TOWN OF KENSINGTON, NH

HAZARD MITIGATION PLAN UPDATE 2013

Approved by the

KENSINGTON BOARD OF SELECTMEN

_____, 2013

PREPARED WITH THE ASSISTANCE OF THE

ROCKINGHAM PLANNING COMMISSION

This project was partially funded by

NEW HAMPSHIRE HOMELAND SECURITY AND EMERGENCY MANAGEMENT

CERTIFICATE OF ADOPTION

Town of Kensington, New Hampshire
Board of Selectmen
A Resolution Adopting the Kensington Natural Hazard Mitigation Plan Update
_____, 2013

WHEREAS, the Town of Kensington received funding from the NH Office of Homeland Security and Emergency Management under a Flood Mitigation Assistance Project Grant and assistance from Rockingham Planning Commission in the preparation of the Kensington Hazard Mitigation Plan; and

WHEREAS, several public planning meetings were held between May 2012 and December 2012 regarding the development and review of the 2013 Kensington Hazard Mitigation Plan Update; and

WHEREAS, the Kensington Hazard Mitigation Plan Update contains several potential future projects to mitigate hazard damage in the Town of Kensington; and

WHEREAS, a duly-noticed public hearing was held by the Kensington Board of Selectmen on _____ to formally approve and adopt the Kensington Hazard Mitigation Plan Update.

NOW, THEREFORE BE IT RESOLVED that the Kensington Board of Selectmen adopts the Kensington Hazard Mitigation Plan Update.

ADOPTED AND SIGNED this __ day of _____2013.

_____

Kensington Board of Selectmen Chair

_____

ATTEST

_____ _____

Public Notary

TABLE OF CONTENTS

LIST OF MAPS

LIST OF FIGURES

LIST OF TABLES

EXECUTIVE SUMMARY

The Kensington Hazard Mitigation Plan (herein after, the *Plan*) was compiled to assist the Town of Kensington in reducing and mitigating future losses from natural hazard events. The *Plan* was developed by the Rockingham Planning Commission and participants from the Town of Kensington and contains the tools necessary to identify specific hazards and aspects of existing and future mitigation efforts.

The following hazards are addressed:

- Flooding
- Hurricane
- Severe Winter Weather
- Wildfire
- Earthquake
- Tornados

The Critical Facilities include:

- Town Offices
- Town Hall
- Kensington Elementary School
- Kensington Fire Department
- Library
- State Roads
- Air Fields – Stumpfield Road, Cottage Road
- Town Park – Trundle Bed Lane
- Town Shed – South Road
- Amateur Radio Repeater Towers – Muddy Pond Road
- Kensington Police Department

The *Plan* is considered a work in progress and should be revisited frequently to assess whether the existing and suggested mitigation strategies are successful. Copies have been distributed to the Town of Kensington, and a copy will remain on file at the Rockingham Planning Commission. A copy of this Plan is also on file at the New Hampshire Homeland Security and Emergency Management (NHHSEM) and the Federal Emergency Management Agency (FEMA) offices. This Document was approved by both agencies prior its adoption at the local level.

CHAPTER 1 – INTRODUCTION

BACKGROUND

The New Hampshire Homeland Security and Emergency Management (NHHSEM) has a goal for all communities within the State of New Hampshire to establish local hazard mitigation plans as a means to reduce and mitigate future losses from natural hazard events. The NHHSEM outlined a process whereby communities throughout the State may be eligible for grants and other assistance upon completion of a local hazard mitigation plan. A handbook entitled Hazard Mitigation Planning for New Hampshire Communities was created by NHHSEM to assist communities in developing local plans. The State's Regional Planning Commissions are charged with providing assistance to selected communities to develop local plans.

The Kensington Hazard Mitigation Plan was prepared by participants from the Town of Kensington Hazard Mitigation Team with the assistance and professional services of the Rockingham Planning Commission (RPC) under contract with New Hampshire Homeland Security and Emergency Management operating under the guidance of Section 206.405 of 44 CFR Chapter 1 (10-1-97 Edition). The Kensington Hazard Mitigation Plan serves as a strategic planning tool for use by the Town of Kensington in its efforts to identify and mitigate the future impacts of natural and/or man-made hazard events.

Methodology

On May 3, 2012, the Rockingham Planning Commission (RPC) organized the first meeting with emergency management officials from the Town of Kensington to begin the initial planning stages of the *Plan Update (primarily step 1).* This meeting precipitated the development of the *Natural Hazards Mitigation Committee* (herein after, the *Committee*). RPC and participants from the Town developed the content of the *Plan* using the ten-step process set forth in the *Hazard Mitigation Planning for New Hampshire Communities*. The following is a summary of the ten-step process conducted to compile the *Plan.* Publicly noticed work session meetings were also held on June 5, 2012, July 17, 2012, August 21, 2012, September 18, 2012 and December 18, 2012.

Step 1- Form the Committee

As stated above prior to the first meeting RPC contacted the EMD of Kensington. Members of the community were invited by the EMD by voice contact as well as invite letter to join the Kensington Hazard Mitigation Committee including the Police Chief, Fire Chief, Planning Board and Selectboard representatives, Road Manager, Kensington school district representatives, NHHSEM and neighboring town emergency representatives. Public notices, per NH RSA 91-A were posted on the town website and two other public viewing sites including but not limited to the Town Offices, Public Safety Complex and Public Library to inform residents about the planning process, to participate, and possibly become a member of the planning process. The initial meeting was held on June 5, 2012 to introduce the Mitigation Planning Process to the possible committee. Those that responded and participated on the

committee are listed under acknowledgments on page 6. Although participation was sought from other agencies, neighboring towns and the public only the participating members mentioned on page 6 participated in this plan update.

Step 2 – Map the Hazards
Participants in the *Committee* identified areas where damage from historic natural disasters have occurred and areas where critical man-made facilities and other features may be at risk in the future for loss of life, property damage, environmental pollution and other risk factors. RPC generated a set of base maps with GIS (Geographic Information Systems) that were used in the process of identifying past and future hazards.

Step 3 – Identify Critical Facilities and Areas of Concern
Participants in the Committee then identified facilities and areas that were considered to be important to the Town for emergency management purposes, for provision of utilities and community services, evacuation routes, and for recreational and social value. Using a Global Positioning System, RPC plotted the exact location of these sites on a map. Digital images were collected for each Critical Facility using Pictometry^{tm} software and images of the Town of Kensington.

Step 4 – Identify Existing Mitigation Strategies
After collecting detailed information on each critical facility in Kensington, the Committee and RPC staff identified existing Town mitigation strategies relative to flooding, wind, fire, ice and snow events and earthquakes.

Step 5 – Identify the Gaps in Existing Mitigation Strategies
The existing strategies were then reviewed by the RPC and the Committee for coverage and effectiveness, as well as the need for improvement.

Step 6 – Identify Potential Mitigation Strategies
A list was developed of additional hazard mitigation actions and strategies for the Town of Kensington. The existing Hazard Mitigation Plans of Kensington, North Hampton and Rye were just a few towns that were utilized to identify new mitigation strategies as well as the town Master Plan, Emergency Operation Plan, and Capital Improvements Plan.

Step 7 – Prioritize and Develop the Action Plan
The proposed hazard mitigation actions and strategies were reviewed and each strategy was rated (good, average, or poor) for its effectiveness according to several factors (*e.g.*, technical and administrative applicability, political and social acceptability, legal authority, environmental impact, financial feasibility). Each factor was then scored and all scores were totaled for each strategy. Strategies were ranked by overall score for preliminary prioritization then reviewed again under Step 8.

Step 8 - Determine Priorities

The preliminary prioritization list was reviewed in order to make changes and determine a final prioritization for new hazard mitigation actions and existing protection strategy improvements identified in previous steps. RPC also presented recommendations to be reviewed and prioritized by emergency management officials.

Step 9 - Develop Implementation Strategy

Using the chart provided under Step 9 in the handbook, an implementation strategy was created which included person(s) responsible for implementation (who), a timeline for completion (when), and a funding source and/or technical assistance source (how) for each identified hazard mitigation actions. Also, when the Master Plan or the Kensington Capital Improvement Plan (CIP) is updated the *Kensington Hazard Mitigation Plan* shall be consulted to determine if strategies or actions suggested in the *Plan* can be incorporated into the Town's future land use recommendations and or capital expenditures.

Step 10 - Adopt and Monitor the *Plan*

RPC staff compiled the results of Steps 1 to 9 in a draft document. This draft *Plan* was reviewed by members of the Committee and by staff members at the RPC. RPC staff compiled the results of Steps 1 to 8 in a draft document. This draft *Plan* was reviewed by members of the Committee and by staff members at the RPC. The draft *Plan* was also placed on the RPC website for review by the public, neighboring communities, agencies, businesses, and other interested parties to review and make comments via email. A duly noticed public meeting was held by the Kensington Board of Selectmen on _____. The meeting allowed the community and neighboring towns to provide comments and suggestions for the *Plan* in person, prior to the document being finalized. It also allowed board and committee members to review other planning documents in town such as the Master Plan and CIP to consider and incorporate pertinent information that may be included within the Hazard Mitigation Plan. The draft was revised to incorporate comment from the Selectmen, Planning Board and general public; then submitted to the NHHSEM and FEMA Region I for their review and comments. Any changes required by NHHSEM and FEMA were made and a revised draft document was then submitted to the Kensington Board of Selectmen for their final review. A public hearing was then held by the Kensington Board of Selectmen on _____. At this public hearing the *Plan* was approved and adopted by the Board of Selectman.

HAZARD MITIGATION GOALS AND OBJECTIVES OF THE STATE OF NEW HAMPSHIRE

The *State of New Hampshire Natural Hazards Mitigation Plan*, which was prepared and is maintained by the New Hampshire Homeland Security and Emergency Management (NHHSEM), sets forth the following related to overall hazard mitigation goals and objectives for the State of New Hampshire:

1. To improve upon the protection of the Kensington general population, the citizens of the State and guests, from all natural and man-made hazards.
2. To reduce the potential impact of natural and man-made disasters on Kensington and the State's Critical Support Services.
3. To reduce the potential impact of natural and man-made disasters on Kensington's Critical Facilities in the State.
4. To reduce the potential impact of natural and man-made disasters on Kensington and the State's infrastructure.
5. To improve Kensington's Emergency Preparedness.
6. Improve the Kensington's Disaster Response and Recovery Capability.
7. To reduce the potential impact of natural and man-made disasters on private property.
8. To reduce the potential impact of natural and man-made disasters on Kensington and the State's economy.
9. To reduce the potential impact of natural and man-made disasters on Kensington and the State's natural environment.
10. To reduce Kensington and the State's liability with respect to natural and man-made hazards generally.
11. To reduce the potential impact of natural and man-made disasters on Kensington and the State's specific historic treasures and interests as well as other tangible and intangible characteristics that add to the quality of life to the citizens and guests of the State and the town.
12. To identify, introduce and implement cost effective Hazard Mitigation measures so as to accomplish Kensington's and the states goals and objectives in order to raise the awareness and acceptance of hazard mitigation planning.

Through the adoption of this Plan the Town of Kensington concurs and adopts these goals and objectives.

Acknowledgements

The Kensington Board of Selectmen extends special thanks to those that assisted in the development of this *Plan* update by serving as member of Natural Hazards Mitigation Committee:

Robert Gustafson, Kensington Emergency Management Director
Jason Greene, Kensington Emergency Management
Kate Mignone, Kensington Planning Board
Michael Sielicki, Kensington Police Department
Charles LeBlanc, Kensington Fire Chief
Dave Buxton, Kensington Road Manager
Barbara Switzer, Kensington Elementary School
Scott Sanders, Kensington Police Department
Joan Skewes, Kensington Conservation Commission

The Kensington Board of Selectmen offers thanks to the **NHHSEM** (http://www.nh.gov/safety/divisions/hsem/index.html) which provided the model and funding for this *Plan*.

In addition, thanks are extended to the staff of the **Rockingham Planning Commission** for professional services, process facilitation and preparation of this document.

