LEWIS COUNTY
MULTI-JURISDICTIONAL
NATURAL HAZARD MITIGATION PLAN

NOVEMBER 2010

Prepared by:

URS

Multi-Jurisdictional Natural Hazard Mitigation Plan Lewis County, New York

Prepared for

Lewis County
Fire and Emergency Management
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November 2010

PLAN ADOPTION RESOLUTIONS

In accordance with Part 201.6 of the Disaster Mitigation Act of 2000 (DMA 2000), Lewis County, New York, has developed this Multi-Jurisdictional Hazard Mitigation Plan to identify hazards that threaten the County and ways to reduce future damages associated with these hazards.

Following this page are the signed adoption resolutions of the County and all participating jurisdictions that have adopted this plan, authorizing municipal government staff to carry out the actions detailed herein.

Signed resolutions of adoption by all participating jurisdictions have been inserted following this page after FEMA reviewed the draft plan and determined that it was approvable. It was recommended that municipalities in Lewis County consider using the Sample Adoption Resolution from the FEMA Region 2 "Hazard Mitigation Plan Development Tool Kit CD", as shown below. Failure of any participating jurisdiction to ultimately adopt the plan and provide their adoption resolution to FEMA will result in a determination from FEMA that such jurisdiction has not successfully met the requirements of DMA 2000 and that the community does not have a plan ñin placeò.

SAMPLE
ADOPTION RESOLUTION

Note: This sample plan adoption resolution has been extracted from FEMA Region 2's "Hazard Mitigation Plan Development Tool Kit" CD (April 2009). It is recommended that municipalities in Lewis County consider using this resolution when adopting the Final Plan.

(Name of Jurisdiction) Town A

(Governing Body) Town Council

(Address) 100 Main Street, Town A

RESOLUTION

WHEREAS, Town A, with the assistance from URS Corporation, has gathered information and prepared the Lewis County, New York, Multi-Jurisdictional Hazard Mitigation Plan ("the Plan"); and

WHEREAS, the Plan has been prepared in accordance with the Disaster Mitigation Act of 2000; and

WHEREAS, Town A is a local unit of government that has afforded the citizens an opportunity to comment and provide input in the Plan and the actions in the Plan; and

WHEREAS, Town A has reviewed the Plan and affirms that the Plan will be updated no less than every five years;

NOW THEREFORE, BE IT RESOLVED by Town Council that Town A adopts the Lewis County, New York, Multi-Jurisdictional Hazard Mitigation Plan as this jurisdiction's Natural Hazard Mitigation Plan, and resolves to execute the actions in the Plan.

ADOPTED this (date) day of (Month), (year) at a meeting of the Town Council.

_____
(Mayor)

_____
(Clerk)

EXECUTIVE SUMMARY

Across the United States and around the world, natural disasters occur each day, as they have for thousands of years. As the worldôs population and development have increased, so have the effects of these natural disasters. The time and money required to recover from these events often strain or exhaust local resources. The purpose of hazard mitigation planning is to identify policies, actions, and tools for implementation that will, over time, work to reduce risk and the potential for future losses. Hazard mitigation is best realized when community leaders, businesses, citizens, and other stakeholders join together an in effort to undertake a process of learning about hazards that can affect their area and use this knowledge to prioritize needs and develop a strategy for reducing damages.

Section 322, Mitigation Planning, of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (ñthe Stafford Actò), enacted by Section 104 of the Disaster Mitigation Act of 2000 (ñDMA 2000ò), provides new and revitalized approaches to mitigation planning. Section 322 continues the requirement for a State mitigation plan as a condition of disaster assistance, and establishes a new requirement for local mitigation plans. In order to apply for Federal aid for technical assistance and post-disaster funding, local jurisdictions must comply with DMA 2000 and its implementing regulations (44 CFR Part 201.6).

While Lewis County has always sought ways to reduce their vulnerability to hazards, the passage of DMA 2000 helped County officials to recognize the benefits of pursuing a long-term, coordinated approach to hazard mitigation through hazard mitigation planning. The County has received grant funds from the Federal Emergency Management Agency (FEMA) for the purpose of developing this very hazard mitigation plan. Funding was received under the Hazard Mitigation Grant Program for development of a multi-jurisdictional hazard mitigation plan for the County and as many of its 26 municipalities that chose to participate. This **Lewis County Multi-Jurisdictional Natural Hazard Mitigation Plan** represents the collective efforts of the county and 20 fully participating jurisdictions, the general public, and other stakeholders. While every municipal jurisdiction in Lewis County participated in the planning process to some degree, not every jurisdiction made sufficient contribution to the plan development to be considered *fully* participating.

