from the loss of land and buildings, which includes \$150,000 to replace a portion of paved roadway.

Chronic riverbank erosion is affecting a number of Cushman Drive residents (44° 42.435 N - 70° 10.647 W). The assessed value of five residential structures located in the Cushman Drive project totals \$357,000. If the riverbank is left unattended and the erosion continues, there is the possibility of \$658,500 in damages resulting from the loss of land and buildings.

Assessed Values of Properties Threatened by Erosion

Street	Buildings		Land/Bldgs	
WHITTIER ROAD				
Tax Map #R2-18	9,500		26,400	
Tax Map #R2-18-on	8,200			
Tax Map #R2-18A			9,100	
Tax Map #R2-19	55,400		75,500	
Tax Map #R2-19B	80,100		92,200	
Tax Map #R2-19C	56,300		68,700	
Tax Map #R219D	37,400		52,200	
		246,900		<u>324,100</u>
CUSHMAN DRIVE				
Tax Map #U28-7-05	\$62,200		\$76,500	
Tax Map #U28-7-06	77,200		82,700	
Tax Map #U28-7-07	46,000		57,600	
Tax Map #U28-7-08	62,000		73,600	
Tax Map #U28-7-09	54,100		66,600	
		301,500		357,000
		548,400		681,100

TOWN OF FARMINGTON HAZARD MITIGATION PLAN

E. Assessing Vulnerability: Analyzing Development Trends (Existing/Anticipated)

Farmington is the shiretown of Franklin County. The township is rectangular - about four and a half miles wide and ten miles long. The Sandy River runs longitudinally north/south through the center of the township. Two major streams join the Sandy – Temple Stream in the center of town, and Wilson Stream at the southern end. Eight minor streams feed into the Sandy, Temple and Wilson. Through Shoreland Zoning and Floodplain Management, activities in river and stream areas are restricted and regulated. Smaller tributaries are additionally regulated through the Natural Resources Protection Act.

While the township consists generally of hilly terrain, there are also significant floodplain areas associated with the Sandy River. Although most of this floodplain area is unoccupied residentially, a significant part is used as cropland and a small portion in the center of town is used commercially. About eighty-five residential and commercial properties are wholly or partially within the 500-year floodplain. Most of the existing development in the floodplain areas is historical, and ordinances severely restrict any new development in these areas.

Farmington’s downtown and most of its structural and population density are located in the geographic center of the town – within an area of about four square miles. Although from its highways and byways Farmington may seem fairly well developed, aerial photos show much undeveloped land between these roads which intersect in the center of town and radiate outward like wheel spokes. There are four village areas – downtown, Fairbanks (north), West Farmington, and Farmington Falls (south).

There is little industry in Farmington, but there are significant commercial areas both in the center of town and westward on Routes 2 & 4 towards Wilton. Much recent residential growth has occurred in the central village area with the remainder scattered throughout town. Older subdivisions with available lots near the town’s center have been “building-out” significantly. Newer subdivisions are occurring primarily in the rural areas of town, but are not expected to “build-out “ rapidly.

Employers within the town provide about 3,500 jobs. There is significant health and educational infrastructure within Farmington with FMH, UMF, and SAD #9 – which themselves employ about 1,500. Retail and service businesses employ another 1,500. The balance are employed by manufacturers, farms, and contractors. There are about 2,200 homes in town and about 500 business locations. About ten working farms remain (dairy, beef, crop), and logging activity has increased as landowners’ needs require increased return from their property.

Farmington adopted an updated Comprehensive Plan in 1998, and adopted town-wide zoning in 1999 along with other ordinances to implement the updated plan. The Town seeks to incorporate additional anti-sprawl/smart-growth tools in the process of updating and administering ordinances. There are several conservation areas in town: Bonney Woods, Flint Woods, Clifford Woods, and Walton’s Mill Pond. The Town anticipates significant additional commercial growth along Routes 2 & 4 west (Wilton Road), and increasing residential growth – both in subdivisions (primarily in-between village and rural areas) and single-site (village and scattered). The Town will soon be adopting locally the International Building Code and the International Residential Code which were adopted recently by the State

TOWN OF FARMINGTON HAZARD MITIGATION PLAN

VII. MITIGATION STRATEGY

The Local Hazard Mitigation Plan must “include a mitigation strategy that provides the jurisdiction’s blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs, and resources, and its ability to expand on and improve these existing tools,”

This entails the development of goals from which specific mitigation actions and projects will be derived. All mitigation actions must be prioritized according to a cost-benefit analysis, with a focus on how effective the actions are expected to be with respect to their cost.

This section includes the following three subsections as follows:

- Local Hazard Mitigation Goals
- Identification and Analysis of Mitigation Measures
- Implementation of Mitigation Measures

TOWN OF FARMINGTON HAZARD MITIGATION PLAN

A. LOCAL HAZARD MITIGATION GOALS

Definitions:

Goals are general guidelines that explain what you want to achieve. They are usually long-term and represent comprehensive visions, such as “eliminate flood damage”.

Objectives define strategies or implementation steps to attain the identified goals. Unlike goals, objectives are specific, measurable, and have a defined completion date. Objectives are more specific, such as “adopt a zoning ordinance prohibiting new development in the floodplain”.

The Farmington Hazard Mitigation Planning Team reviewed and analyzed the Town’s risk assessment studies. The following goals were determined to have the greatest benefit in hazard reduction in Farmington. The descriptions, goals, and objectives for each are as follows:

SEVERE WINTER STORMS

The most likely damages caused by a severe winter storm event are the loss of electrical power from downed power transmission lines; and the blockage of roadways from tree debris or winter snow or ice. There is the potential for loss of life caused by delayed responses from emergency services, the improper use of backup heat sources, freezing conditions, debris falling on an individual, or from storm-related vehicle accidents. Other types of general damage to personal and real property may be caused by blizzard winds. Therefore, the goals and objectives to mitigate the potential damages from a severe winter storms are as follows:

Goal 1. Reduce damage, injury and loss of life in Farmington after a severe storm event.

Objective 1.1 Lessen the future loss of life and personal injuries from severe winter storms.

Objective 1.2 Reduce real and personal property damages caused by severe winter storms

Objective 1.3 Assure all emergency facilities have temporary backup power capabilities.

Objective 1.4 Assure prompt restoration of critical transportation links.

FLOODING

The most likely damages caused by flooding in Farmington are the destruction of roadways as a result of washouts and undercutting. Farmington uses the Town of Farmington Shoreland Zoning Ordinance, Floodplain Ordinance, and Stormwater Runoff Management Ordinances in addition to Flood Insurance Rate Map (FIRM)

information to control development in flood prone areas. There is the potential for loss of life by drowning and by delayed responses from emergency services during high water conditions. Floodwater may also contaminate public and private water supplies and damage personal and real property. Flooding may shut down businesses, resulting in major losses of income for local businesses and residents. Therefore, the goals and objectives to mitigate the damages from flooding are as follows:

Goal 2. Reduce damage, injury and loss of life in Farmington caused by flooding.

Objective 1.1 Lessen the future loss of life and personal injuries from flooding.

Objective 1.2 Reduce real and personal property damages caused by flooding.

Objective 2.3 Assure prompt restoration of critical transportation links.

Objective 2.4 Minimize damage to public and private drinking water supplies by flooding.

Objective 2.5 Undertake activities to reduce the economic impact caused by flooding.

EROSION

For the purpose of this plan, erosion is defined as the wearing away and removal of soil particles by running water, earthmoving activity, and/or ice or wind, resulting in severe land destruction and property damage. The Town has adopted a Soil Erosion Control and Storm Water Runoff Management Ordinance.

The Town of Farmington has two (2) areas of immediate concern due to chronic riverbank erosion. (Cushman Drive and Whittier Road). Erosion at the two locations threatens a combined assessed property value of approximately \$681,000. If erosion continues, there is a possibility that the Town will also lose a significant portion of Whittier Road within the next five to seven years. Therefore, the goals and objectives to mitigate the damages from erosion are as follows:

Goal 3. Reduce damage, injury and loss of life in Farmington caused by erosion.

Objective 3.1 Lessen the future loss of life and personal injuries from erosion.

Objective 3.2 Reduce real and personal property damages caused by erosion.

Objective 3.3 Undertake activities to reduce the impact of erosion.

TOWN OF FARMINGTON HAZARD MITIGATION PLAN

B. IDENTIFICATION AND ANALYSIS OF MITIGATION MEASURES

Section 201(c)(3)(ii) requires that the Plan include a section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each significant hazard, with particular emphasis on planned and existing buildings and infrastructure.