CHAPTER II – COMMUNITY PROFILE

The town of Kensington is located in southeast New Hampshire near the Massachusetts boarder and the ocean. Based on the 2010 census there are 2,125 people who reside in town. The Town is 12 square miles with no significant inland surface water. The following four figures show the location of the town relative to the surrounding towns, the watersheds that are located in the town, a general representation of the town's wetlands and the location of the special flood hazard areas.

NATURAL FEATURES

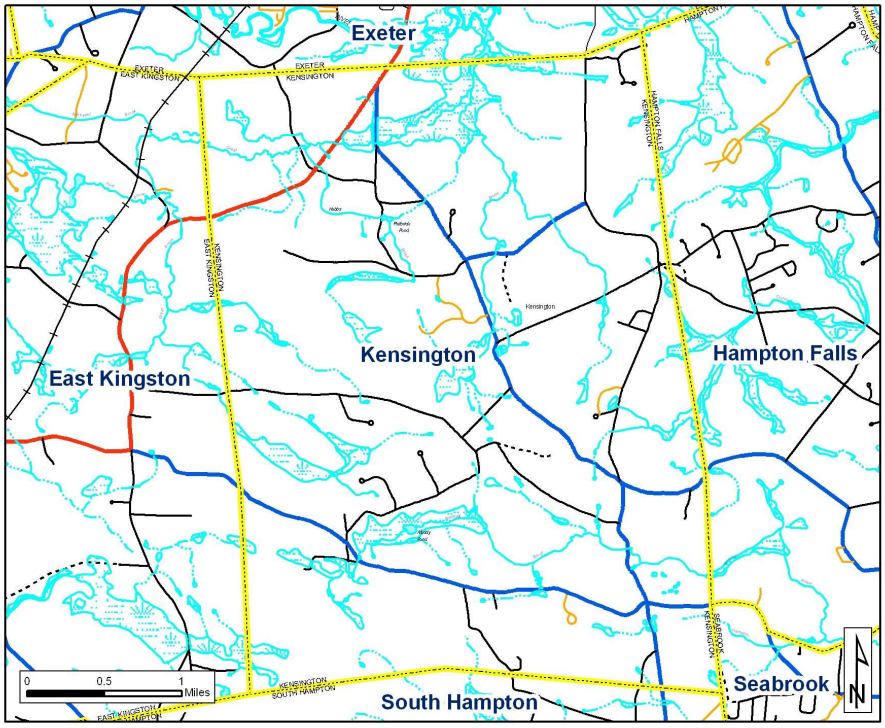

Figure 1: Location Map of Kensington, New Hampshire

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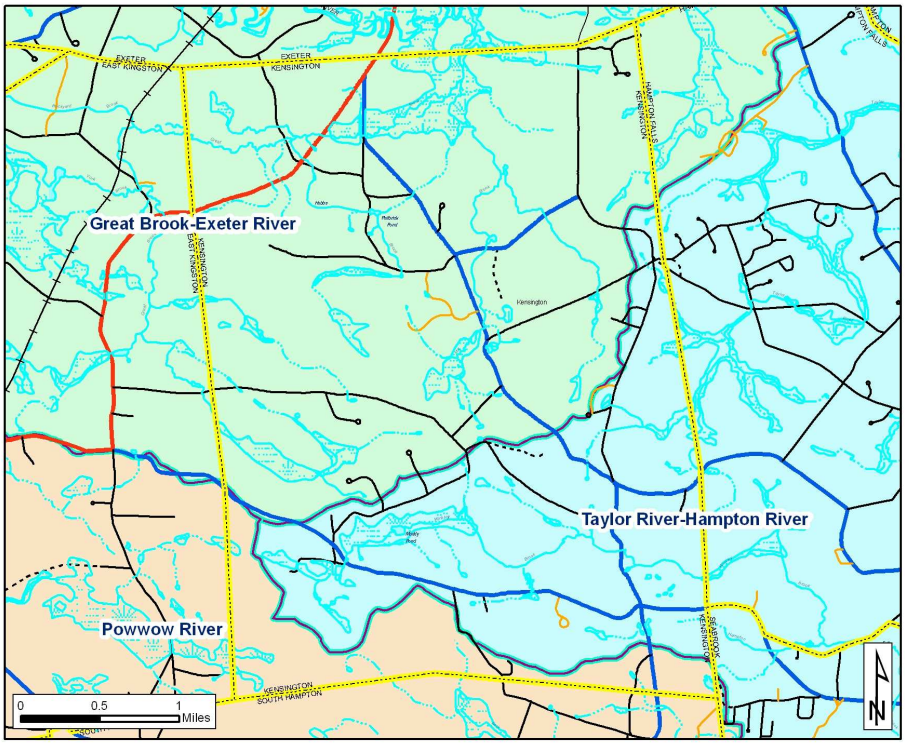

Figure 2: Watershed Map of Kensington, New Hampshire

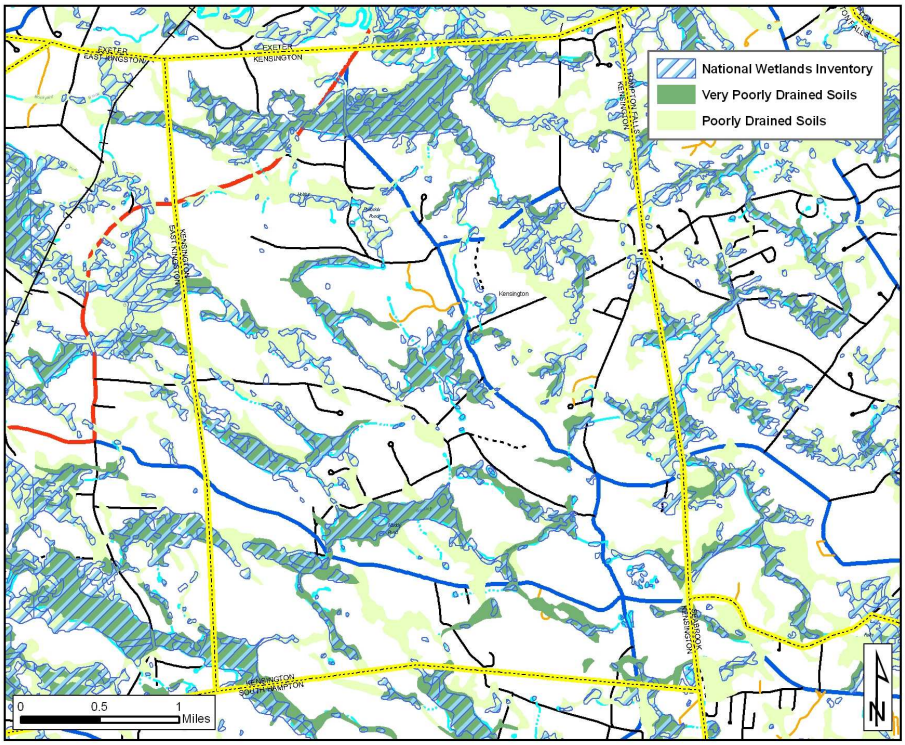

Figure 3: Wetland Soils Map of Kensington New Hampshire

Floodplains for this Plan are defined as the 100-year and 500-year flood hazard zones, as depicted on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM). Floodplains in the Town are shown below in Figure 4. Kensington hopes to gain participation in the National Flood Insurance Program administered by FEMA in 2014. Development should be located away from wetlands and floodplains whenever possible. The filling of wetlands for building construction not only destroys wetlands and their numerous benefits, but may also lead to groundwater contamination. Building within a flood zone may also reduce the floodplain's capacity to absorb and retain water during periods of excessive precipitation and runoff.

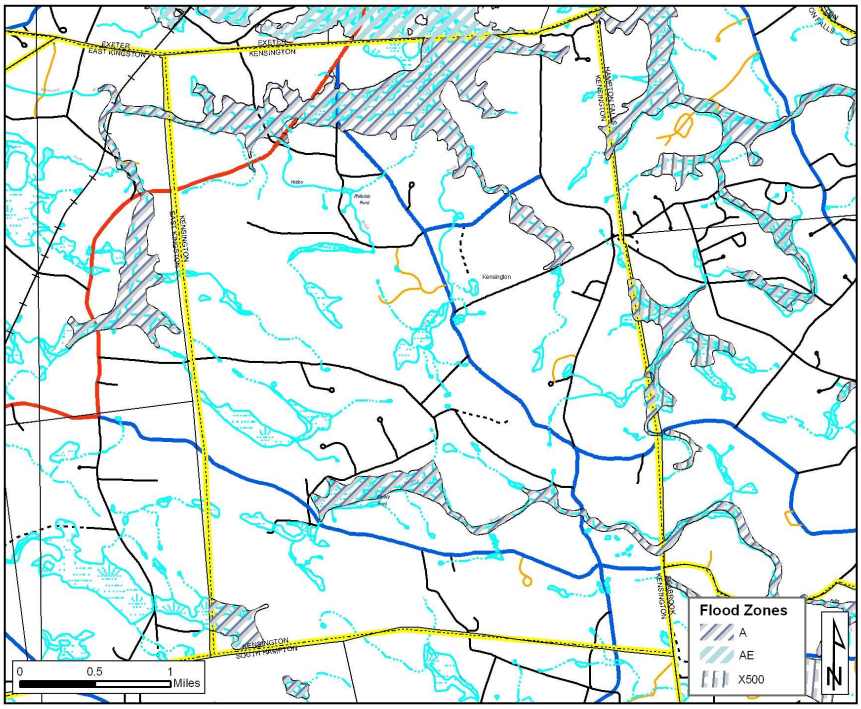

Figure 4: Flood Hazard Map of Kensington, New Hampshire

LAND USE AND DEVELOPMENT

A land use map was prepared for this *Plan* using data from GRANIT (The New Hampshire Geographically Referenced Analysis and Information Transfer System). The land use data was created for the town during the 2011 Master Plan Update. The data was developed through interpretation and classifying land use types from 2010 orthophoto quadrangles from planning board input. This data is presented in Map 1: Kensington Land Use.

The expected population for the year 2030 is estimated to be 2, 285 by the RPC's Comprehensive Economic Development Strategy (CEDS) population projections. Commercial growth is expected to continue to be concentrated along the intersection of Amesbury and South Road and to include the renovation and replacement of some businesses in that area. From 2007-2012, roughly 18 residential units were constructed. During that same time period no new commercial buildings were built. During this same time period the town of Kensington has not experienced building activity within the designated 100 year flood zone. In the future, Kensington building officials will continue to monitor building activity within these flood potential areas of town.

INSERT MAP 1 – EXISTING LAND-USE

CHAPTER III – NATURAL HAZARDS IN THE TOWN OF KENSINGTON

WHAT ARE THE HAZARDS?

The first step in planning for natural hazard mitigation is to identify hazards that may affect the Town. Some communities are more susceptible to certain hazards (i.e., flooding near rivers, hurricanes on the seacoast, etc.). The Town of Kensington is prone to several types of natural hazards. These hazards include: **flooding, hurricanes, tornadoes, severe winter weather, wildfires** and **earthquakes**. Other natural hazards can and do affect the Town of Kensington, but these were the hazards prioritized by the Committee for mitigation planning. These were the hazards that were considered to occur with regularity and/or were considered to have high damage potential, and are discussed below.

Natural hazards that are included in the State's Hazard Mitigation Plan that are not included in the *Plan* include: drought, extreme heat, landslide, subsidence, radon and avalanche. Subsidence and avalanche are rated by the State as having Low and No risk in Rockingham County, respectively; due to this they were left out of the *Plan*. Kensington has no record of landslides and little chance of one occurring that could possibly damage property of cause injury; so landslides were not included in this *Plan*. The State's Plan indicates that Rockingham County is at Moderate risk to drought, extreme heat, and radon; these hazards were not included in the *Plan*. When compared natural hazards that could be potentially devastating to the Town (earthquakes or hurricanes) or natural hazards that occur with regularity (flooding or severe winter weather) it was not considered an effective us of the Committee time to include drought, extreme heat, and radon in the *Plan* at this time. Other potential natural Hazards that were considered highly unlikely or only minimally dangerous, and therefore not included in the plan are: Tsunami, Thunder storms, lightning, or hail. When the *Plan* is revised and updated in the future, possible inclusion of these hazards will be reevaluated.