The Lewis County Multi-Jurisdictional Hazard Mitigation Plan has been developed by the Lewis County Hazard Mitigation Planning Team (the ñPlanning Teamò), with support from outside consultants. The efforts of the Planning Committee were headed by James Martin of the Lewis County Office of Fire and Emergency Management (LCFEM) and Sarah Bullock of the Lewis County Department of Economic Development and Planning. The Planning Committee was supplemented by a Core Planning Group (CPG) and Jurisdictional Assessment Teams (JATs), with one JAT for each of the Countyôs participating jurisdictions.

The plan development process was initiated in earnest in the spring of 2009 with the project initiation meeting held on March 30, 2009, attended by County representatives and the consultant. A Kickoff Meeting of the full Core Planning Group was conducted on May 21, 2009. Thereafter, the Core Planning Group met on August 17th and 18th, 2009 (regionally split progress meetings); February 9th, 2010; and March 2nd, 2010. Jurisdictional Assessment Teams met individually throughout the plan development process as they deemed necessary.

Community support is vital to the success of any hazard mitigation plan. The Planning Committee provided opportunities for participation and input of the public and other stakeholders throughout the plan development process, both prior to this Draft and before approval of the Final plan, providing citizens and other stakeholders with opportunities to take part in the decisions that will affect their future. On a mitigation planning section of the Lewis County web site, the LCFEM posted information on the plan

development process and where to go for additional information or comments beginning in May 2009; this web site has been and continues to be maintained and updated regularly. The County also conducted numerous other outreach actions throughout the planning process. The public and other stakeholders were apprised of the hazard mitigation planning process via presentations to public meetings at the jurisdictional level by planning committee members and the posting of plan development status reports in municipal buildings. LCFEM also made it a point to speak of the mitigation planning process during regularly-scheduled public presentations on emergency preparedness initiatives. Jurisdictional Assessment Team members supplemented County efforts by reaching out to the public and other stakeholders within their respective jurisdictions to get the word out through various means and provide opportunities for feedback and participation.

The hazard mitigation planning process consisted of the following key steps:

- Researching a full range of natural hazards to identify which hazards could affect the County;
- Identifying the location and extent of hazard areas;
- Identifying assets located within these hazard areas;
- Characterizing existing and potential future assets at risk;
- Assessing vulnerabilities to the most prevalent hazards; and
- Formulation and prioritization of goals, objectives, and mitigation actions to reduce or avoid long-term vulnerabilities to the identified hazards.

The initial range of natural hazards that were assessed and from which the hazards to be profiled in detail were selected was as follows:

- ***Atmospheric hazards***: extreme temperatures, extreme wind, hurricanes/tropical storms, norôeasters, tornadoes, lightning, hailstorms, avalanches, and winter storms;
- ***Hydrologic hazards***: flooding, drought, ice jams, storm surges, coastal erosion, wave action, and dam failures;
- ***Geologic hazards***: earthquakes, landslides, volcanoes, tsunamis, expanding soils, and land subsidence;
- ***Other hazards***: wildfires.

The hazard identification phase of the planning process resulted in the selection of the following 11 hazards for detailed risk assessment profiling and potential mitigation actions:

- Extreme temperatures
- Extreme wind
- Tornados
- Winter storms
- Drought
- Earthquakes
- Wildfires

- Flooding
- Dam failure
- Ice jams
- Landslides

The first seven hazards listed are considered to be ñcounty-wideò hazards, i.e. those which are likely to occur in or affect all the municipal jurisdictions in the County. The remaining four are considered to affect or occur only in certain jurisdictions, based on criteria discussed in detail in Sections 2 and 3.

After evaluating these hazards and the assets potentially vulnerable to them within the County, the County and the 20 fully participating jurisdictions developed individual and collective mitigation strategies including 129 specific actions intended to reduce the risk of damages and losses from the profiled hazards, along with procedures for monitoring, evaluating and updating the Plan to ensure that it remains a ñliving document.ò

This Draft Plan is currently under review by the Planning Team, NYSEMO, FEMA, and the public and other stakeholders. Later, comments will be incorporated, and the County and all participating jurisdictions will each formally adopt the Final Plan. The Final Plan will include copies of adoption resolutions following Page i.

Natural disasters cannot be prevented from occurring. However, over the long-term, the continued implementations of the mitigation actions in this Plan will gradually, but steadily, lessen the impacts associated with natural hazard events in Lewis County.