The Farmington Hazard Mitigation Planning Team identified and analyzed hazard mitigation measures that would benefit the Town. The measures are broken out by Goals and Objectives for each significant hazard, and were analyzed using a matrix developed by the Florida Department of Community Affairs' entitled "The Local Mitigation Strategy", *A Guidebook for Florida Cities and Counties* and adapted for the Town of Farmington. See page 45.

Goal 1. Reduce damage, injury and loss of life in Farmington during and after a severe winter storm event.

Objective 1.1 Lessen the future loss of life and personal injury resulting from severe winter storms.

Measure 1.1.1 Educate the public on the dangers of severe winter storms:

- a. Heart stress when working in winter conditions
- b. Winter driving dangers
- c. Carbon monoxide poisoning from alternate heating sources
- d. Hypothermia

Measure 1.1.2 Encourage residents without heat to report to emergency shelters.

Measure 1.1.3 Encourage residents to keep primary and secondary egress routes cleared.

Measure 1.1.4 Develop procedures and provide training to locate and identify special health needs populations.

Measure 1.1.5 Clear and de-ice slippery roads during and/or soon after storm event.

Objective 1.2 Reduce real and personal property damages caused by severe winter storms.

Measure 1.2.1 Educate residents about winter storm preparations:

- a. Cutting large trees from around homes and driveways
- b. Freeze proofing water pipes in the home
- c. Cleaning rain gutters to prevent ice jams
- d. Keeping walkways and utility accesses cleared of snow
- e. Removing snow loads from roofs

Measure 1.2.2 Encourage homeowners to purchase insurance for winter storm damages

Measure 1.2.3 Develop Emergency Assistance Fund programs to help those affected.

Objective 1.3 Assure all emergency facilities have temporary backup power capabilities.

Measure 1.3.1 Provide generators at all critical facilities and utilities such as Fire/Police Stations, EMS garages, public works fueling points, water and sewage treatment plants, schools, and shelters.

Measure 1.3.2 Encourage homeowners to have generators, non-electric heating, or alternate energy sources, such as solar, wind or hydropower.

Measure 1.3.3 Develop and update an ordinance that would require any new public facilities to have a generator.

Objective 1.4 Assure prompt restoration of critical transportation links.

Measure 1.4.1 Implement a written municipal snow and ice removal operations plan that includes a prioritization of roads to be cleared.

Measure 1.4.2 Train and equip a quick-response Road Debris Clearance Team from public works, fire rescue department, and other agencies.

Measure 1.4.3 Develop mutual aid agreements with local ATV, snowmobile organizations, local ski area, and the University.

Measure 1.4.4 Update or develop the resources section in the Municipal Emergency Operations Plan with heavy equipment that could be used for snow removal.

Measure 1.4.5 Develop alternate transportation means for emergency responders.

Goal 2. Reduce damage, injury and loss of life in Farmington caused by flooding.

Objective 2.1 Lessen the future loss of life and personal injury resulting from flooding.

Measure 2.1.1 Educate drivers on risks of crossing flooded roadways.

Measure 2.1.2 Develop a "Barricade Plan" to block flooded roads in order to prevent crossing by vehicle operators. Acquire necessary barricade equipment and supplies.

Measure 2.1.3 Educate the public on staying away from flooded riverbanks.

Objective 2. 2. Reduce real and personal property damages caused by flooding.

Measure 2.2.1 Encourage homeowners to relocate, elevate, or retrofit homes in flood zones.

Measure 2.2.2 Relocate, elevate, or retrofit public facilities in flood zones.

Measure 2.2.3 Educate business owners to relocate, elevate, or retrofit business structures in flood zones.

Measure 2.2.4 Implement municipal floodplain ordinances.

Objective 2.3 Assure prompt restoration of critical transportation links.

Measure 2.3.1. Perform a Stormwater Analysis and develop a Stormwater Management Team.

Measure 2.3.2 Upgrade ditches, culverts and roadway drainage systems.

Measure 2.3.3 Construct erosion control measures to prevent destruction of roadways.

Measure 2.3.4 Elevate or relocate road surfaces.

Objective 2.4 Minimize damage to public and private drinking water supplies by flooding.

Measure 2.4.1 Flood-proof water treatment plants.

Measure 2.4.2 Inventory wellhead protection areas.

Goal 3. Reduce damage, injury and loss of life in Farmington caused by erosion.

Objective 3.1 Lessen the future loss of life and personal injury resulting from erosion.

Measure 3.1.1 Prepare and disseminate maps illustrating areas subject to significant erosion.

Measure 3.1.2 Educate residents on erosion control measures with the cooperation of State and Federal Agricultural Departments, Department of Conservation, Bureau of Forestry, and Department of Environmental Protection.

Measure 3.1.3 Continue to review and update Farmington's Floodplain Ordinance and Shoreland Zoning Ordinance.

Measure 3.1.4 Continue to control the impact of development and prevent future increases in erosion hazards through Farmington's Soil Erosion Control & Stormwater Runoff Management Ordinance and Zoning Ordinance.

Objective 3.2 Reduce real and personal property damages caused by erosion.

Measure 3.2.1 Continue the cooperative efforts between the residents, the Town, and state and federal agencies.

Measure 3.2.2 Continue to enforce and update the regulations/restrictions for any erosion prone areas.

Objective 3.3 Undertake activities to reduce the impact caused by erosion.

Measure 3.3.1 Deflect the river flow in areas where needed.

Measure 3.3.2 Install large boulder riprap, tacked gabion baskets, or other methods to stabilize river banks where needed.

Measure 3.3.3 Relocate road surfaces where needed.

Measure 3.3.4 Encourage homeowners to relocate or retrofit homes located in threatened areas.

TOWN OF FARMINGTON HAZARD MITIGATION PLAN
Mitigation Action Plan

Requirement 201.6 (c)(3)(iii) states that the mitigation strategy shall include an action plan describing how the actions identified in section (c)(3)(ii) will be prioritized, implemented, and administered by the local jurisdictions. Prioritization shall include a special emphasis on the extent to which benefits are maximized according to a cost benefit review of the proposed projects and their associated costs.

The Farmington Hazard Mitigation Planning Team used the matrix on page 45 as a quantified approach with pre-selected criteria. The population numbers, dollar values, and other quantified factors under each rank value were selected as appropriate to the size of Farmington. This matrix was used by comparing the proposed mitigation measure with each of the descriptions for each criteria category, and the “best fit” selected. The sum of the numbers selected under each criterion is totaled to derive the priority rank for the initiative. The higher the resulting number, the higher the priority of the initiative.

TOWN OF FARMINGTON HAZARD MITIGATION PLAN

Description of Rank Value

As previously explained, this matrix is used by comparing the proposed Measure with each of the descriptions for each criteria category, and the "best fit" selected. Then, the sum of the numbers selected under each criterion is totaled to derive the priority rank for the Measure.

Criteria Category	4	3	2	1	0
Population Benefited	Over 10,000	2,501 to 10,000	1,001 to 2,500	501 to 1,000	500
Percentage of Jurisdiction Benefited	76 to 100%	51 to 75%	26 to 50%	6 to 25%	Less than 5%
Health and Safety Considerations	Benefit several jurisdictions (over 10,000 people) and/or major portions of County population	Benefit between 2,501 and 10,000 people	Benefit between 1,001 and 2,500 people	Benefit less than 1,000 people	No anticipated benefit
Estimated Cost of Implementing the Initiative	No quantifiable cost	Less than \$50,000	Between \$50,000 and \$100,000	Between \$100,000 and \$1,000,000	Over \$1,000,000
Cost Impact of the Initiative	No quantifiable cost impact	Less than \$50,000	\$50,000 to \$100,000	\$100,000 to \$1,000,000	Over \$1,000,000
Benefit to Cost Ratio	More than +5.0	+4.0 to +4.9	+3.0 to +3.9	+2.0 to +2.9	+1.0 to +1.9
Probability of Community Acceptance	Likely to be endorsed by the entire community	Benefits only those directly affected and not adversely affecting others	Somewhat controversial with special interest groups or small % of community	Strongly opposed by special interest groups or significant % of community	Strongly opposed by most of general population
Probability of Funding	Potential funding sources not readily apparent	Only funding source is post-mitigation funds	Funding could be through matching local funds with others	Funding can probably be obtained through local long term budgeting	Funding can probably be obtained through local short term budgeting
Feasibility of Implementation	Relatively easy to put in place within a year	Not anticipated to be difficult	Somewhat difficult due to complex requirements	Difficult due to significantly complex requirements	Very difficult due to extremely difficult requirements
Consistency with other Plans and Programs	Initiative included in several other plans and programs	Initiative included in two other plans and programs	Initiative included in one other plan or program	Initiative not included in other plan or program	Initiative not consistent with other plans or programs