HAZARD DEFINITIONS

Flooding

Floods are defined as a temporary overflow of water onto lands that are not normally covered by water. Flooding results from the overflow of major rivers and tributaries, storm surges, and/ or inadequate local drainage. Floods can cause loss of life, property damage, crop/livestock damage, and water supply contamination. Floods can also disrupt travel routes on roads and bridges.

Inland floods are most likely to occur in the spring due to the increase in rainfall and melting of snow; however, floods can occur at any time of the year. A sudden thaw in the winter or a major downpour in the summer can cause flooding because there is suddenly a lot of water in one place with nowhere to go. Coastal flooding can be caused by storm surge associated with high wind events hurricanes or from tsunami.

100-year Floodplain Events

Floodplains are usually located in lowlands near rivers, and flood on a regular basis. The term 100 year flood does not mean that flood will occur once every 100 years. It is a statement of probability that scientists and engineers use to describe how one flood compares to others that are likely to occur. It is more accurate to use the phrase "1%

annual chance flood". What this means is that there is a 1% chance of a flood of that size happening in any year.

Rapid Snow Pack Melt
Warm temperatures and heavy rains cause rapid snowmelt. Quickly melting snow coupled with moderate to heavy rains are prime conditions for flooding.

River Ice Jams
Rising waters in early spring often breaks ice into chunks, which float downstream and often pile up, causing flooding. Small rivers and streams pose special flooding risks because they are easily blocked by jams. Ice collecting in river bends and against structures presents significant flooding threats to bridges, roads, and the surrounding lands.

Hurricane
A hurricane is a tropical cyclone in which winds reach speeds of 74 miles per hour or more and blow in a large spiral around a relatively calm center (see Appendix C). The eye of the storm is usually 20-30 miles wide and may extend over 400 miles. High winds are a primary cause of hurricane-inflicted loss of life and property damage.

Tornadoes
A tornado is a violent windstorm characterized by a twisting, funnel shaped cloud. They develop when cool air overrides a layer of warm air, causing the warm air to rise rapidly. The atmospheric conditions required for the formation of a tornado include great thermal instability, high humidity and the convergence of warm, moist air at low levels with cooler, drier air aloft. Most tornadoes remain suspended in the atmosphere, but if they touch down they become a force of destruction.

Tornadoes produce the most violent winds on earth, at speeds of 280 mph or more. In addition, tornadoes can travel at a forward speed of up to 70 mph. Damage paths can be in excess of one mile wide and 50 miles long. Violent winds and debris slamming into buildings cause the most structural damage.

The Fujita Scale is the standard scale for rating the severity of a tornado as measured by the damage it causes (see Appendix D). A tornado is usually accompanied by thunder, lightning, heavy rain, and a loud "freight train" noise. In comparison with a hurricane, a tornado covers a much smaller area but can be more violent and destructive.

Severe Winter Weather
Ice and snow events typically occur during the winter months and can cause loss of life, property damage and tree damage.

Heavy Snow Storms
A winter storm can range from moderate snow to blizzard conditions. Blizzard conditions are considered blinding, wind-driven snow over 35 mph that lasts several

days. A severe winter storm deposits four or more inches of snow during a 12-hour period or six inches of snow during a 24-hour period.

Ice Storms
An ice storm involves rain, which freezes upon impact. Ice coating at least one-fourth inch in thickness is heavy enough to damage trees, overhead wires and similar objects. Ice storms often produce widespread power outages.

Nor'easter
A Nor'easter is large weather system traveling from South to North passing along or near the seacoast. As the storm approaches New England and its intensity becomes increasingly apparent, the resulting counterclockwise cyclonic winds impact the coast and inland areas form a Northeasterly direction. The sustained winds may meet or exceed hurricane force, with larger bursts, and may exceed hurricane events by many hours (or days) in terms of duration[1].

Wildfire
Wildfire is defined as an uncontrolled and rapidly spreading fire. A forest fire is an uncontrolled fire in a woody area. They often occur during drought and when woody debris on the forest floor is readily available to fuel the fire. Grass fires are uncontrolled fires in grassy areas.

Earthquakes
Geologic events are often associated with California, but New England is considered a moderate risk earthquake zone. An earthquake is a rapid shaking of the earth caused by the breaking and shifting of rock beneath the earth's surface. Earthquakes can cause buildings and bridges to collapse, disrupt gas, electric and phone lines, and often cause landslides, flash floods, fires, and avalanches. Larger earthquakes usually begin with slight tremors but rapidly take the form of one or more violent shocks, and end in vibrations of gradually diminishing force called aftershocks. The underground point of origin of an earthquake is called its focus; the point on the surface directly above the focus is the epicenter. The magnitude and intensity of an earthquake is determined by the use of scales such as the Richter scale[2] and Mercalli scale.

PROFILE OF PAST AND POTENTIAL HAZARDS

As discussed above the natural hazards that were identified for mitigation in this Plan include: flooding, hurricanes-high wind events, severe winter weather, wildfire and earthquakes. Some of the natural hazards could be included under more than one type of hazard. For example a hurricane could be considered a high wind event or a flooding event depending on the storm's consequences.

The hazard profiles below include: a description of the events included as part of the natural hazard, the geographic location of each natural hazard (if applicable), the extent of the natural hazard (e.g. magnitude or severity), probability, past occurrences, and community vulnerability. Past occurrences of natural hazards were mapped if possible (Map 2: Past and Future Hazards). Some of the natural hazards have not occurred within the Town of Kensington (within written

[1] Definition of Nor'easter taken from NH State Natural Hazards Mitigation Plan October 2000 Edition.
[2] A copy of the Richter scale is displayed in Appendix E.

memory), for these hazards the plan refers to a table of hazards that have occurred regionally and statewide (Table 3). Community vulnerability identifies the specific areas, general type of structures, specific structures, or general vulnerability of the Town of Kensington to each natural hazard.

The **extent** of a hazard will be described as Minimal, Moderate or Severe if there is no other appropriate scale to use or data on the extent is limited. These terms are defined as follows: Minimal – local residents can handle the hazard event without help from outside sources.

Moderate - county or regional assistance is needed to survive and/or recover.

Severe – state or federal assistance is necessary to survive and/or recover.

Probability was defined as high, a roughly 66-100% chance of reoccurrence; moderate, roughly a 33-66% chance of reoccurrence; and low, roughly a 0-33% of reoccurrence

Flooding

Description: Flooding events can include hurricanes, 100-year floods, 500-year floods, debris-impacted infrastructure, erosion, mudslides, rapid snow pack melt, and river ice jams.

Location: Kensington is vulnerable to flooding in several locations. Generally, the Town is at risk within the Flood Zones identified by FEMA on Flood Insurance Rate Maps (FIRM). Kensington has flood zones A identified in Town. These zones are "100-year" flood zones without the base flood height identified. There are also several locally-identified areas susceptible to flooding that are not within these flood zones, these areas are described below and displayed on Map 2: Past and Future Hazards.

Extent: Flooding in Kensington is **Minimal** to **Moderate**. Most of the flooding events can be handled by the town but state or federal assistance may be required to recover from the events (i.e. money for damage to infrastructure).

Probability: **HIGH**

Table 1: Probability of Flooding based on return interval

Flood Return Interval	Chance of Occurrence in Any Given Year
10-year	10%
50-year	2%
100-year	1%
500-year	0.2%

Past Occurrence: Flooding is a common hazard for the Town of Kensington. Several locations were identified as areas of chronic reoccurring flooding or high potential for future flooding. These areas are listed below. Larger flood events are listed in Table 3.

Community Vulnerability:

- Structures located in the flood zone
- Culverts
- Basements
- Erodable soils
- Locally-identified flood areas (Map 2: Past and Future Hazards)

National Flood Insurance Program (NFIP)

In 1968, Congress created the National Flood Insurance Program (NFIP) in response to the rising cost of taxpayer funded disaster relief for flood victim and the increasing amount of damage caused by floods. The Federal Insurance and Mitigation Administration (FIMA) a component of the Federal Emergency Management Agency (FEMA) manages the NFIP, and oversees the floodplain management and mapping components of the program.

Communities participate in the NFIP by adopting and enforcing floodplain management ordinances to reduce flood damage. In exchange, the NFIP makes federally subsidized flood insurance available to homeowners, renters, and business owners in these communities. Flood insurance, Federal Grants and loans, Federal disaster assistance and federal mortgage insurance is unavailable for the acquisition or construction of structures located in the floodplain shown on the NFIP maps for those communities that do not participate in the program.

To get secure financing to buy, build or improve structures in the Special Flood Hazard areas, it is legally required by federal law to purchase flood insurance. Lending institutions that are federally regulated or federally insured must determine if the structure is located in the SFHA and must provide written notice requiring flood insurance. Flood insurance is available to any property owner located in a community participating in NFIP.

Flood damage is reduced by nearly $1 billion a year through partnerships with communities, the insurance industry, and the lending industry. Further, buildings constructed in compliance with NFIP building standards suffer approximately 80 percent less damage annually than those not built in compliance. Additionally, every $3 paid in flood insurance claims saves $1 in disaster assistance payments.

The NFIP is self-supporting for the average historical loss year, which means that operating expenses and flood insurance claims are not paid for by the taxpayer, but through premiums collected for flood insurance policies. The program has borrowing authority from the U.S. Treasury for times when losses are heavy; however, these loans are paid back with interest.

Repetitive Loss Properties

A specific target group of repetitive loss properties is identified and serviced separately from other NFIP policies by the Special Direct Facility (SDF). The target group includes every NFIP insured property that, since 1978 and regardless of any change(s) of ownership during that period, has experienced four or more paid losses, two paid flood losses within a 10-year period that equal or exceed the current value of the insured property, or three or more paid losses that

equal or exceed the current value of the insured property, regardless of any changes of ownership, since the buildings construction or back to 1978. Target group policies are afforded coverage, whether new or renewal, only through the SDF.

The FEMA Regional Office provides information about repetitive loss properties to State and local floodplain management officials. The FEMA Regional Office may also offer property owners building inspection and financial incentives for undertaking measures to mitigate future flood losses. These measures include elevating buildings from the flood area, and in some cases drainage improvement projects. If the property owners agree to mitigation measures, their property may be removed from the target list and would no longer be serviced by the SDF.

Table 2: Kensington NFIP Policy and Loss Statistics

Policies in force	Insurance in Force	Number of Paid Losses (since 1978)	Total Losses Paid (Since 1978)
0	$ 0	0	$0
Source: FEMA Policy and claims database, as of January, 2013			

Kensington NFIP Repetitive Flooding Losses

Kensington hopes to join the Regular Program of the NFIP in March of 2014. As of January 2013, Kensington has no documented repetitive loss properties in town. This is determined by any repetitive damage claims on those properties that hold flood insurance through the NFIP.

Floodplain Management Goals/Reducing Flood Risks

A major objective to floodplain management in Kensington is to begin participation in the NFIP. Communities that agree to manage Special Flood hazard Areas shown on NFIP maps participate in the NFIP by adopting minimum standards. The minimum requirements are the adoption of the floodplain Ordinances and Subdivision/Site Plan Review requirements for land designated as Special Flood hazard Areas. Under Federal Law, any structure located in the floodplain is required to have flood insurance. Federally subsidized flood insurance is available to any property owner located in a community participating in the NFIP. Communities that fail to comply with the NFIP will be put on probation and/or suspended. Probation is a first warning where all policy holders receive a letter notifying them of a $50 increase in their insurance. In the event of suspension, the policyholders lose their NFIP insurance and are left to purchase insurance in the private sector, which is of significantly higher cost. If a community is having difficulty complying with NFIP policies, FEMA is available to meet with staff and volunteers to work through the difficulties and clear up any confusion before placing the community on probation or suspension.