If you have any questions or comments on the Multi-Jurisdictional Natural Hazard Mitigation Plan for Lewis County, New York, additional information can be obtained by contacting:

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Lowville, NY 13367
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ACKNOWLEDGEMENTS

Throughout the plan development process, the LCFEM worked tirelessly to involve all of its 26 municipalities. These local jurisdictions were not only invited to participate but were truly guided through the process by LCFEM at every stage.

The following municipal entities (Lewis County and 20 of its constituent municipalities) successfully in the development of this plan by attending meetings and submitting the key deliverables:

County of Lewis

Castorland, Village of
Constableville, Village of
Croghan, Town of
Croghan, Village of
Denmark, Town of
Diana, Town of
Greig, Town of
Harrisburg, Town of
Lewis, Town of
Leyden, Town of
Lowville, Town of
Lowville, Village of
Lyons Falls, Village of
Lyonsdale, Town of
Montague, Town of
Martinsburg, Town of
Osceola, Town of
Pinckney, Town of
Port Leyden, Village of
West Turin, Town of

A more detailed summary of the participation demonstrated by each municipality in the County, including attendance at meetings and submission of requested deliverables, is presented in Table 1.5.

In addition, the records show that the following stakeholder entities participated by attending at least one Core Planning Group meeting and/or submitting at least one completed questionnaire:

Hudson River-Black River Regulating District
Lewis County Soil and Water Conservation District
Lewis County Head Start
National Grid
NYSEMO Region 4

URS Corporation (Wayne, NJ) acted as the plan development consultant providing hazard mitigation planning services.

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SECTION 1 - INTRODUCTION

Purpose

Lewis County is susceptible to a number of different natural hazards. These natural hazards have the potential to cause property loss, loss of life, economic hardship, and threats to public health and safety. While an important aspect of emergency management deals with disaster recovery ï those actions that a community must take to repair damages and make itself whole in the wake of a natural disaster ï an equally important aspect of emergency management involves hazard mitigation. Hazard mitigation measures are efforts taken *before* a disaster happens to lessen the impact that future disasters will have on people and property in the community. They are things you do today to be more protected in the future.

Recognizing the risks that natural hazards pose to Lewis County, the Lewis County Office of Fire and Emergency Management submitted an application, and was approved for, grant monies from the Federal Emergency Management Agency (FEMA) under the Hazard Mitigation Grant Program in 2006 to be used to develop a hazard mitigation plan for the County.

This Lewis **County Multi-Jurisdictional Natural Hazard Mitigation Plan** (the ñPlanò) has been developed by the Lewis County Hazard Mitigation Planning Committee (the ñPlanning Committeeò), with support from outside consultants at URS Corporation (ñURS,ò the contractor responsible for providing the Planning Committee with hazard mitigation planning support services). The Plan represents the collective efforts of citizens, elected and appointed government officials, business leaders, volunteers of non-profit organizations, and other stakeholders.

Through the development of this Plan, the Planning Committee has identified the natural hazards that could affect the County, and has evaluated the risks associated with these hazards. The successful implementation of this Plan will make Lewis County more disaster-resistant because the County has taken the initiative to recognize the benefits that can be gained by planning ahead and taking measures to reduce damages before the next disaster strikes. The Plan will also allow Lewis County and participating jurisdictions to comply with the Disaster Mitigation Act of 2000 (DMA 2000) and itsô implementing regulations (44 CFR Part 201.6), thus resulting in eligibility to apply for Federal aid for technical assistance and post-disaster hazard mitigation project funding.