This matrix was adapted from the Florida Department of Community Affairs' "The Local Mitigation Strategy", *A Guidebook for Florida Cities and Counties.*

TOWN OF FARMINGTON HAZARD MITIGATION PLAN

Risk Identification

Hazard	Probability Yes/No	Frequency: Occurrence in the last ___ years			Intensity High/Med/ Low 3 - 2 - 1	Area Affected High/Med/Low 3 - 2 - 1	Comments
		5	10	20+			
Avalanche	No						
Blight/Infestation	Yes	0	1	1	1	1	
Bridge Collapse	Yes	0	0	1	3	2	
Civil Disorder (Manmade) HazMat							Refer to Franklin County HazMat Plan
Dam Failure	Yes	0	0	0	1	1	
Drought	Yes	3	3	5	1	1	
Earthquake	No	0	0	0	1	1	Per MEMA definition
Epidemic/Animals	No	0	0	0	1	1	
Invasive Aquatic Plants	Yes	0	0	0	1		
Erosion	Yes	*	*	*	3	2	
Localized Flooding							
Heavy Rain	Yes	1	1	4	1	1	
Ice Jam	Yes	3	5	8	2	2	
Rapid Snow Melt	Yes	0	0	1	3	3	
Hazardous Materials Incident (Manmade)							Refer to Franklin County HazMat Plan
Power Failure							
Communication	Yes	0	1	1	1	1	Per MEMA definition
Electricity	Yes	0	1	1	2	2	
Summer Storms/Severe	Yes	0	1	2	2	1	
Tornado	No	0	0	0	0	0	
Urban/Rural fires	Yes	0	0	0	1	1	500 Acre Standard per Fire Chief
Winter Storms/Severe (Ice, Wind, or Heavy Snow)							
Extreme Cold	Yes	2	0	1	2	3	
Ice Storm	Yes	1	3	6	2	3	
Snow Storm	Yes	3	6	12	2	3	24" in 12 Hours

PROBABILITY – RELEVANT TO THIS JURISDICTION

FREQUENCY - NUMBER OF OCCURRENCES PER UNIT OF TIME ON AVERAGE

INTENSITY and **AREA AFFECTED** rating provides a means to document and compare the impact.

The potential hazards listed above were taken from the Franklin County Emergency Management Agency Hazard Identification and Vulnerability Assessment for Franklin County.

The scoring process using the Risk Identification form will determine which hazards are a significant risk to the Town of Farmington and will require further consideration and prioritization for the Town's Hazard Mitigation Plan. The individual ratings from Area Affected, Intensity and Frequency will be transferred to the Prioritizing Risks form for final analysis.

* Erosion has unique characteristics that are not applicable to the formula. The Farmington Hazard Mitigation Planning Team assessed the affected areas and determined that Erosion is a "significant" risk. See narrative page 14.

**TOWN OF FARMINGTON HAZARD MITIGATION PLAN
HAZARD RANKING PROCESS**

Potential Hazards (as determined by Risk Identification)

<u>Intensity and Area</u>	<u>Frequency</u>
1 - Low	1 - <1-3
2 - Medium	2 - 3-5
3 - High	3 - 6-9
	4 - 10>

HAZARD	Intensity 1-4	Area Affected 1-4	Frequency 1-4 (Calculate using average)	(Area + Intensity) x Frequency = Score
Avalanche	0	0	0	0
Blight/Infestation	1	1	1	2
Bridge Collapse	3	2	1	5
Dam Failure	1	1	0	0
Drought	1	1	3	6
Earthquake	1	1	0	0
Epidemic	1	1	0	0
Invasive Aquatic Plants	1	1	0	0
Erosion	3	2	*	*
Localized Flooding				
Heavy Rain	1	1	2	4
Ice Jam	2	2	2	8
Rapid Snow Melt	3	3	1	6
Power Failure				
Communication	1	1	1	2
Electricity	2	2	1	4
Summer Storms/ Severe	2	1	1	3
Tornado	0	0	0	0
Urban/Rural Fires	1	1	0	0
Winter Storms/Severe				
Extreme Cold	2	3	1	5
Ice Storm	2	3	2	10
Snow Storm	2	3	3	15

* Erosion has unique characteristics that are not applicable to the formula. See narrative page 14.

**TOWN OF FARMINGTON HAZARD MITIGATION PLAN
RISK ASSESSMENT
Prioritizing Risks**

HAZARD	INTENSITY	AREA	FREQUENCY	SCORE
Example: Tornado	4	3	2	(4+3) x 2 = 14
1. Severe Winter Storms (avg)	2	3	3	15
2. Flooding (avg)	2	2	3	12
3. Erosion	3	2	*	*
4. Drought	1	1	3	6
5. Bridge Collapse	3	2	1	5
6. Power Failure	2	2	1	4
7. Summer Storms/Severe	2	1	1	3
8. Blight Infestation	1	1	1	2
9. Dam Failure	1	1	0	0
10. Earthquake	1	1	0	0
11. Epidemic	1	1	0	0
12. Invasive Aquatic Plants	1	1	0	0
13. Urban/Rural Fires	1	1	0	0
14. Avalanche	0	0	0	0
15. Tornado	0	0	0	0

* Erosion has unique characteristics that are not applicable to the formula. The Farmington Hazard Mitigation Planning Team assessed the affected areas and determined that Erosion is a “significant” risk. See narrative page 14.

Prioritization Formula: (Area + Intensity) x Frequency = Score

Using the Risk Identification, Hazard Ranking Process, and Priority Assessment, it has been determined that the following hazards are a significant risk to the Town of Farmington and will be profiled in the Hazard Mitigation Plan. Other hazards may be addressed in future updates. Manmade hazards are not addressed in this Plan. Please refer to the Franklin County HazMat Plan.

1. Winter Storms/Severe
2. Flooding
3. Erosion

The following Table identifies the natural hazards to be profiled in the Town of Farmington Hazard Mitigation Plan.

Hazard	How Identified	Why Identified	Vulnerability
Winter Storms/ Severe	Review of past disaster declarations Input from residents Review of NOAA information	Maine is frequently hit with major “Nor’easter” storms and blizzards and is often subject to ice storms.	High
Flooding	Review of FIRM Maps Input from residents Review of past disaster declarations Identification of repetitive losses	Associated with the effects of spring runoff, ice jams and heavy rain. The Sandy River flows through the middle of Town and several areas experience flooding during spring thaw.	High
Erosion	Review of FIRM Maps Input from residents Input from Army Corps of Engineers Input from NRCS Input from Maine DEP	History of chronic river erosion threatening properties and resulting in relocation.	High

Table of Mitigation Strategy Severe Winter Storms

Table of Mitigation Strategy Flooding

Table of Mitigation Strategy Erosion

TOWN OF FARMINGTON HAZARD MITIGATION PLAN

Hazard Mitigation Measures Prioritized

The Town of Farmington Hazard Mitigation Planning Team rated the following mitigation measure projects (in priority order) as the top priorities for the following hazards:

SEVERE WINTER STORMS MITIGATION MEASURES

1. Develop mutual aid agreements with local ATV and snowmobile organizations, local ski area, and the university.
2. Encourage residents to keep primary and secondary egress routes cleared.
2. Encourage homeowners to have generators, non-electrical heating, or alternate energy sources, such as solar, wind, or hydropower.
2. Develop alternate transportation means for emergency responders.
3. Educate the public on the dangers of severe winter storms, such as: heart stress when working in winter conditions, winter driving dangers, carbon-monoxide poisoning from alternate heating sources, hypothermia.
3. Educate residents about winter storm preparations, such as: cutting trees from around homes and driveways, freeze-proofing water pipes in the home, cleaning rain gutters to prevent ice jams, keeping walkways cleared of snow, and removing snow loads from roofs.
3. Train and equip a quick response Road Debris Clearance Team from public works, fire rescue department, and other agencies.
4. Encourage residents without heat to report to emergency shelters.
4. Implement a written municipal road snow and ice removal operations plan that includes a prioritization of roads to be cleared.
5. Deice slippery roads during or soon after storm event.
5. Update or develop the resources section in the Municipal Emergency Operations Plan with heavy equipment that could be used for snow removal.
6. Provide generators at all critical facilities and utilities such as Fire Rescue Stations, EMS garages, public works fueling points, water and sewer treatment plants, schools, and shelters.
7. Develop Emergency Assistance Fund programs to help those affected.
8. Develop procedures and provide training to locate and identify special needs populations.
8. Encourage homeowners to purchase insurance for winter storm damages.