Potential Administrative Techniques to Minimize Flood Losses in Kensington

A potential step in mitigating flood damage is participating in NFIP. Kensington will hold to the standards of enforcement once they join the program and will seek to work within the provisions

of NFIP. Below is a list of actions Kensington should consider, and perform, in order to comply with NFIP:

- Participate in NFIP training offered by the State and/or FEMA (or in other training) that addresses flood hazard planning and management;
- Establish Mutual Aid Agreements with neighboring communities to address administering the NFIP following a major storm event;
- Address NFIP monitoring and compliance activities;
- Revise/adopt subdivision regulations, erosion control regulations, board of health regulations to improve floodplain management in the community;
- Prepare, distribute or make available NFIP insurance and building codes explanatory pamphlets or booklets;
- Identify and become knowledgeable of non-compliant structures in the community;
- Inspect foundations at time of completion before framing to determine if lowest floor is at or above Base Flood Elevation (BFE), if they are in the floodplain;
- Require the use of elevation certificates;
- Enhance local officials, builders, developers, local citizens and other stakeholders' knowledge of how to read and interpret the FIRM;
- Work with elected officials, the state and FEMA to correct existing compliance issues and prevent any future NFIP compliance issues through continuous communications, training and education.

Hurricane

Description: As described on page 11.

Location: Hurricane events are more potentially damaging with increasing proximity to the coast. For this *Plan*, high-wind events were considered to have an equal chance of affecting any part of the Town of Kensington.

Extent: Kensington is located within a Zone II hurricane-susceptible region (indicating a design wind speed of 160 mph)[3]. Between 1900 and 1996 2 hurricanes have made landfall in New Hampshire, a category 1 and a category 2. In Maine, 5 hurricanes have made landfall (all category 1). In Massachusetts, 6 hurricanes have made landfall (2 category 1, 2 category 2 and 2 category 3). From this information it can be extrapolated that Kensington is a high risk to a hurricane event, with variable wind speeds between 74 – 130 mph (category 1-3).

Probability: **HIGH**. The State of New Hampshire's Natural Hazards Mitigation Plan rates Rockingham County with high likelihood of hurricane events.

Past Occurrence: Between 1635 and 1991, 10 hurricanes have impacted the State of New Hampshire. The worst of these occurred on September 21, 1938, with wind speeds of up to 186 mph in MA and 138mph elsewhere. Thirteen of 494 people killed by this storm were residents of New Hampshire. The Storm caused $12,337,643 in damages (1938 dollars), timber not included. The impact of these hurricanes on the Town of Kensington

[3] "Understanding Your Risks, Identifying Hazards and Estimating Losses", FEMA, page

is unclear. Local knowledge did not indicate that any lives were lost or that property damage was severe.

Community Vulnerability:

- Power lines,
- Shingled roofs,
- Chimneys, and
- Trees
- Mobile homes

Tornadoes

Description: As described on page 10.

Location: For this *Plan*, Tornado events were considered to have an equal chance of affecting any part of the Town of Kensington.

Extent: From 1950 to 1995 Rockingham County was subject to 9 recorded tornado events, these included 2 type F0 (Gale Tornado, 40-72 mph), 2 type F1 (Moderate Tornado, 73-112 mph), 4 type F2 (Significant Tornado, 113-157 mph) and 1 type F3 (Severe Tornado, 158-206 mph)[4]. Type 3 tornados can cause severe damage including tearing the roofs and walls from well-constructed homes, trees can be uprooted, trains over-turned, and cars lifted off the ground and thrown[5].

Probability: **HIGH**. The State of New Hampshire's Natural Hazards Mitigation Plan rates Rockingham County with high likelihood of tornado events

Past Occurrence: Rockingham County tornado history is as follows: Category F0 tornados occurred on Oct. 03, 1970 and June 09, 1978. Category F1 tornados occurred on July 31, 1954 and July 26, 1966. Category F2 tornados occurred on Aug. 21, 1951, June 19, 1957, July 02, 1961 and June 09, 1963, May 21, 2006, and July 24, 2008. A category F3 tornado occurred on June 09, 1953.

Community Vulnerability:

- Power lines,
- Shingled roofs,
- Chimneys, and
- Trees
- Mobile homes

Severe Winter Weather

Description: There are three types of winter events**:** blizzards, ice storms and extreme cold. All of these events are a threat to the community with subzero temperatures from extreme wind chill and storms causing low visibility for commuters. Snow storms have been known to collapse buildings. Ice storms disrupt power and communication services. Extreme cold affects the elderly.

[4] The tornado project .com

[5] "Understanding Your Risks, Identifying Hazards and Estimating Losses", FEMA, page

Location: Severe winter weather events have and equal chance of affecting any part of the Town of Kensington.

Extent: Large snow events in Southeastern New Hampshire can produce 30 inches of snow, or more. Portions of central New Hampshire recorded snowfalls of 98" during one slow moving storm in February of 1969. Ice storms occur with regularity in New England. Seven severe ice storms have been recorded that affected New Hampshire since 1929. These events caused disruption of transportation, loss of power and millions of dollars in damage.

Probability: **HIGH**. The State of New Hampshire's Natural Hazards Mitigation Plan rates Rockingham County with high likelihood of heavy snows and ice storms.

Past Occurrence: A list of past winter storm events is displayed below, in Table 3.

Community Vulnerability:

- Power lines
- Trees
- Elderly Populations
- Radio & Cell Towers
- All roads in town

Wildfire

Description: Wildfires include grass fires and forest fires.

Location: The Committee identified no areas of Town as at-risk to wildfires (see Map 2: Past and Future Hazards).

Extent: The extent of wildfires in Kensington is **Minimal**. A wildfire in the Town of Kensington is unlikely, but if a crown fire were to occur it could be very damaging to structures abutting large wooded areas of Town.

Probability: **MODERATE**. The State of New Hampshire's Natural Hazards Mitigation Plan rates Rockingham County with moderate risk to wildfires.

Past Occurrence: List where and when wildfires have affected the Town. Also should be mapped on the data collection map, if possible

- Large 200+ acre fire in northern Kensington, 1947 (see Hazard Map)

Community Vulnerability:

- Structures located near large open vegetated areas prone to lightning strike
- Vulnerability increases during drought events

Earthquake

Description: Seismic activity including landslides and other geologic hazards.

Location: An earthquake has an equal chance of affecting all areas in the Town of Kensington.

Extent: New England is particularly vulnerable to the injury of its inhabitants and structural damage because of our built environment. Few New England States currently include seismic design in their building codes. Massachusetts introduced earthquake design requirements into their building code in 1975 and Connecticut very recently did so. However, these specifications are for new buildings, or very significantly modified existing buildings only. Existing buildings, bridges, water supply lines, electrical power lines and facilities, etc. have rarely been designed for earthquake forces (New Hampshire has no such code specifications).

Probability: **MODERATE**. The State of New Hampshire's Natural Hazard Mitigation Plan ranks all of the Counties in the State with at moderate risk to earthquakes. The Town of Kensington's Peak Ground Acceleration (PGA) values range between 6.1 and 21.0[6]. These numbers are associated with how much an earthquake is felt and how much damage it may cause (Table 2).

Table 3: Peak Ground acceleration (PGA) values for Kensington (information from State and Local Mitigation Planning, FEMA).

PGA	Chance of being exceeded in the next 50 years	Perceived Shaking	Potential Damage
6.1	10%	Moderate	Very Light
10.6	5%	Strong	Light
21.0	2%	Very Strong	Moderate

Past Occurrence: Large earthquakes have not affected the Town of Kensington within recent memory. A list of earthquakes that have affected the region is displayed in Table 3.

Community Vulnerability:

- Dams,
- Bridges,
- Brick Structures,
- Infrastructure,
- Water and Gas lines, and
- Secondary hazards such as fire, power outages, or hazardous material leak or spill.

Table 4: Past Hazard Events in Kensington, NH and Rockingham County

Hazard	Date	Location	Critical Facility or Area Impacted	Remarks/Description
Flood	March 11-21, 1936	Statewide	$133,000,000 in damage throughout New England, 77,000 homeless.	Double Flood; snowmelt/heavy rain.
Flood	September 21, 1938	Statewide	Unknown	Hurricane; stream stage similar to March 1936

[6] http://geohazards.cr.usgs.gov/eq/pubmaps/us.pga.050.map.gif

Hazard	Date	Location	Critical Facility or Area Impacted	Remarks/Description
Flood	July 1986 – August 10, 1986	Statewide	Unknown	**FEMA DR-771-NH**: Severe storms; heavy rain, tornadoes , flash flood, severe wind
Flood	August 7-11 1990	Statewide	Road Network	**FEMA DR-876-NH**: A series of storms with moderate to heavy rains; widespread flooding.
Flood	August 19, 1991	Statewide, Primarily Rockingham and Strafford Counties	Road Network	**FEMA DR-917-NH:** Hurricane Bob; effects felt statewide; counties to east hardest hit.
Flood	October 28, 1996	Rockingham County	Unknown - Typically structures and infrastructure in the floodplain	North and west regions; severe storms.
Flood	June – July 1998	Rockingham County	Heavy damage to secondary roads occurred	**FEMA DR-1231-NH:** A series of rainfall events
Flood	May 12, 2006	Central and Southern Regions	100 yr – 500 yr	**FEMA-1643-DR:** Severe storms and flooding. Counties Declared: Belknap, Carroll, Grafton, Hillsborough, Merrimack, Rockingham, and Strafford
Flood	April 15 - 23, 2007	Statewide	100 yr – 500 yr	**FEMA-1695-DR:** Severe storms and flooding associated with a Nor'easter. Counties Declared: Belknap, Carroll, Cheshire, Coos, Grafton, Hillsborough, Merrimack, Rockingham, Strafford, and Sullivan.
Flood	July 24 2008	Central and Southern Regions	100 yr – 500 yr	**FEMA-1782-DR** Severe storms, tornado and flooding. Counties Declared: Belknap, Carroll, Merrimack, Rockingham, and Strafford
Flood	March 14 – 31, 2010	Southeastern Region	100 yr – 500 yr	**FEMA-1913-DR** Severe storms and flooding. Counties Declared: Hillsborough and Rockingham County
Flood	May 26-30, 2011	Coos and Grafton County	Unknown	**FEMA-4006-DR**
Flood	May 29-31, 2012	Cheshire County	Unknown	**FEMA-4065-DR**
Hurricane	October 18,19 1778	Portions of State	Unknown	40-75 mph winds
Hurricane	1804	Portions of State	Unknown	
Hurricane	September 8, 1869	Portions of State	Unknown	> 50 mph winds

Hazard	Date	Location	Critical Facility or Area Impacted	Remarks/Description
Great Hurricane Of 1938	September 21, 1938	All of Southern New England	2 billion board feet of timber destroyed; electric and telephone disrupted, structures damaged, flooding; statewide 1,363 families received assistance.	Max. wind speed of 186 mph in MA and 138mph max. elsewhere 13 of 494 dead in NH; $12,337,643 total storm losses (1938 dollars), timber not included.
Hurricane Carol	August 31, 1954	Southern New England	Extensive tree and crop damage in state.	SAFFIR/SIMPSON HURRICANE SCALE[7] - Category 3, winds 111-130 mph
Hurricane Donna	September 12, 1960	Southern and Central NH	Unknown	Category 3 Heavy Flooding
Hurricane Belle	August 10, 1976	Southern New England	Unknown	Category 1, winds 74-95 mph Rain and flooding in NH
Hurricane Gloria	September 27, 1985	Southern New England	Unknown	Category 2, winds 96-110 mph >70 mph winds; minor wind damage and
Tropical Storm Floyd	September 16-18 1999	Statewide	Unknown	
Tropical Storm Irene	August 26-Septmeber 6, 2011	Carroll, Coos, Grafton, Merrimack, Belknap, Strafford, Sullivan, Hillsborough and Rockingham Counties	Extensive Flooding and power outages due to downed trees	FEMA- 4026-DR Emergency declaration from Tropical Strom Irene for Hillsborough and Rockingham Counties
Ice Jam	Feb 29, 2000	Brentwood, NH Kensington River	Unknown	Discharge 570 cfs
Ice Jam	Mar 29, 1993	Epping, NH Lamprey River	Road flooding	
Tornado	May 21, 1814	Rockingham County	Unknown	F2[8]
Tornado	May 16, 1890	Rockingham County	Unknown	F2
Tornado	August 21, 1951	Rockingham County	Unknown	F2
Tornado	June 9, 1953	Rockingham County	Unknown	F3
Tornado	June 19, 1957	Rockingham County	Unknown	F2
Tornado	July 2, 1961	Rockingham County	Unknown	F2