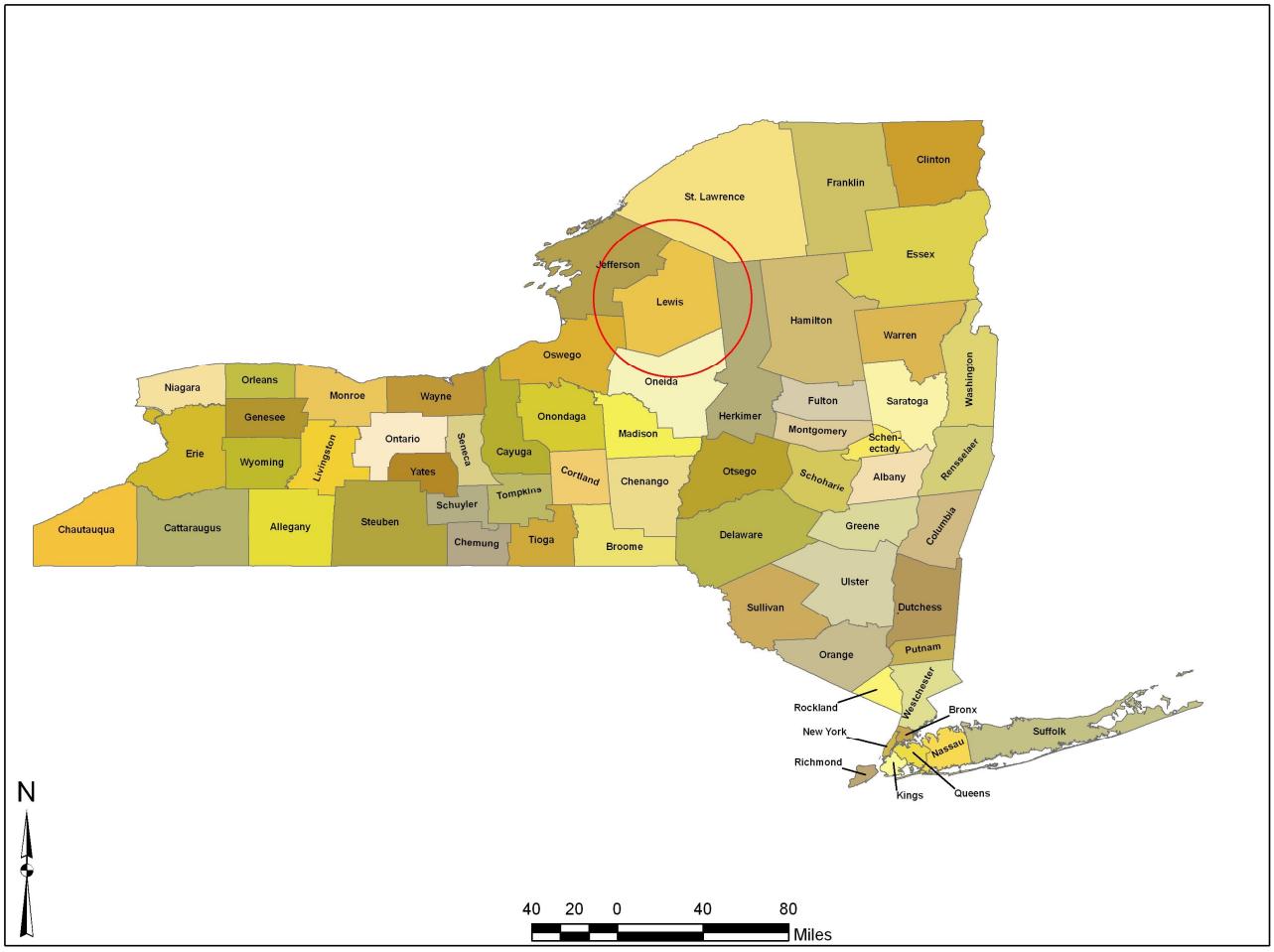
Natural disasters cannot be prevented from occurring. However, over the long-term, the continued implementation of this Plan will gradually, but steadily, lessen the impacts associated with hazard events.