9. Develop and update an ordinance to require new public facilities to have generators.

FLOODING MITIGATION MEASURES

1. Inventory wellhead protection areas.
2. Educate drivers on risks of crossing flooded roadways.
2. Educate the public on staying away from flooded riverbanks.
3. Develop a “Barricade Plan” to block flooded roads and acquire necessary barricade equipment.
4. Construct erosion control measures to prevent destruction of roadways.
5. Perform and develop a Storm Water Analysis and Stormwater Management Plan.
6. Flood-proof water treatment plants.
7. Implement municipal floodplain ordinances.
7. Upgrade ditches, culverts and roadway drainage systems.
8. Elevate or relocate road surfaces.
9. Encourage homeowners to relocate, elevate, or retrofit homes in flood zones.
9. Educate business owners to relocate, elevate, or retrofit business structures.
9. Relocate, elevate, or retrofit public facilities in flood zones.

EROSION MITIGATION MEASURES

1. Continue to review and update Farmington’s Floodplain Ordinance and Shoreland Zoning Ordinance.
2. Continue to control the impact of development and prevent future increases in this hazard through Farmington’s Soil Erosion Control and Stormwater Runoff Management Ordinance and the Town of Farmington Zoning Ordinance.
2. Educate residents on erosion control measures, with the cooperation of State and Federal Agricultural Departments, Department of Conservation, Bureau of Forestry, and Department of Environmental Protection.
3. Continue to enforce and update the regulations/restrictions for any erosion prone areas.
4. Continue the cooperative efforts between the affected residents, the Town, and State and Federal agencies.
5. Relocate road surfaces where needed.

6. Prepare and disseminate maps illustrating areas subject to significant erosion.
6. Deflect the river flow in areas where needed.
7. Encourage homeowners to relocate or retrofit homes located in threatened areas.
8. Install large boulder riprap, tacked gabion baskets, or other methods to stabilize river banks where needed.

TOWN OF FARMINGTON HAZARD MITIGATION PLAN

VIII. PLAN MAINTENANCE PROCEDURES

The Disaster Mitigation Act stipulates that not only must localities develop Hazard Mitigation Plans; they must also take steps to ensure that these Plans get implemented and updated as needed. It is therefore necessary to include procedures for maintaining and updating the Plan. This section outlines the various Plan Maintenance Procedures for the Farmington Hazard Mitigation Plan.

The Town of Farmington Fire Rescue Chief (FRC) in conjunction with the Farmington Public Works Director (PWD) shall operate under the auspices of the Farmington Board of Selectmen as the principal agents for the implementation of this Plan. To the degree practicable, the FRC and PWD shall coordinate with the Local Hazard Mitigation Team in the implementation of initiatives pursuant to this Plan. The FRC and PWD shall pursue the apprehension, development and coordination of all resources identified in this Plan, or other useful resources, toward the implementation of the Plan's Mitigation Actions.

A. PLAN MAINTENANCE

The Farmington FRC and PWD and the Hazard Mitigation Team shall assure maintenance of this Plan and shall consider and submit such projects for funding under FEMA's Hazard Mitigation Grant Program and other State and Federal funding streams in accordance with the Plan.

B. PLAN REVIEW

This Plan shall be reviewed in accordance with the schedule for review at least annually or, pursuant to a Presidential Disaster Declaration involving the Town of Farmington. A declaration of an emergency by the Governor of the State or by the Local EMA shall also trigger a review of this Plan by the FRC and the PWD and the Farmington Hazard Mitigation Team.

The process for review shall be the responsibility of the Farmington FRC and shall consist of convening the Farmington Hazard Mitigation Planning Team or individual Plan contributors as practical. From the discussion at said meeting(s), the Farmington FRC and PWD shall issue a report within thirty (30) days of any such meeting. The Farmington FRC and PWD shall submit this report to the Board of Selectmen and make copies available to the public at the Municipal Building during normal business hours.

Such recommendations for Plan amendment(s) and all Hazard Mitigation Team comments shall be forwarded to the Farmington Board of Selectmen for consideration and Plan amendment approval.

Any Section of the Plan that is recommended for amendment(s) by the FRC and PWD, Hazard Mitigation Team or the Board of Selectmen, shall be forwarded to the Maine Emergency Management Agency State Hazard Mitigation Officer (MEMAO) for courtesy review and comment. The MEMA Officer shall provide comment on the proposed change(s)' conformity with the State Hazard Mitigation Plan.

The amended Plan shall also be forwarded to the FEMA Region/FMA Officer for review.

Since the Town of Farmington is a CRS participant, the Final Plan shall be forwarded for Plan content and CRS status review to the Insurance Services Office Inc. Agent servicing Maine.

C. FUTURE ENHANCEMENT

The Farmington FRC and PWD and the Farmington Hazard Mitigation Planning Team shall continue to study the impact of hazard events upon the Town's citizens and guests as well as on its structures, infrastructure, critical facilities, agriculture, aquaculture, forests, ecology, economy (e.g. tourism industry, forest products, etc.) historical treasures, and quality of life, and shall endeavor to develop cost effective strategies and Plan amendments to mitigate losses associated with hazard events.

The Farmington FRC and PWD and the Hazard Mitigation Team shall monitor all trends affecting hazards and their effects, and shall endeavor to develop such additional appropriate and cost effective hazard mitigation strategies, projects, and programs as may be consistent with the objectives of this Plan.

D. PLAN ADOPTION

A public informational meeting shall be conducted. Notification of the meeting shall be posted and advertised in a newspaper of general circulation in the municipality at least seven (7) days prior to the meeting. A copy of the Hazard Mitigation Plan will be available at the Municipal Building, located at 153 Farmington Falls Road, Farmington, during normal working hours and at the informational meeting.

In adopting this plan, the Board hereby authorizes the Farmington Emergency Management Director to act in concert with the members of the Farmington Hazard Mitigation Team to pursue program and project development, and management of any such programs and projects in accordance with this Plan.

It is understood that the Farmington Board of Selectmen maintains all authority to approve and forward all grant application requests made pursuant to this plan, and shall maintain ultimate supervision authority over any and all programs, projects or other initiatives undertaken pursuant to this Plan.

On November 9, 2004, the Farmington Board of Selectmen, having reviewed this Plan, voted by a majority of its members to adopt this Plan as the guidance to be followed toward the mitigation of the effects of hazard events that impact the community.

This Plan is hereby adopted by the Farmington Board of Selectmen.

This Plan shall be submitted to the Federal Emergency management Agency, the Maine Emergency Management Agency, and the Franklin County Emergency Management Agency upon its adoption.

The Selectmen hereby charge the Farmington Emergency Management Director to issue a report within thirty (30) days of his annual review of this Plan. Such report shall set forth the status of review of all programs and projects initiated pursuant to this Plan and shall characterize the status of identified projects and programs that have not yet been undertaken.

E. IMPLEMENTATION THROUGH EXISTING PROGRAMS

The Town of Farmington, with a population of 7,410, governs with municipal “Home Rule” Ordinances. A small number of Measures included in Farmington’s Hazard Mitigation Plan refer to the review, implementation, and/or the update of existing ordinances. The majority of the Measures that were identified are structural, educational, or emergency planning Measures.

For any implementation of these Measures to occur, the education process must be conducted not just with public officials, but also with the public at large. If the Board of Selectmen votes to endorse a Measure that results in amending an ordinance, but the majority of the Town’s citizens disagree with them, it does not pass. Due to the fact that it is the public, and not just local officials, who must approve some of the hazard mitigation initiatives, the most important element of implementing this Plan is educating the public.

Farmington will have the opportunity to implement the adopted mitigation strategy in the course of reviewing/updating/revising the Comprehensive Plan and Town ordinances. The Town’s ordinance review process offers opportunities to inform the residents, Planning Board, Board of Appeals, and Zoning Board, and also provides opportunities for the Code Enforcement Officer to educate the board members about the importance of hazard mitigation and about the ways in which mitigation activities can be conducted. Farmington’s continued collaboration with the Maine State Planning Office and the regional planning staff, Androscoggin County Valley Council of Governments (AVCOG), will help ensure that the Plan’s recommendations are implemented.