[7] For a complete description of the Saffir/Simpson Hurricane Scale see Appendix C.
[8] For a complete description of the Fujita Tornado Damage Scale see Appendix D

Hazard	Date	Location	Critical Facility or Area Impacted	Remarks/Description
Tornado	June 9, 1963	Rockingham County	Unknown	F2
Downburst	July 6, 1999	Stratham, NH	Five fatalities and eleven injuries. Major tree damage, power outages	Microburst $2,498,974 in damages
Tornado	May 21, 2006	Rockingham County	Unknown	F2
Tornado	July 24, 2008	Rockingham, Merrimack, Belknap, Strafford, Carrol	Unknown	F2
Ice Storm	December 17-20 1929	NH	Telephone, telegraph and power disrupted.	
Ice Storm	December 29-30 1942	NH	Unknown- Typically damage to overhead wires and trees.	Glaze storm; severe intensity
Ice Storm	December 22 1969	Parts of NH	Power disruption	Many communities affected
Ice Storm	January 17, 1970	Parts of NH	Power disruption	Many communities affected
Ice Storm	January 8-25 1979	NH	Major disruption of Power and transportation	
Ice Storm	March 3-6 1991	Southern NH	Numerous power outages in southern NH	Numerous in Southern NH
Ice Storm	January 7, 1998	Rockingham County	Power and phone disrupted, communication tower collapsed.	$17,000,000 in damages to PSNH equipment.
Ice Storm	December 12, 2008	New England,	Severe ice storm that caused major damage to private and public utilities.	PSNH states cost of restoration effort Estimated at $75 million for NH alone
Snowstorm	February 4-7 1920	New England	Disrupt transportation for weeks	Boston 37-50cm of sleet , ice and snow
Snowstorm	February 15, 1940	New England	Paralyzed New England	30cm of snow with high wind.
Snowstorm	February 14-17 1958	Southern NH	Unknown	20-33” of snow
Snowstorm	March 18-21 1958	South central NH	Unknown	22-24”of snow
Snowstorm	March 2-5 1950	Southern NH	Unknown	25”of snow
Snowstorm	January 18-20 1961	Southern NH	Unknown	Blizzard Conditions; 50cm of snow
Snowstorm	February 8-10 1969	Southeastern NH	Paralyzing snow	27”of snow and high winds
Snowstorm	February 22-28 1969	Central NH	Unknown	34-98”of snow; very slow moving
Snowstorm “Blizzard of’78”	February 5-7 1978	Statewide	Trapped commuters on highways, businesses closed	Hurricane force winds; 25-33”of snow. People disregard warnings due to a series of missed forecasts
Snowstorm	April 5-7 1982	Southern NH	Unknown	Late season with thunderstorms and 18-22” of snow

Hazard	Date	Location	Critical Facility or Area Impacted	Remarks/Description
Snow Emergency	March 2001	Cheshire, Coos, Grafton, Hillsborough, Merrimack, Rockingham, and Strafford	Unknown	FEMA-3166-EM $4,500,000
Snow Emergency	March 11, 2003	Cheshire, Hillsborough, Merrimack, Rockingham and Strafford	Unknown	FEMA-3177-EM $3,000,000
Snow Emergency	March 30, 2005	Belknap, Carroll, Cheshire, Grafton, Hillsboro, Merrimack, Rockingham, Strafford and Sullivan	Unknown	FEMA-3207-EM $4,654,738
Snow Emergency	April 28, 2005	Carroll, Cheshire, Hillsboro, Rockingham and Sullivan	Unknown	FEMA-3211-EM $2,677,536
Severe Winter Storm	December 11, 2008	Belknap, Carroll, Cheshire, Coos, Grafton, Hillsborough, Merrimack, Rockingham, Strafford, and Sullivan	Unknown	FEMA-1812-DR $19,789,657
Severe Winter Storm	February 23, 2010	Merrimack, Rockingham, Strafford, and Sullivan	Unknown	FEMA-1892-DR
Severe Winter Storm	March 14, 2010	Rockingham and Hillsborough Counties	Unknown	FEMA-1913-DR
Severe Winter Storm	October 29-30, 2011	Rockingham and Hillsborough Counties	Uknown	FEMA-4049-DR
Earthquake	November 18, 1929	Grand Banks Newfoundland	No damage	Richter Magnitude Scale: 7.2[9]
Earthquake	December 20, 1940	Ossipee	Ground Cracks and damage over a broad area	Richter Magnitude Scale: 5.5; Felt over 341 miles away.
Earthquake	December 24, 1940	Ossipee	Ground Cracks and damage over a broad area	Richter Magnitude Scale: 5.5; Felt over 550 KM away.
Earthquake	June 15, 1973	Quebec/NH border	Minor damage	Richter Magnitude Scale: 4.8
Earthquake	June 19, 1982	West of Laconia	Little damage	Richter Magnitude Scale: 4.5
Drought	1929-36	Statewide	Unknown	Regional
Drought	1939-44	Statewide	Unknown	Severe in southeast NH
Drought	1947-50	Statewide	Unknown	Moderate
Drought	1960-69	Statewide	Unknown	Longest recorded continuous period of below normal precipitation

[9] For a complete description of the Richter Magnitude Scale see Appendix E.

Hazard	Date	Location	Critical Facility or Area Impacted	Remarks/Description
Drought Warning	June 6, 1999	Most of State	Unknown	Governors office declaration; Palmer Drought Survey Index indicate "moderate drought" for most of state.
Drought	2001-2002	Statewide	Unknown	Third worst drought on record, exceeded only by the drought of 1956-1966 and 1941-1942

INSERT MAP 2 – PAST AND FUTURE HAZARDS

CHAPTER IV – CRITICAL FACILITIES

The Critical Facilities List for the Town of Kensington has been identified by Kensington's Hazard Mitigation Committee. The Critical Facilities List has been broken up into four categories. The *first category* contains facilities needed for Emergency Response in the event of a disaster. The *second category* contains Non-Emergency Response Facilities that have been identified by the committee as non-essential. These are not required in an emergency response event, but are considered essential for the everyday operation of Kensington. The *third category* contains Facilities/Populations that the committee wishes to protect in the event of a disaster. The *fourth category* contains Potential Resources, which can provide services or supplies in the event of a disaster. Map 3: Critical Facilities at the end of this Chapter identifies the location of the facilities and the evacuation routes. A detailed description of critical facilities can be found in Table __.

Table 5: Category 1 - Emergency Response Services and Facilities:

Map Point ID# (Red)	Critical Facility	Facility Type
1	Town Offices	Government
2	Fire Station	Fire Station
3	Life Flight Landing Zone	Airport
4	Police Station	Police Station

Table 5: Category 2 - Non Emergency Response Facilities:
The Town has identified these facilities as non-emergency facilities; however, they are considered essential for the everyday operation of Kensington.

Map Point ID# (Yellow)	Critical Facility	Facility Type
1	Cell Tower	Telecommunications
2	Cistern	Fire Suppression
3	Fire Pond	Fire Suppression
4	Kensington Town Garage	Large equipment storage
5	Public Works	Large equipment storage
6	Wind Tower	Electric
7	Culverts	Water

Table 5: Category 3 - Facilities/Populations to Protect:
The third category contains people and facilities that need to be protected in event of a disaster.

Map Point ID# (Green)	Critical Facility	Facility Type
1	American Legion Post #105	Gathering Place
2	Sawyer Field	Park
3	Kensington Rec Building	Recreation Facility
4	Kensington Town Park	Gathering Place

Map Point ID# (Green)	Critical Facility	Facility Type
5	Grange	Historic Structure
6	Kensington Public Library	Gathering Place/Historic
7	Kensington Elementary School	School
8	Kensington Unitarian Church	Religious Facility
9	Kensington Congregational Church	Religious Facility
10	Old Brick School House	Historic
11	Electrical Company Fields	Recreation Fields
12	Kensington Elementary School Fields	Recreation Fields
13	Electric Feed	Electric power transfer area
14	Power Substation	Electric Power substation

Table 5: Category 4 - Potential Resources:
This category contains facilities that provide potential resources for services or supplies in the event of a natural disaster.

Map Point ID# (Blue)	Critical Facility	Facility Type
1	Kensington Grocery	Food Supply
2	Country Brook Cafe	Food Supply
3	Richard Welch	Emergency Fuel
4	Air Strip	Air Strip
5	Rosencrantz	Large Heavy Equipment
6	Kensington Auto	Tools and Equipment
7	CP Lumber	Large Equipment
8	Durrell	Construction Business
9	Gravel Pit	Large Equipment
10	Kuegal Storage yard	Heavy Machinery

INSERT MAP 3– CRITICAL FACILITIES

CHAPTER V – POTENTIAL HAZARD AFFECTS

IDENTIFYING VULNERABLE FACILITIES

It is important to determine what the most vulnerable areas of the Town of Kensington are and to estimate their potential loss. The first step is to identify the areas most likely to be damaged in a hazard event. To do this, the locations of buildings and other structures were compared to the location of potential hazard areas identified by the Hazard Mitigation Committee using GIS (Geographic Information Systems). Vulnerable buildings were identified by comparing their location to possible hazard events. For example, all of the structures within the 100-year and 500-year floodplains were identified and used in conducting the potential loss analysis for flooding.

CALCULATING THE POTENTIAL LOSS

The next step in completing the loss estimation involved assessing the level of damage from a hazard event as a percentage of the buildings' assessed value. The assessed value for every parcel in Kensington was provided for the purpose of calculating damage estimates. The damage estimates are divided into two categories based on hazard types: hazards that are location specific (e.g. flooding), and hazards that could affect all areas of Kensington equally. Damage estimates from hazards that could affect all of Kensington equally are much rougher estimates, based on percentages of the total assessed value of Kensington. Damage estimates from hazard with a specific location are derived from the assessed values of the parcels within the hazard area. Kensington's Parcels database was used in conjunction with building footprints, elevation data, and 2010 digital aerial images of the Town; to determine which buildings were potentially in danger from each of the location specific hazard areas. The GIS was used to determine which parcels were affected by which potential hazard areas.

After identifying the parcels and buildings that are at risk, the next step was to calculate a damage estimate for each potential hazard area. FEMA provides a model for estimating damage for various flooding events, so the flood damage estimates provide information including: damage estimates for structures, contents of buildings, functional downtime and replacement time. For wildfire and urban conflagration, damage estimates were determined for the buildings in the potential hazard areas as well as estimates of the building content value, based on the same estimates from the flood model. The following discussion summarizes the potential loss estimates due to natural hazard events.

Flooding

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

The average replacement value was calculated by adding up the assessed values of all structures in the 100 year floodplains. These structures were identified by overlaying digital versions of FEMA's FIRM maps on digital aerial photography of the town of Kensington. Because of the scale and resolution of the FIRM maps and imagery this is only an approximation of the total structures located within the 100-year floodplain (A-zones). The Federal Emergency Management Agency (FEMA) has developed a process to calculate potential loss for structures during flood. The potential loss for residential and non-residential structures was calculated

separately. The value of residential structures was determined by dividing the number of residential units in the A zone by the total assessed value of those residences.

The costs for repairing or replacing bridges, railroads, power lines, telephone lines, and contents of structures are not included in this estimate. In addition, the figures used were based on buildings which are one or two stories high with basements. The percentage of structural damage and contents damage that could be expected for each flood depth is shown in Table 5, along with estimates of functional downtime (how long a business/residence would be down before relocating) and displacement time (how long a business/residence would be displaced from its flooded location).

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):

> **Potential Structure Damage: 49%**
> Approximately 5 structures in the A Zone assessed at $1,911,518= $936,644 of potential damage

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

> **Potential Structure Damage: 28%**
> Approximately 5 structures in the A Zone assessed at $1,911,518= $535,225 of potential damage

The following calculation is based on **two-foot flooding** and assumes that, on average, one or two story buildings with basements receive 20% damage (Understanding Your Risks, Identifying Hazards and Estimating Losses, FEMA page 4-13):

> **Potential Structure Damage: 20%**
> Approximately 5structures in the A Zone assessed at $$1,911,518= $382,303 of potential damage

Table 6: Percentages of structural and content damage, based on the assessed value of a flooded parcel. Also shows the functional downtime and displacement time for each flood event.

Flood Depth	One-foot	Two-foot	Four-foot
% Structural Damage: Buildings	15%	20%	28%
% Structural Damage: Mobile Homes	44%	63%	78%
% Contents Damage: Buildings	22.5%	30%	42%
% Contents Damage: Mobile Homes	30%	90%	90%
Flood Functional Downtime: Buildings	15 days	20 days	28 days
Flood Functional Downtime: Mobile Homes	30 days	30 days	30 days
Flood Displacement Time: Buildings	70 days	110 days	174 days
Flood Displacement Time: Mobile Homes	302 days	365 days	365 days

~Dam Breach and Failure

Dam breach and failure could impact Kensington through flooding. Potential losses will depend on the extent of the breach and would mostly affect Roadway infrastructure. A dam that posses a flooding threat, if it were breached, to the town of Kensington is located in East Kingston on Giles Road (Rte. 108).

Hurricane/ High Wind Events

~Hurricane

Hurricanes do affect the Northeast coast periodically. Since 1900, 2 hurricanes have made landfall in the State of New Hampshire. Due to the coastal location of the Town of Kensington, hurricanes and storm surges present a real hazard to the community. Even degraded hurricanes or tropical storms could still cause significant damage to the structures and infrastructure of the Town of Kensington. The assessed value of all residential and commercial structures in the Town of Kensington, including exempt structures such as schools and churches, and utilities is $359,001,132.00 (Assuming 1% to 5% damage, a hurricane could result in $3,590,011 to $17,950,056 of structure damage.

~Tornado

Tornadoes are relatively uncommon natural hazards in New Hampshire. On average, about six touch down each year. Damage largely depends on where the tornado strikes. If is strikes an inhabited area, the impact could be severe. The assessed value of all residential and commercial structures in the Town of Kensington including exempt structures such as schools and churches,

and utilities is $359,001,132.00 (Assuming 1% to 5% damage, a tornado could result in $3,590,011 to $17,950,056 of structure damage.

~Severe Lightning

The amount of damage caused by lightning will vary according to the type of structure hit and the type of contents inside. There is no record of monetary damages inflicted in the Town of Kensington from lightning strikes.

Severe Winter Weather

~Heavy Snowstorms

Heavy snowstorms typically occur during January and February. New England usually experiences at least one or two heavy snow storms with varying degrees of severity each year. Power outages, extreme cold and impacts to infrastructure are all effects of winter storms that have been felt in Kensington 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. Heavy Snowstorms in Kensington could be expected to cause damage ranging from a few thousand dollars to several million, depending on the severity of the storm.

~Ice Storms

Ice storms often cause widespread power outages by downing power lines, making power lines at risk in Kensington. They can also cause severe damage to trees. In 1998, an ice storm inflicted $12,466,202 worth of damage to New Hampshire as a whole. Ice storms in Kensington could be expected to cause damage ranging from a few thousand dollars to several million, depending on the severity of the storm.

Wildfire (1947)

Wildfires have not damaged homes in Kensington in recent memory. Due to the ability and coordination of the emergency response services in Kensington and the surrounding Towns, a catastrophic wildfire is highly unlikely. In an extreme drought year the potential would increase for a severe fire that could damage homes. If a fire were to occur in a drought year it would still be rapidly contained but still has the potential to destroy a number of homes. Single family homes of wood-frame construction would be at the highest risk. Damage estimates would be the number of homes destroyed multiplied by the average assessed value of the residential structures which. There are roughly 764 residential units in town with an average value of $225,948.

Earthquakes

Earthquakes can cause buildings and bridges to collapse, disrupt gas, electric and phone lines and are often associated with landslides and flash floods. Four earthquakes in New Hampshire between 1924-1989 had a magnitude of 4.2 or more. Two of these occurred in Ossipee, one west of Laconia, and one near the Quebec border. If an earthquake were to impact the Town of Kensington, underground lines would be susceptible. In addition, buildings that are not built to a high seismic design level would be susceptible to structural damage. The assessed value of all residential and commercial structures in Kensington, including exempt structures such as schools and churches, and utilities is $359,001,132.00 (Assuming 1% to 5% damage, a earthquake could result in $3,590,011 to $17,950,056 of structure damage. Based on Table 9 below, an earthquake

could cause a range of damage depending on the construction and materials used to build the structures in town.

Table 7: Earthquake Damage and Loss of Function Table. Building Damage and Functional Loss are based on the type of Structure and the PGA (g). Two PGA (Peak Ground Acceleration) were chosen for this Table, 0.07 and 0.20 which represent a low and high example of potential earthquake in Kensington, NH.

		Wood Frame Construction				**Reinforced Masonry**				**Unreinforced Masonry**	
PGA (g)		High	Mod.	Low	Precode	High	Mod.	Low	Precode	Low	Precode
0.07	**Single Family**	**0.1**	**0.2**	**0.3**	**0.4**	**0.1**	**0.2**	**0.4**	**0.5**	**0.6**	**1.0**
0.20		**1.3**	**1.7**	**2.8**	**3.3**	**1.3**	**2.5**	**6.1**	**9.0**	**6.5**	**9.4**
0.07		0	0	1	1	0	1	2	7	6	12
0.20		2	3	9	15	4	16	58	106	64	114
0.07	**Apartment**	**0.1**	**0.2**	**0.3**	**0.3**	**0.1**	**0.2**	**0.4**	**0.5**	**0.6**	**0.8**
0.20		**1.5**	**1.9**	**3.0**	**3.2**	**1.5**	**2.6**	**5.4**	**6.9**	**5.5**	**7.5**
0.07		0	0	1	1	0	1	2	8	7	13
0.20		2	3	10	16	4	19	72	129	76	147
		Steel Frame (Braced)				**Reinforced Masonry**				**Unreinforced Masonry**	
		High	Mod.	Low	Precode	High	Mod.	Low	Precode	Low	Precode
0.7	**Retail Trade**	**0.2**	**0.3**	**0.4**	**0.5**	**0.1**	**0.2**	**0.4**	**0.6**	**0.7**	**1.0**
0.20		**2.4**	**2.8**	**3.8**	**5.6**	**1.5**	**2.7**	**5.9**	**8.3**	**6.1**	**8.7**
0.07		0	0	0	0	0	0	0	1	1	2
0.20		2	3	6	12	1	3	12	22	14	24
		Pre-Cast Concrete Tilt-up				**Light Metal Building**					
		High	Mod.	Low	Precode	High	Mod.	Low	Precode		
0.07	**Wholesale Trade**	**0.2**	**0.4**	**0.5**	**0.6**	**0.4**	**0.7**	**1.0**	**1.6**		
0.20		**2.6**	**4.1**	**8.3**	**10.8**	**3.8**	**5.4**	**10.3**	**14.8**		
0.07		0	1	1	2	1	2	3	6		
0.20		4	8	22	36	6	13	28	43		
0.07	**Office Building**	**0.2**	**0.3**	**0.4**	**0.6**	**0.2**	**0.3**	**0.4**	**0.5**		
0.20		**2.0**	**2.9**	**5.6**	**8.1**	**2.5**	**2.9**	**3.7**	**5.2**		
0.07		0	0	0	1	0	0	0	1		
0.20		1	3	11	21	2	3	5	11		
		Pre-cast Concrete Tilt-up									
		High	Mod.	Low	Precode						
0.07	**Light Industrial**	**0.1**	**0.4**	**0.4**	**0.5**						
0.20		**2.6**	**3.9**	**6.0**	**7.4**						
0.07		0	1	1	2						
0.20		4	7	21	34						

2.0	Building Damage = % of damage based on value
2	Loss of Function (# of Days)
	No Information

High, Moderate, Low and Precode refer to general seismic design level

CHAPTER VI – EXISTING HAZARD MITIGATION ACTIONS

Table 8: Existing Mitigation Strategies

Existing Protection	Protections Provided	Responsible Local Agent	Effectiveness (Poor, Avg., Good)	Recommended Changes-Actions-Comments
Kensington Police Dept	Coordinated Response Nixel reporting	Police Chief	Good	Emergency Personnel training occurs regularly for effective emergency response
Kensington Fire Dept.	Search & Rescue, Fire, Recovery; All Volunteer Department. Back up power is provided to the station and portions of the school/shelter next-door.	Fire Chief	Good	Emergency Personnel training occurs regularly for effective emergency response
Emergency Operations Center (Fire Dept.)	Provide coordinated support services, communications (local & State), backup facility to PD	Emergency Management Director (EMD), Fire Chief, Police Chief	Good	Emergency Management is currently evaluating upgrades for the EOC.
Mutual Aid Organizations	Regional agreements for fire response and public safety	Emergency Management	Good	Evaluated annually for coordinated response.
Annual Training	Emergency preparedness training by Fire, Police, EMD	Emergency Management	Good	Search and rescue, radiation and hazmat drills held annually.
KPD, KFD, EOC – Disaster Training & drills	Training addresses Seabrook Station, Wildfire, and Flooding	Emergency Management	Average	Wildfire and Seabrook training drills are annual and are positive. Flooding drills needed to be more consistent.
Safety Committee	Building Inspector, Fire Chief and Selectmen check safety status and potential at town building on a rotating schedule. One building is inspected every 4 months.	Emergency management/Building Inspector	Average	Committee annually checks public buildings with the exception of the Elementary School.
START Team	Kensington is a dues paying member of the START which address Hazmat disaster in the region.	Fire Chief	Good	Annually participates in regional training.
Wetland Ordinance	50-foot setback for structures from Hydric B soils, 100-foot setback for structures from Hydric A soils.	Planning Board/Code Enforcement	Good	Reviewed annually during applications for development.

Existing Protection	Protections Provided	Responsible Local Agent	Effectiveness (Poor, Avg., Good)	Recommended Changes- Actions- Comments
Subdivision and Site Plan Review Regulations	Storm water drainage regulations require street drainage designed to 25-year storms, culverts and detention pond to 100-year storms. Off-site increases of off site run-off are not allowed for storm events up to and including 100-year storms. All subdivision and site plans require erosion and sediment control plans. No apparent storm water design requirements for site plans.	Planning Board	Average	Regulations may need to be updated to current best management standards.
Emergency Operations Plan	Plan promotes effective emergency response in the instance of an accident or natural disaster.	EMD	Average	Emergency Management is in the process of currently updating the EOP.
Seacoast Tree	Ensures proper tree and or branch removal during storm events where tree damage is persistent.	Road Manager	Good	Reviewed annually for effectiveness.
Alert Now	An alert system provided by the school regarding emergencies, weather advisory and or school closings.	Kensington Elementary School	Good	Performed annually during times of poor weather or school emergencies.