After adoption and FEMA approval of Farmington’s Mitigation Plan, the Town will coordinate with the Franklin County EMA in conducting annual reviews and surveys with the municipal officers, and Planning Team members to measure the progress of their Hazard Mitigation Plan. Existing programs such as the Municipal Road Maintenance Plan, the Franklin County Emergency Management program, and Farmington Fire Rescue programs will be utilized to their greatest extent to complete the community’s mitigation Measures.

F. CONTINUED PUBLIC INVOLVEMENT

Farmington is dedicated to involving the public directly in the continual updating of the Hazard Mitigation Plan. The Town will make every effort to encourage public participation in the Hazard Mitigation Plan review process by posting the meeting on the Town’s website www.farmington-maine.org, publishing a public notice in a newspaper of general circulation, posting public notices in three areas of the Municipal Building, and airing the information on Mt. Blue local access television Channel 11.

TOWN OF FARMINGTON HAZARD MITIGATION PLAN

APPENDIX

Recommended Mitigation Projects

Prioritized Mitigation Projects Cost Estimate

Meeting Chronology

Planning Participation Sign In Sheets

Press Release

BOS/Public Hearing Minutes 2003 - 2004

Natural Hazards Appendix - Franklin County EMA

Overview of Natural Disasters – FEMA

500-Year Floodplain Structures

Flood Damage Brochure

Report on ACOE Meeting

Base Map of Farmington

Floodplain Map of Farmington

Critical Facilities Map of Farmington

TOWN OF FARMINGTON HAZARD MITIGATION PLAN
MITIGATION ACTION CHART
Recommended Mitigation Projects

The Town has assessed previous severe winter storm, flooding, erosion, and other natural hazard events and recommends the following actions:

- Undertake corrective measures to public infrastructure suffering repeated damage from localized flooding in accordance with model construction practices and technologies recommended by the Federal Emergency Management Agency (FEMA).
- Invest in GIS hardware, software, and training to allow the Town of Farmington to better manage flooding hazards.
- Land use planning and development standards are important components in the reduction of potential losses from natural hazards and disaster. While early development patterns such as building in floodplains and structures designed with inadequate snow loads require long-term solutions, new development can be located and designed to minimize the risk from many natural hazards. Maine requires each municipality to adopt a shoreland zoning ordinance for land within 250' of the high water mark of coastlines, rivers, non-forested wetlands and lakes and ponds greater than ten acres in size, and within 75' of the high water mark of most other streams. While these ordinances were designed primarily for water quality protection, they do have a significant impact on the types of development and redevelopment which can occur in floodplains.
- The Code Enforcement Officer will continue to review Site Review, Soil Erosion Control & Storm Water Runoff Management, Shoreland Zoning, and Floodplain Applications for all proposed construction to ensure that structures will be reasonably free from flooding and groundwater problems, and do not encroach into the natural flood plain.

Site	History	Project
Whittier Road	In past years, flooding has caused erosion of the riverbank adjacent to the Whittier Road in the vicinity of Route 156. Previously, a house in this area was relocated due to river erosion. If this erosion continues, there is a good possibility that the Town will lose a significant portion of Whittier Road within the next five to seven years.	Install heavy riprap to stop erosion.
Cushman Drive	Chronic riverbank erosion is affecting a number of Cushman Drive residences.	Deflect the river flow that is undermining the bank and permanently stabilize the bank with large boulder riprap, tacked gabion baskets, or some other method. Continue the cooperative effort between the affected residents, the Town, and several State (and possibly federal) entities.
Front Street	On most occasions, two or more inches of rain will cause this road to flood.	Raise Front Street approximately five feet in the lowest area to avoid flooding.
Clover Mill Road	Two or more inches of rain cause this road to flood. It is located in close proximity to the Temple Stream. On several occasions this road has flooded and the shoulders have washed out. There is a house located on the stream side of the road, and history demonstrates it is situated high enough in elevation to avoid flooding.	Build up the road approximately four feet and install erosion control and a culvert upgrade, keeping in mind the area across the road will be flooded by water backing up the larger culvert.
Davis Road	Two major washouts have occurred in this area (1987 and 1999), both due to plugged culverts.	The ditch was rip rapped at that time, and the Town continues its effort to keep the culverts free of debris.

Cowen Hill Road	Heavy rain has caused this road to wash out frequently. After the flood of 1987, FEMA issued onsite mitigation funding, which the Town used to install five more culverts and riprap the entire ditch. No major damage has occurred since then.	Maintain this road as directed by the Farmington Public Works Department.
Prescott Street	The only event to cause flooding on this street was the flood of 1987 (a 500-year flood). No damage occurred.	The Town will evaluate the effects of flooding on this street and will recommend improvements.
Beaver Brook/Rollo Pond	The erosion in Rollo Pond is not entirely from Beaver Brook. Approximately 80% of the erosion originates from an area that drains off High Street, somewhere around Stewart Avenue. The Maine Department of Transportation (MDOT) installed a drainage pipe in this area in 1993-94.	Reshape the drainage ditch and install erosion control and heavy riprap to stop the erosion.
Mosher Hill/Voter Hill Roads	During a significant snow event with heavy winds, these areas are subject to substantial drifting.	Plant some tree growth in areas approximately thirty feet from the edge of the road.
Treatment Plant Access Road	This road washed out during the flood of 1987.	Raise this road three feet, install a larger culvert, and support both sides with riprap.
West Farmington & Lake Avenue – Pump Stations	During the flood of 1987, the West Farmington pump station was completely flooded and the roto-phase at the Lake Avenue pump station was flooded.	Raise the neck of this pump station above the 100-year flood mark.
Morrison Hill Bridge river crossing pipeline	This pipeline came apart in the flood of 1987. It was repaired using replacement materials - currently needs strengthening.	Cradle, reinforce, and strengthen the crib work used to support the pipe.
Pump Stations	The pump stations froze in the extreme cold weather during the winter of 2002-03. There were four compressor failures.	Insulate the pumps or construct a heated wooden building to house these pumps.
Sewer Services	During the severe cold winter of 2002-03 many sewer services plugged and froze due to ponding in pipes.	Recommend homeowners replace pipes with PVC.
Farmington Falls Road (French's Flat)	During the flood of 1987, residents had to be evacuated by boat.	This is a State maintained road; therefore, this comment is for reference only. However, the Town recommends reconfiguring the road to avoid stranding residents.
Route 2 – Farmington Falls	Route 2 forms a dike containing the Sandy River at Farmington Falls. In looking at the flood maps it appears that the limit of the floodplain approaches very close to Route 2 near the town line with New Sharon, and possibly further along in New Sharon.	This is a State maintained road; therefore, this comment is for reference only. The Town recommends that the Maine Department of Transportation (MDOT) do a comprehensive study pertaining to this area.

Project Cost Estimated by James Bruni, FEMA

Project	Cost
Whittier Road	\$ 170,000
Cushman Drive	\$ 291,000
Front Street	\$ 38,500
Clover Mill Road	\$ 63,800
Davis Road	Maintain
Cowen Hill Road	Maintain
Prescott Street	Evaluate
Beaver Brook/Rollo Pond	Completed
Mosher Hill/Voter Hill	\$ 15,000
Treatment Plant Access Road	\$ 12,687
West Farmington/Lake Avenue Pump Stations	\$ 10,000
Morrison Hill Crossing Pipeline	Completed
Pump Station #2 and #4	\$ 15,000

TOWN OF FARMINGTON HAZARD MITIGATION PLAN

MITIGATION GOALS

The Town has assessed previous flooding, erosion, and other hazard events and recommends the following actions:

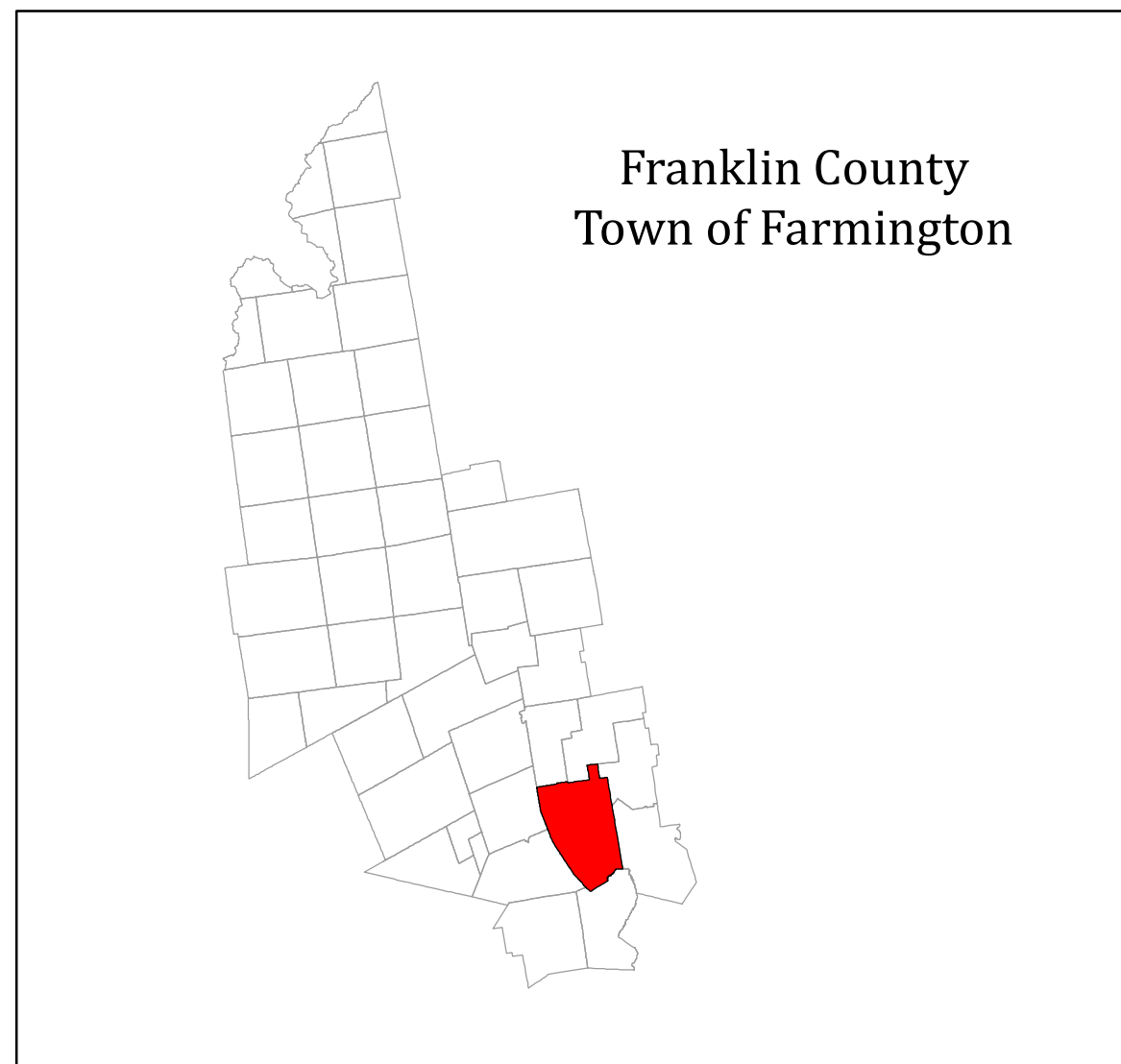
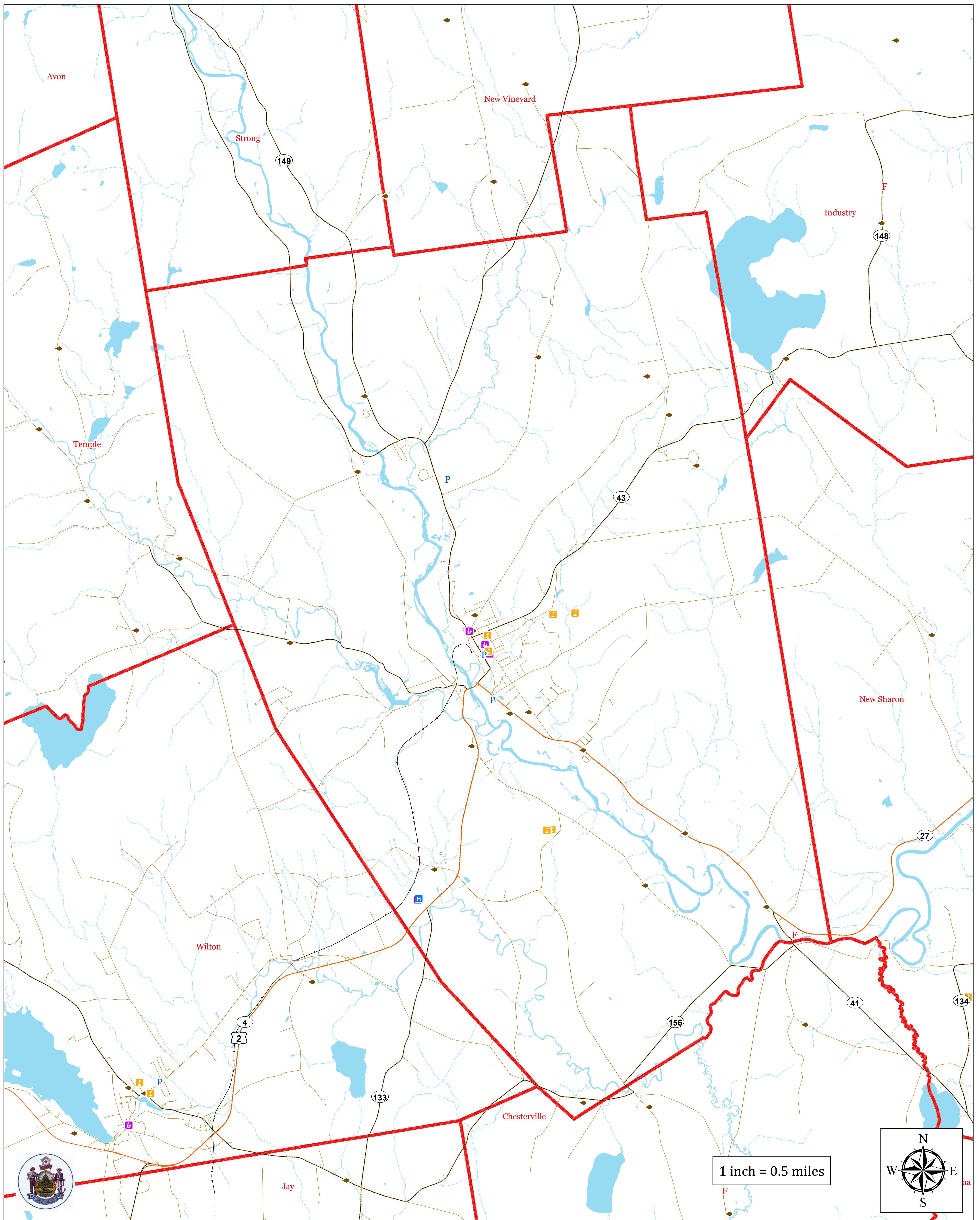
- Undertake corrective measures to public infrastructure suffering repeated damage from localized flooding in accordance with model construction practices and technologies recommended by the Federal Emergency Management Agency (FEMA).
- Invest in GIS hardware, software, and training to allow the Town of Farmington to better manage flooding hazards.
- Land use planning and development standards are important components in the reduction of potential losses from natural hazards and disaster. While early development patterns such as building in floodplains and structures designed with inadequate snow loads require long-term solutions, new development can be located and designed to minimize the risk from many natural hazards. Maine requires each municipality to adopt a shoreland zoning ordinance for land within 250' of the high water mark of coastlines, rivers, non-forested wetlands and lakes and ponds greater than ten acres in size, and within 75' of the high water mark of most other streams. While these ordinances were designed primarily for water quality protection, they do have a significant impact on the types of development and redevelopment which can occur in floodplains.
- The Code Enforcement Officer will continue to review Site Review Applications for all proposed construction to ensure that structures will be reasonably free from flooding and groundwater problems, and do not encroach into the natural flood plain.

Location	History	Goal
Whittier Road 44° 36.983 N 070° 05.372 W	In past years, flooding has caused erosion of the riverbank adjacent to the Whittier Road in the vicinity of Route 156. Previously, a house in this area was relocated due to river erosion. If this erosion continues, there is a good possibility that the Town will lose a significant portion of Whittier Road within the next five to seven years.	Install heavy-duty riprap to stop erosion.
Cushman Drive 44° 42.435 N 070° 10.647 W	Chronic riverbank erosion is affecting a number of Cushman Drive residences.	Deflect the river flow that is undermining the bank and permanently stabilize the bank with large boulder riprap, tacked gabion baskets, or some other method. Continue the cooperative effort between the affected residents, the Town, and several State (and possibly federal) entities.
Front Street 44° 39.929 N 070° 08.921 W	On most occasions, two or more inches of rain will cause this road to flood.	Raise Front Street approximately five feet in the lowest area to avoid flooding.
Clover Mill Road 44° 40.428 N 070° 11.000 W	Two or more inches of rain cause this road to flood. It is located in close proximity to the Temple Stream. On several occasions this road has flooded and the shoulders have washed out. There is a house located on the stream side of the road, and history demonstrates it is situated high enough in elevation to avoid flooding.	Build up the road approximately four feet and install erosion control and a culvert upgrade, keeping in mind the area across the road will be flooded by water backing up the larger culvert.