CHAPTER VII – POTENTIAL MITIGATION ACTIONS

POTENTIAL MITIGATION STRATEGIES

The Action Plan was developed by analyzing the existing Town programs, the proposed improvements and changes to these programs. Additional programs were also identified as potential mitigation strategies. These potential mitigation strategies were ranked in five categories according to how they accomplished each item:

- Prevention
- Property Protection
- Structural Protection
- Emergency Services
- Public Information and Involvement

Table 9: Potential Mitigation Strategies

Mitigation Strategies or Action	Hazard(s) Mitigated	Mitigation Category	Description	Status 2012: New/Completed/Deferred /Removed
Educate residents through public outreach, forums, quarterly reports (mailed), calendars, KES marquee sign, Town Web site	All	Public Information and Involvement	None	Defferred- Public outreach programs through mailings, the town website and other forms of notice are continuous to promote effective hazard mitigation techniques on the individual level.
4-wheel drive SUV	All	Emergency Services	Floods; crossing water covered roads and responding to emergency situations would be easily accomplished with the right vehicular response equipment. This vehicle could also serve as a mobile command post for, and during critical incidents suffered from a variety of hazard events.	Complete

Mitigation Strategies or Action	Hazard(s) Mitigated	Mitigation Category	Description	Status 2012: New/Completed/Deferred /Removed
Flat bottom boat	Flooding	Emergency Services	A flat bottom boat would help emergency responders be more effective and efficient in saving lives during flooding events.	Deferred- Emergency personnel would like to provide water response training prior to obtaining the water rescue boat.
Emergency strobe light (replacement for standard flares)	All	Emergency Services	None	Deferred- Emergency response equipment such as but not limited to, road flares, cones, and sign boards will help with notification processes.
Illuminated signs. 2 programmable signs that can be hitched to trailers for portable use.	All	Emergency Services	None	Deferred- obtaining programmable signs will help with emergency notifications.
Night Vision Equipment	Lost/missing persons (All)	Emergency Services	None	Complete
Generator at the town hall and police department	All	Emergency Services	Currently, there is no a back-up power source in place at the town hall. The police department is completely shut down during power failures. This is unacceptable for day to day operations and responding to any and all emergency situations	Complete
Generator at Kensington Elementary School (as well as Library and Church)	All Requiring the opening of a shelter	Emergency Services	Kensington Elementary School requires back up power, minimum size 20kW to power lights, heat, water pump, and gym lighting system (primary shelter facility in community	Deferred- A new generator as well as rewiring the school, or parts thereof, for compatibility is needed for accomplishing this action. Generators for the Library and Church would also help allow for more sheltering
Generator at the town Grange	Back up shelter if Kensington Elementary School requires evacuation	Emergency Services	Would benefit the community as this hall is used as an emergency shelter if the Elementary School is evacuated and could also be used if people are evacuated from their homes in a storm but don't need to leave town.	Deferred- the town continues to think of, and maintain, as a backup shelter.

Mitigation Strategies or Action	Hazard(s) Mitigated	Mitigation Category	Description	Status 2012: New/Completed/Deferred /Removed
Cots and Blankets	All	Emergency Services	As an example, during the floods of Spring 2006, we had to wait for the Red Cross to bring cots and blankets to our town for those that needed to be evacuated.	Deferred- The town has obtained wool blankets but is need of obtaining different ones.
Establish Life Flight Landing Zones	Any hazard requiring life flight evacuation	Emergency Services	None	Complete
Finish Updating EOP	All Hazards requiring Emergency Response	Prevention	None	Deferred- the town is currently in the process of updating their emergency operations plan.
Establish Red Cross certification of Kensington Elementary School as Primary Shelter	All Hazard requiring Emergency Sheltering	Emergency Services	None	Deferred- SAU 16 has granted approval for the school to be used as a shelter.
Join NFIP	Flooding	Prevention, Property Protection	None	Deferred- The planning Board is in the process of investigating the steps and ordinances for becoming enrolled in the NFIP.
Identify HAM radio operators in Kensington	Any hazard requiring emergency communications	Prevention, Emergency Services	None	Complete
Cable Access Channel	Any Hazards Requiring Emergency Notification	Emergency Services	Would allow Town Officials/Police Department/Fire Department to communicate emergency information quickly to the community and serve as an educational tool for preparation recommendations.	Removed- This activity is not a town mitigation priority at this time.

Mitigation Strategies or Action	Hazard(s) Mitigated	Mitigation Category	Description	Status 2012: New/Completed/Deferred /Removed
Highland Road drainage improvements	Flooding	Structural Protection	Need a catch basin 12" out full pipe and under driveway up the north side of the road approximately 400 lf starting at the Mertinooke driveway. Cost about $15,000. Need for project is high as it drains the road and takes care of runoff from the hill on the east side of the road.	Complete
Drinkwater road culvert replacement	Flooding	Structural Protection	Need a 24" culvert at Hampton Falls town line. Cost $3500. Swales have been dug on north side of the road to bring water to the culvert, but the culvert is old and moves with the frost.	Deferred- there is a need to replace this culvert with an adequate sized one that will allow for unobstructed flow of water (in process).
Moulton Ridge Culvert and drainage improvements	Flooding	Structural Protection	At the Lambert property last May, the road washed out because culvert was too small and culvert is rotted on the bottom. Cost for new 36" installed $4000. Need an under drain on both sides of the road from the Smith property to the end of the road or top of the hill, approximately 500 lf each side. Cost $9500. The water has washed out both edges of the road. We have put tailings back to hold the road but water is still there	Complete
Mock scenario training for flooding events, snowstorms, and other natural/man-made hazards	Flooding, Winter Weather	Emergency Services	Emergency management thinks it important to establish a clear command and control process for this type of hazard event.	**New**
DPW coordinated management call list/plan	Flooding/ Wildfire	Emergency Services	Emergency Management hopes to develop a coordinated communications system for addressing emergency hazard events in town.	**New**
Develop an evacuation plan for severe flooding events and all other natural hazards that may cause evacuation disruption	Flooding/ All Hazards	Emergency Services/ Public Information and Involvement	Emergency Management hopes to develop a pamphlet, insure information is located within the elementary school newsletters, as well as obtain the Ping Four cell phone app in order to send out emergency notifications.	**New**

Mitigation Strategies or Action	Hazard(s) Mitigated	Mitigation Category	Description	Status 2012: New/Completed/Deferred /Removed
Amend and develop effective erosion control and stormwater management regulations	Flooding	Prevention/ Property Protection	Ensuring that future development adequately provides for proper stormwater management and erosion controls is essential for mitigating future losses to flooding and other erosion events.	**New**
Elevate Kimball road 2-2.5 feet as delineated on the past and future hazards map. Potentially add new culvert N12 pipes in order to decrease flood potential and increase water flow from one side of the street to the other	Flooding	Structural/ Property Protection	It is important to ensure that this evacuation road is clear during times of evacuation and severe weather events.	**New**

CHAPTER VIII – PRIORITIZATION OF MITIGATION ACTIONS

The goal of each strategy or action is reduction or prevention of damage from a hazard event. In order to determine their effectiveness in accomplishing this goal, a set of criteria was applied to each proposed strategy. A set of questions developed by the Committee that included the STAPLEE method was developed to rank the proposed mitigation actions. The STAPLEE method analyzes the Social, Technical, Administrative, Political, Legal, Economic and Environmental aspects of a project and is commonly used by public administration officials and planners for making planning decisions. The following questions were asked about the proposed mitigation strategies identified in Table __:

- Does it reduce disaster damage?
- Does it contribute to other goals?
- Does it benefit the environment?
- Does it meet regulations?
- Will historic structures be saved or protected?
- Does it help achieve other community goals?
- Could it be implemented quickly?

STAPLEE criteria:

- **Social**: Is the proposed strategy socially acceptable to the community? Are there equity issues involved that would mean that one segment of the community is treated unfairly?
- **Technical**: Will the proposed strategy work? Will it create more problems than it solves?
- **Administrative**: Can the community implement the strategy? Is there someone to coordinate and lead the effort?
- **Political**: Is the strategy politically acceptable? Is there public support both to implement and to maintain the project?
- **Legal**: Is the community authorized to implement the proposed strategy? Is there a clear legal basis or precedent for this activity?
- **Economic**: What are the costs and benefits of this strategy? Does the cost seem reasonable for the size of the problem and the likely benefits?
- **Environmental**: How will the strategy impact the environment? Will the strategy need environmental regulatory approvals?

Each proposed mitigation strategy was evaluated using the above criteria and assigned a score (Good = 3, Average = 2, Poor = 1) based on the above criteria. An evaluation chart with total scores for each strategy can be found in the collection of individual tables under Table 9.

Table 10.1: DPW coordinated management call list/plan

Criteria	Evaluation Rating (1-3)
Does it reduce disaster damage?	3
Does it contribute to other goals?	3
Does it benefit the environment?	3
Does it meet regulations?	3
Will historic structures be saved or protected?	3
Could it be implemented quickly?	3
S: Is it Socially acceptable?	3
T: Is it Technically feasible and potentially successful?	3
A: Is it Administratively workable?	3
P: Is it Politically acceptable?	3
L: Is there Legal authority to implement?	3
E: Is it Economically beneficial?	3
E: Are other Environmental approvals required?	3
Score	**39**

Table 10.2: Amend and develop effective erosion control and stormwater management regulations

Criteria	Evaluation Rating (1-3)
Does it reduce disaster damage?	3
Does it contribute to other goals?	3
Does it benefit the environment?	3
Does it meet regulations?	3
Will historic structures be saved or protected?	3
Could it be implemented quickly?	2
S: Is it Socially acceptable?	3
T: Is it Technically feasible and potentially successful?	3
A: Is it Administratively workable?	3
P: Is it Politically acceptable?	3
L: Is there Legal authority to implement?	3
E: Is it Economically beneficial?	3
E: Are other Environmental approvals required?	3
Score	**38**

Table 10.3: Join NFIP

Criteria	Evaluation Rating (1-3)
Does it reduce disaster damage?	3
Does it contribute to other goals?	3
Does it benefit the environment?	3
Does it meet regulations?	3
Will historic structures be saved or protected?	2
Could it be implemented quickly?	2
S: Is it Socially acceptable?	3
T: Is it Technically feasible and potentially successful?	3
A: Is it Administratively workable?	3
P: Is it Politically acceptable?	2
L: Is there Legal authority to implement?	3
E: Is it Economically beneficial?	3
E: Are other Environmental approvals required?	3
Score	**36**

Table 10.4: Mock scenario training for flooding events, snowstorms, and other natural/man-made hazards

Criteria	Evaluation Rating (1-3)
Does it reduce disaster damage?	2
Does it contribute to other goals?	3
Does it benefit the environment?	2
Does it meet regulations?	3
Will historic structures be saved or protected?	3
Could it be implemented quickly?	2
S: Is it Socially acceptable?	3
T: Is it Technically feasible and potentially successful?	3
A: Is it Administratively workable?	3
P: Is it Politically acceptable?	3
L: Is there Legal authority to implement?	3
E: Is it Economically beneficial?	3
E: Are other Environmental approvals required?	3
Score	**36**

Table 10.5: Develop an evacuation plan for severe flooding events and all other natural hazards that may cause evacuation disruption

Criteria	Evaluation Rating (1-3)
Does it reduce disaster damage?	3
Does it contribute to other goals?	3
Does it benefit the environment?	2
Does it meet regulations?	3
Will historic structures be saved or protected?	1
Could it be implemented quickly?	3
S: Is it Socially acceptable?	3
T: Is it Technically feasible and potentially successful?	3
A: Is it Administratively workable?	3
P: Is it Politically acceptable?	3
L: Is there Legal authority to implement?	3
E: Is it Economically beneficial?	3
E: Are other Environmental approvals required?	3
Score	**36**

Table 10.6: Elevate Kimball road 2-2.5 feet as delineated on the past and future hazards map. Potentially add new culvert N12 pipes in order to decrease flood potential and increase water flow from one side of the street to the other

Criteria	Evaluation Rating (1-3)
Does it reduce disaster damage?	3
Does it contribute to other goals?	3
Does it benefit the environment?	3
Does it meet regulations?	3
Will historic structures be saved or protected?	3
Could it be implemented quickly?	3
S: Is it Socially acceptable?	3
T: Is it Technically feasible and potentially successful?	3
A: Is it Administratively workable?	3
P: Is it Politically acceptable?	2
L: Is there Legal authority to implement?	3
E: Is it Economically beneficial?	3
E: Are other Environmental approvals required?	1
Score	**36**

Table 10.7: Finish Updating EOP

Criteria	Evaluation Rating (1-3)
Does it reduce disaster damage?	1
Does it contribute to other goals?	3
Does it benefit the environment?	2
Does it meet regulations?	3
Will historic structures be saved or protected?	2
Could it be implemented quickly?	3
S: Is it Socially acceptable?	3
T: Is it Technically feasible and potentially successful?	3
A: Is it Administratively workable?	3
P: Is it Politically acceptable?	3
L: Is there Legal authority to implement?	3
E: Is it Economically beneficial?	3
E: Are other Environmental approvals required?	3
Score	**35**