Davis Road 44° 39.630 N 070° 07.208 W	Two major washouts have occurred in this area (1987 and 1999), both due to plugged culverts.	The ditch was rip rapped at that time, and the Town continues its effort to keep the culverts free of debris.
Cowen Hill Road 44° 43.243 N 070° 09.684 W	Heavy rain has caused this road to wash out frequently. After the flood of 1987, FEMA issued onsite mitigation funding, which the Town used to install five more culverts and rip rap the entire ditch. No major damage has occurred since then.	Maintain this road as directed by the Farmington Public Works Department.
Prescott Street 44° 39.879 N 070° 08.778 W	The only event to cause flooding on this street was the flood of 1987 (a 500-year flood). No damage occurred.	The Town will evaluate the effects of flooding on this street and will recommend improvements.
Beaver Brook/Rollo Pond 44° 39.892 N 070° 08.786 W	The erosion in Rollo Pond is not entirely from Beaver Brook. Approximately 80% of the erosion originates from an area that drains off High Street, somewhere around Stewart Avenue. The Maine Department of Transportation (MDOT) installed a drainage pipe in this area in 1993-94.	Reshape the drainage ditch and install erosion control and heavy riprap to stop the erosion.
Mosher Hill/ Voter Hill Roads V-44° 39.517 N 070° 11.452 W M-44° 43.279N 070° 06.501 W	During a significant snow event with heavy winds, these areas are subject to substantial drifting.	Plant some tree growth in areas approximately thirty feet from the edge of the road.
Treatment Plant Access Road 44° 39.311 N 070° 08.369 W	This road washed out during the flood of 1987.	Raise this road three feet, install a larger culvert, and support both sides with riprap.
West Farmington & Lake Avenue – Pump Stations WF - 44° 39.443 N 070° 09.179 W Lake Ave. 44° 40.043 N 070° 08.546W	During the flood of 1987, the West Farmington pump station was completely flooded and the roto-phase at the Lake Avenue pump station was flooded.	Raise the neck of this pump station above the 100-year flood mark.
Morrison Hill Bridge river crossing pipeline 44° 39.647 N 070° 09.792W	This pipeline came apart in the flood of 1987. It was repaired using replacement materials - currently needs strengthening.	Cradle, reinforce, and strengthen the crib work used to support the pipe.
Pump Stations #2 - 44° 38.534 N 070° 09.118 W #4 - 44° 37.742 N 070° 09.295W	The pump stations froze in the extreme cold weather during the winter of 2002-03. There were four compressor failures.	Insulate the pumps or construct a heated wooden building to house these pumps.
Sewer Services Entire Service area	During the severe cold winter of 2002-03 many sewer services plugged and froze due to ponding in pipes.	Recommend homeowners replace pipes with PVC.
Farmington Falls Road (French's Flat) Town of Farmington Tax Map R6 - 18D	During the flood of 1987, residents had to be evacuated by boat.	This is a State maintained road; therefore, this comment is for reference only. However, the Town recommends reconfiguring the road to avoid stranding residents.
Route 2 – Farmington Falls Town of Farmington Tax Map U1	Route 2 forms a dike containing the Sandy River at Farmington Falls. In looking at the flood maps it appears that the limit of the floodplain approaches very close to Route 2 near the town line with New Sharon, and possibly further along in New Sharon.	This is a State maintained road; therefore, this comment is for reference only. The Town recommends that the Maine Department of Transportation (MDOT) do a comprehensive study pertaining to this area.

**Town of Farmington Hazard Mitigation Plan
500-year Floodplain Structures
2004**

Address	Map & Lot #	Manufactured Home Assessed Value	Residential Assessed Value	Non-Residential Assessed Value	Notes
197 Webster Road	R4-19		88,000		
116 Earl Road	R4-20-L		6,600		
211 Lucy Knowles Road	R2-30		28,300		
422 Lucy Knowles Road	R2-26	18,100			
420 Industry Road	R11-15-02	17,000			
430 Industry Road	R11-15-03		55,300		
419 Industry Road	R11-15-B-on	5,600			
425 Industry Road	R11-16		38,200		
105 Skunk Hollow Road	R11-17	3,700			
466 Industry Road	R11-18	15,600			
471 Industry Road	R11-21		37,300		
474 Industry Road	R11-22	18,100			
114 Prescott Street	U14-12		66,800		
120 Prescott Street	U14-13		66,000		
122 Prescott Street	U14-14		37,200		
132 Prescott Street	U14-16		35,900		
138 Prescott Street	U14-18		34,400		
140 Prescott Street	U14-19		49,200		
142 Prescott Street	U14-20		71,700		
147 Prescott Street	U14-30		37,100		
133 Prescott Street	U14-32		40,200		
306 Main Street	U14-33			119,200	Hippach Field
135 Corn Shop Lane	U14-37		26,300		
140 Corn Shop Lane	U14-38		1,100		
321 Main Street	U14-42			105,500	
313 Main Street	U14-43			84,200	
317 Main Street	U14-43-A			71,500	
309 Main Street	U14-44			192,300	
303 Main Street	U14-44-A			452,800	
283 Front Street	U14-44-B			37,300	
293 Main Street	U14-48			75,600	
289 Main Street	U14-49			101,000	
654 Farmington Falls Road	R6-12	12,877		21,800	
692 Farmington Falls Road	R6-12-A			9,300	
664 Farmington Falls Road	R6-14		48,300		
680 Farmington Falls Road	R6-16			44,400	
698 Farmington Falls Road	R6-17-on	6,900			
721 Farmington Falls Road	R6-18-A		78,200		
731 Farmington Falls Road	R6-18-D		83,600		
743 Farmington Falls Road	R6-19-A			13,300	
1139 Farmington Falls Road	U01-17		47,200		
1127 Farmington Falls Road	U01-18		26,500		
139 Philbrick Street	U01-20-on	3,100			
129 Philbrick Street	U01-21		43,100		
164 Croswell Road	U01-28		78,600		
114 Philbrick Street	U01-37			40,400	
120 Philbrick Street	U01-39		52,800		
132 Philbrick Street	U01-40		22,200		
113 Clark Lane	U02-01-C		25,900		
1060 Farmington Falls Road	U02-3-A			213,400	
112 Mason Road	U02-06		3,900		
114 Croswell Road	U02-07		21,900		
122 Croswell Road	U02-08			100,000	
107 Mason Road	U02-09			26,700	
136 Croswell Road	U02-10		41,000		
144 Croswell Road	U02-11	34,600			
146 Croswell Road	U02-12		28,400		
150 Croswell Road	U02-13		42,700		
152 Croswell Road	U02-14		55,500		
154 Croswell Road	U02-15		47,600		
158 Croswell Road	U02-16		35,900		
162 Croswell Road	U02-17		42,500		
145 Croswell Road	U02-22		60,900		
139 Croswell Road	U02-23		127,400		
133 Croswell Road	U02-23-A		45,200		
125 Croswell Road	U02-24		81,500		
103 Bridge Street	U29-01		12,700		
105 Bridge Street	U29-02			35,200	
107 Bridge Street	U29-02A			93,600	
107 Churchill Lane	U29-03 on 2	14,000			
111 Churchill Lane	U29-03-on 1	24,000			
137 Morrison Hill Road	U30-22		82,100		
112 Morrison Hill Road	U30-12			133,500	
144 Wilton Road	U31-31		44,900		
148 Wilton Road	U31-32		39,900		
156 Wilton Road	U31-33		71,800		
160 Wilton Road	U31-34		118,500		
107 Wilton Road	U31-37			63,900	
171 Wilton Road	U31-39		69,900		
163 Wilton Road	U31-40			95,000	
161 Wilton Road	U31-40-A			102,100	
157 Wilton Road	U31-42			103,500	
149 Wilton Road	U31-43		28,000		
605 Wilton Road	U37-19-A			214,400	
TOTALS		(12) 173,577	(48) 2,328,200	(25) 2,549,900	
AV / Sales Ratio Est. 100% Fair Market Value (FMV)		(12) 216,971	(48) 2,910,250	(25) 3,187,375	