Table 10.8: Identify HAM radio operators in Kensington

Criteria	Evaluation Rating (1-3)
Does it reduce disaster damage?	2
Does it contribute to other goals?	3
Does it benefit the environment?	2
Does it meet regulations?	3
Will historic structures be saved or protected?	2
Could it be implemented quickly?	3
S: Is it Socially acceptable?	3
T: Is it Technically feasible and potentially successful?	3
A: Is it Administratively workable?	3
P: Is it Politically acceptable?	3
L: Is there Legal authority to implement?	3
E: Is it Economically beneficial?	2
E: Are other Environmental approvals required?	3
Score	**35**

Table 10.9: Drink Water Road culvert replacement

Criteria	Evaluation Rating (1-3)
Does it reduce disaster damage?	3
Does it contribute to other goals?	3
Does it benefit the environment?	3
Does it meet regulations?	3
Will historic structures be saved or protected?	2
Could it be implemented quickly?	3
S: Is it Socially acceptable?	3
T: Is it Technically feasible and potentially successful?	3
A: Is it Administratively workable?	3
P: Is it Politically acceptable?	2
L: Is there Legal authority to implement?	3
E: Is it Economically beneficial?	3
E: Are other Environmental approvals required?	1
Score	**35**

Table 10.10: Educate residents about emergency preparedness through public outreach, forums, quarterly reports (mailed), calendars, KES marquee sign, Town Web site, and join NIXL

Criteria	Evaluation Rating (1-3)
Does it reduce disaster damage?	1
Does it contribute to other goals?	3
Does it benefit the environment?	1
Does it meet regulations?	3
Will historic structures be saved or protected?	2
Could it be implemented quickly?	3
S: Is it Socially acceptable?	3
T: Is it Technically feasible and potentially successful?	3
A: Is it Administratively workable?	3
P: Is it Politically acceptable?	3
L: Is there Legal authority to implement?	3
E: Is it Economically beneficial?	3
E: Are other Environmental approvals required?	3
Score	**34**

Table 10.11: Emergency strobe light (replacement for standard flares) as well as road flares, cones, illuminated signs and 2 programmable signs that can be hitched to trailers

Criteria	Evaluation Rating (1-3)
Does it reduce disaster damage?	1
Does it contribute to other goals?	3
Does it benefit the environment?	1
Does it meet regulations?	3
Will historic structures be saved or protected?	1
Could it be implemented quickly?	3
S: Is it Socially acceptable?	3
T: Is it Technically feasible and potentially successful?	3
A: Is it Administratively workable?	3
P: Is it Politically acceptable?	3
L: Is there Legal authority to implement?	3
E: Is it Economically beneficial?	3
E: Are other Environmental approvals required?	3
Score	**33**

Table 10.12: Obtain Generator for the Elementary School/shelter and rewire school to accommodate the generator

Criteria	Evaluation Rating (1-3)
Does it reduce disaster damage?	2
Does it contribute to other goals?	3
Does it benefit the environment?	1
Does it meet regulations?	3
Will historic structures be saved or protected?	1
Could it be implemented quickly?	2
S: Is it Socially acceptable?	3
T: Is it Technically feasible and potentially successful?	3
A: Is it Administratively workable?	3
P: Is it Politically acceptable?	3
L: Is there Legal authority to implement?	3
E: Is it Economically beneficial?	3
E: Are other Environmental approvals required?	1
Score	**33**

Table 10.13: Establish Red Cross certification of Kensington Elementary School as Primary Shelter

Criteria	Evaluation Rating (1-3)
Does it reduce disaster damage?	1
Does it contribute to other goals?	3
Does it benefit the environment?	2
Does it meet regulations?	3
Will historic structures be saved or protected?	1
Could it be implemented quickly?	1
S: Is it Socially acceptable?	3
T: Is it Technically feasible and potentially successful?	3
A: Is it Administratively workable?	3
P: Is it Politically acceptable?	3
L: Is there Legal authority to implement?	3
E: Is it Economically beneficial?	3
E: Are other Environmental approvals required?	0
Score	**32**

Table 10.14: Obtain new Cots and Blankets for shelters and emergency response

Criteria	Evaluation Rating (1-3)
Does it reduce disaster damage?	1
Does it contribute to other goals?	3
Does it benefit the environment?	1
Does it meet regulations?	3
Will historic structures be saved or protected?	1
Could it be implemented quickly?	3
S: Is it Socially acceptable?	2
T: Is it Technically feasible and potentially successful?	3
A: Is it Administratively workable?	3
P: Is it Politically acceptable?	2
L: Is there Legal authority to implement?	3
E: Is it Economically beneficial?	3
E: Are other Environmental approvals required?	3
Score	**31**

Table 10.15: Flat bottom boat with training

Criteria	Evaluation Rating (1-3)
Does it reduce disaster damage?	1
Does it contribute to other goals?	3
Does it benefit the environment?	1
Does it meet regulations?	3
Will historic structures be saved or protected?	1
Could it be implemented quickly?	2
S: Is it Socially acceptable?	3
T: Is it Technically feasible and potentially successful?	3
A: Is it Administratively workable?	3
P: Is it Politically acceptable?	2
L: Is there Legal authority to implement?	3
E: Is it Economically beneficial?	2
E: Are other Environmental approvals required?	3
Score	**30**

Table 10.16: Obtain Generator for the Grange hall

Criteria	Evaluation Rating (1-3)
Does it reduce disaster damage?	1
Does it contribute to other goals?	3
Does it benefit the environment?	1
Does it meet regulations?	3
Will historic structures be saved or protected?	2
Could it be implemented quickly?	1
S: Is it Socially acceptable?	2
T: Is it Technically feasible and potentially successful?	2
A: Is it Administratively workable?	3
P: Is it Politically acceptable?	1
L: Is there Legal authority to implement?	3
E: Is it Economically beneficial?	2
E: Are other Environmental approvals required?	3
Score	**27**

CHAPTER IX – ACTION PLAN

This step involves developing an action plan that outlines who is responsible for implementing each of the prioritized strategies determined in the previous step, as well as when and how the actions will be implemented. The following questions were asked to develop an implementation schedule for the identified priority mitigation strategies:

WHO? Who will lead the implementation efforts? Who will put together funding requests and applications?

HOW? How will the community fund these projects? How will the community implement these projects? What resources will be needed to implement these projects?

WHEN? When will these actions be implemented, and in what order?

Table 11: Action Plan for proposed mitigation actions

Score	Project	Responsibility/ Oversight	Funding/ Support	Estimated Cost	Timeframe
39	DPW coordinated management call list/plan	Road Manager/ EMD	Local	None	2013-14
38	Amend and develop effective erosion control and stormwater management regulations	Road manager/Planning Board	Local and State grants	$0 - $5,000	2013-14
36	Join NFIP	Planning Board/Selectmen	Local	$2,000	2013-14
36	Mock scenario training for flooding events, snowstorms, and other natural/man-made hazards	EMD/Police Chief/Fire Chief	Local	None	2013-14
36	Develop an evacuation plan for severe flooding events and all other natural hazards that may cause evacuation disruption	EMD/Police Chief/Fire Chief	Local	$2,000	2013-14

Score	Project	Responsibility/ Oversight	Funding/ Support	Estimated Cost	Timeframe
36	Elevate Kimball road 2-2.5 feet as delineated on the past and future hazards map. Potentially add new culvert N12 pipes in order to decrease flood potential and increase water flow from one side of the street to the other	Road manager	Local, State and Federal Grants	$75,000 - $100,000	2013-15
35	Finish Updating EOP	EMD	State and Federal Grant	$10,000	2013-14
35	Identify HAM radio operators in Kensington	EMD	Local	$1,000	2013-14
35	Drink Water Road culvert replacement	Road Manager	Local, State and Federal Grants	$32,000	2013-15
34	Educate residents about emergency preparedness through public outreach, forums, quarterly reports (mailed), calendars, KES marquee sign, Town Web site, and join NIXL	EMD/Police Chief	Local	None	2013-14
33	Emergency strobe light (replacement for standard flares) as well as road flares, cones, illuminated signs and 2 programmable signs that can be hitched to trailers	Police Chief/ Fire Chief	Local, State and Federal Grants	$15,000	2013-14
33	Obtain Generator for the Elementary School/shelter and rewire school to accommodate such generator	EMD/Kensington Elementary School Principal	Local, State and Federal Grants	$75,000 - $150,000	2013-14
32	Establish Red Cross certification of Kensington Elementary School as Primary Shelter	EMD/Kensington Elementary School Principal	Red Cross	$0 - $5,000	2013-14
31	Obtain new Cots and Blankets for shelters and emergency response	EMD	Local, State and Federal Grants	$10,000 - $20,000	2013-14
30	Flat bottom boat with training	Fire Chief	Local, State and Federal Grants	$15,000	2013-18

Score	Project	Responsibility/ Oversight	Funding/ Support	Estimated Cost	Timeframe
27	Obtain Generator for the Grange hall	EMD	Local, State and Federal Grants	$50,000	2013-2015

CHAPTER X – INCORPORATING, MONITORING, EVALUATING AND UPDATING THE PLAN

Incorporating the Plan into Existing Planning Mechanisms

Upon completion and approval by FEMA and the State of New Hampshire, the Plan will be adopted as a standalone document of the Town and as an appendix of the Town's Emergency Operations Plan (EOP). An update of the EOP is continuing; future updates to the EOP will incorporate the Plan as a referenced appendix, but the two plans will always be printed as separated documents. The EOP is subject to annual review.

The town has utilized the 2007 Hazard Mitigation Plan and the following strategies for incorporation into other planning mechanisms:

- The town used the 2007 plan for purchasing a 4-wheel drive SUV;
- Emergency Management obtained a generator for use at the town hall & police station in case of emergency power back-up; and
- The town established Life Flight Landing Zones as located in the 2007 mitigation strategies section.

Currently, the town is utilizing the 2013 plan update in the following ways:

- Kensington is hoping to join the NFIP by March 2014 and is in the process of updating their regulations in order to do so;
- The town is currently in the process of updating their Emergency Operations Plan;
- The Town has established Nixel for broad messaging to residents, and has established a Kensington Emergency Management Facebook page to update residents about emergency preparedness, however work is still needed to broaden the outreach and with this plan hopefully that will happen; and
- With reverse 911, emergency management has identified the Police Chief and EMD as the town contacts from the state for public notification.

In the future, the Hazard Mitigation Plan will be consulted when the Town updates its Capital Improvement Program (CIP). The Capital Improvements Committee is responsible for updating the CIP annually, and will review the Action Plan, as it has done before, during each update. This committee in conjunction with Kensington Emergency Management will determine what items can and should be added to the CIP based on the Town's annual budget and possible sources of other funding. Portions of this plan should be referred to when updates to the towns Master Plan takes place. Considerations about future land use and proximity to current and potential hazard areas need to be inherently part of the planning process. NH RSA 674:2 (d) gives towns the authority to include a natural hazards section, which documents the physical characteristics, severity, and extent of any potential natural hazards to the community, within the framework of a Master Plan.

Monitoring, Evaluating and Updating the Plan

Recognizing that many mitigation projects are continual, and that while in the implementation stage communities may suffer budget cuts, experience staff turnover, or projects may fail altogether, a good plan needs to provide for periodic monitoring and evaluation of its successes and failures and allow for updates of the Plan where necessary.

In order to track progress and update the Mitigation Strategies identified in the Action Plan (Table 11), it is recommended that the Town revisit the Plan annually, or after a hazard event. If it is not realistic or appropriate to revise the Plan every year, then the Plan will be revisited no less than every five years per FEMA requirements. The Emergency Management Director is responsible for initiating this review with members of the Town that are appropriate including members of the public. In keeping with the process of adopting the 2011/12 Plan Update and per NH State RSA 91-A, a public meeting to receive public comment on Plan maintenance and updating will be held during any review of the Plan. This publicly noticed meeting (via town website, and postings in the town office, library, or local newspaper) will allow for members of the community not involved in developing the Plan to provide input and comments each time the Plan is revised. The final revised Plan will be adopted by the Board of Selectmen appropriately, at a second publicly noticed meeting.

Changes should be made to the Plan to accommodate for projects that have failed or are not considered feasible after a review for their consistency with STAPLEE, the timeframe, the community's priorities, and funding resources. Priorities that were not ranked high, but identified as potential mitigation strategies, should be reviewed as well during the monitoring and update of this Plan to determine feasibility of future implementation.