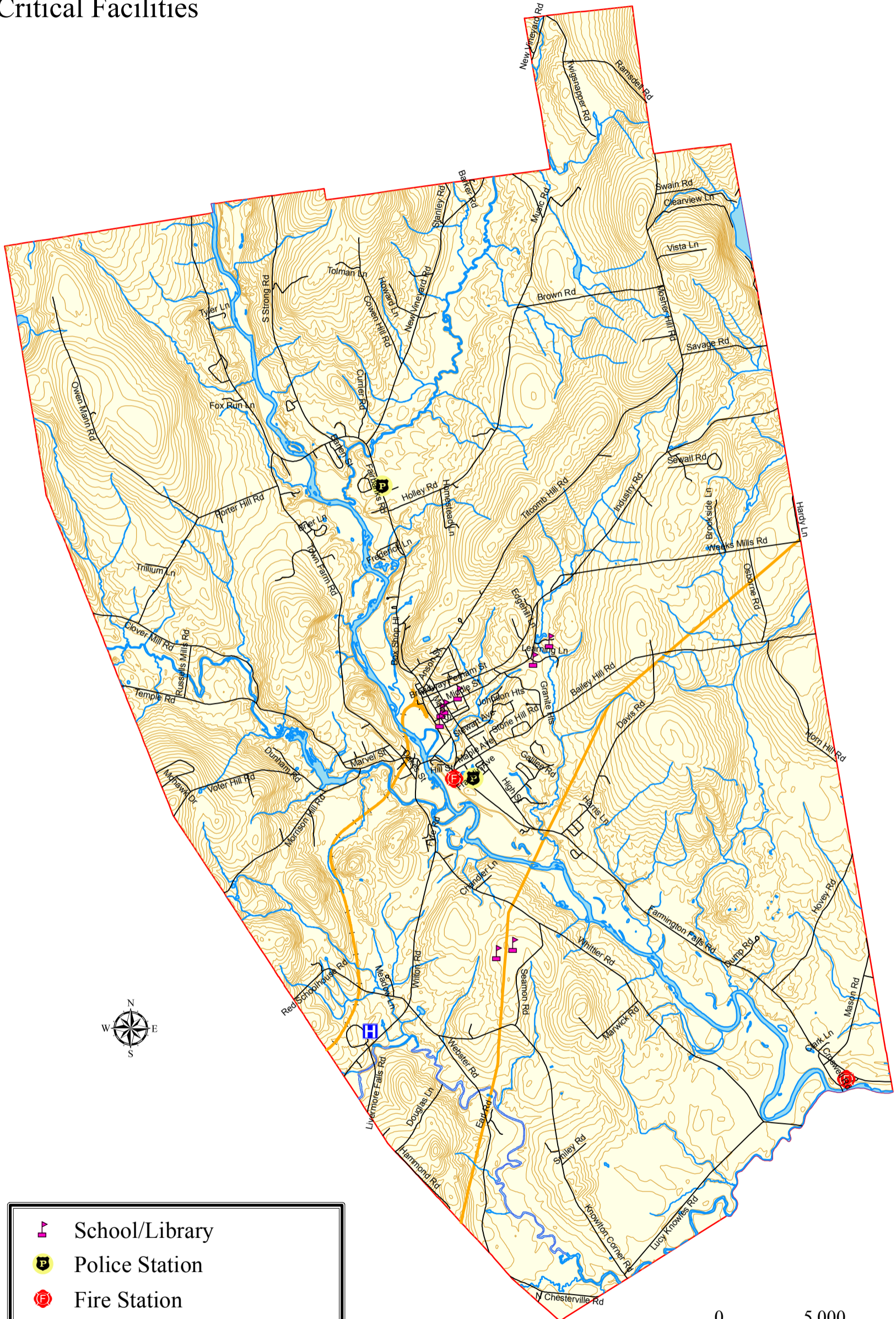
Town of Farmington Infrastructure






Source data: USDA, MEGIS, Maine DACF
 Projection: UTM, NAD83, Zone 19, Meters
 Produced by: Municipal Planning
 Assistance Program, DACF
 May 2013

Legend	
	Police Station
	Fire Station
	Hospital
	School
	Library
	Cemetery
	Private Airport
	Public Airport
	Public Roads
	Railroads
	Municipal Border
	Waterbody

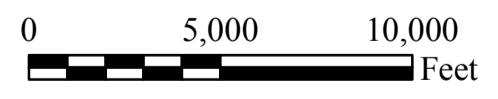
Farmington, Maine

Critical Facilities

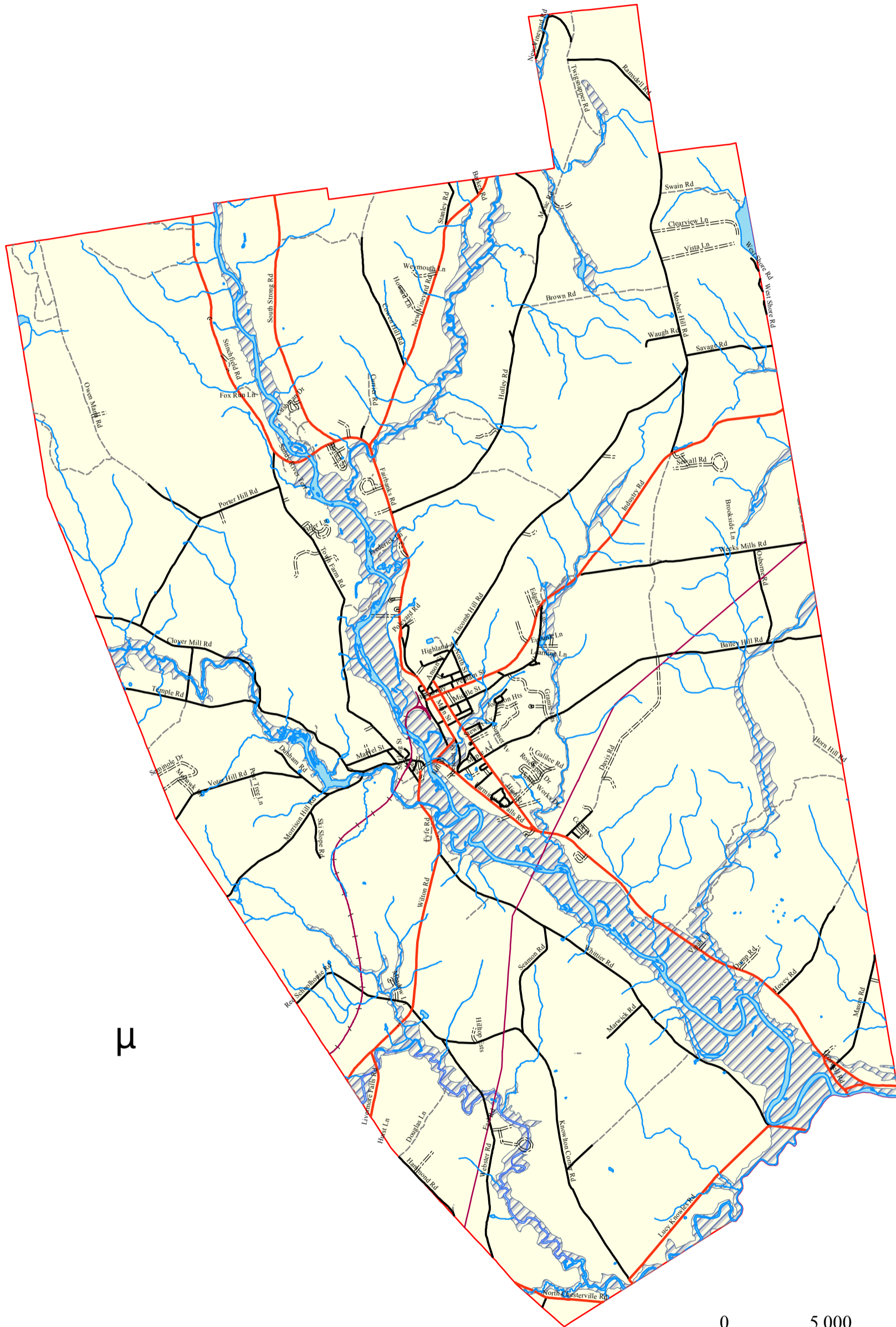


-  School/Library
-  Police Station
-  Fire Station
-  Hospital
-  Next Generation 911 Roads

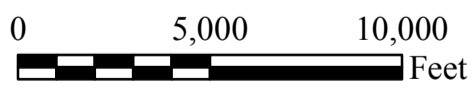
July 2014



Farmington, Maine



North Arrow



 100 Year Floodplain