About Lewis County

Overview

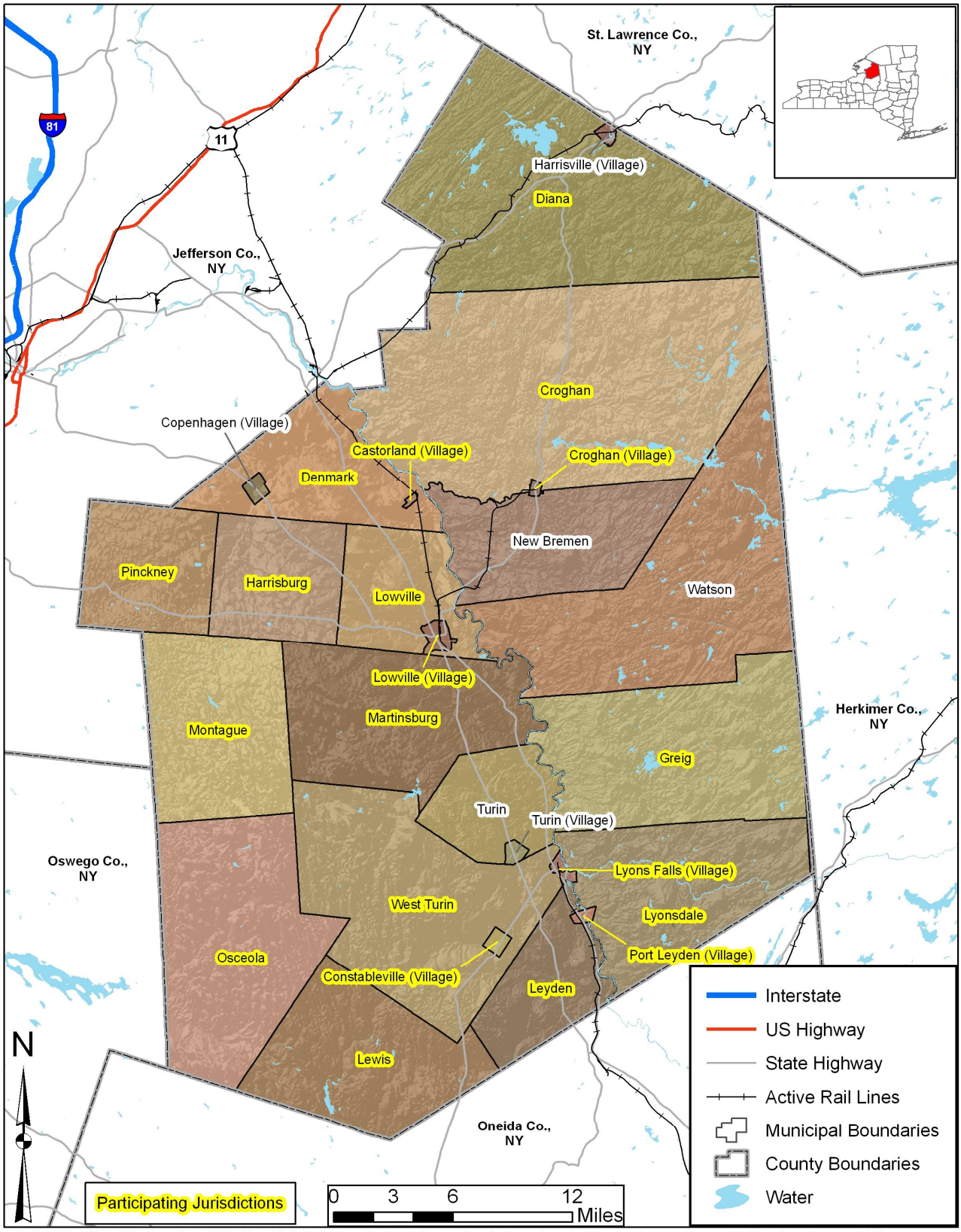
Lewis County is located in northwest New York State, north of Syracuse. The eastern part of the county is located in the Adirondack Park and the western part is home to a large portion of the Tug Hill Plateau. It is bounded to the north by St Lawrence County, to the east by Herkimer County, to the west by Oswego County, to the northwest by Jefferson County and to the south by Oneida County. As of the 2000 Census, the population of Lewis County was 26,944. The county seat is Lowville. Figure 1.1 depicts the location of Lewis County in relation to the rest of New York State.

Figure 1.1 - Location of Lewis County in New York State



Source: ESRI, US Counties, 2005

Figure 1.2 – Base Map of Lewis County



SOURCES: ESRI, U.S. Counties, 2005, New York Major Roads, 2000; Lewis County Department of Economic Development & Planning, Town and Village Boundaries; U.S. Census Bureau, Census Railroads, New York State, 2001, Herkimer, Oswego, Oneida, Lewis, Jefferson, St. Lawrence Counties, Area Hydrography, 2007; USGS, 1-Arc Second National Elevation Dataset, 2009

According to the US Census, the population of Lewis County in 1990 was 26,796, which increased to 26,944 by 2000 ï an increase of less than one percent over ten years. County-wide, this marginal upward trend is not expected to continue, since an approximately 2.3 percent decrease to 26,176 is projected by the US Census Bureau from 2000 through 2008. The Cornell University Program on Applied Demographics projects that the population of Lewis County will fall by 2.9% from 2000 to 2010. Looking further into the future, the Cornell University program projects that the population of the County could drop to around 21,600 by 2035, a decrease of almost 20% from 2000 levels.

Table 1.1 shows population changes (county-wide and for each municipality) as documented by the Lewis County Planning Department. Table 1.2 shows population changes by municipality and County between 1990 and 2000 while Figure 1.3 presents population density according to the U.S. Census Bureau.

Table 1.1
Lewis County Population
(*Source: US Census Bureau / Lewis County Comprehensive Plan)*

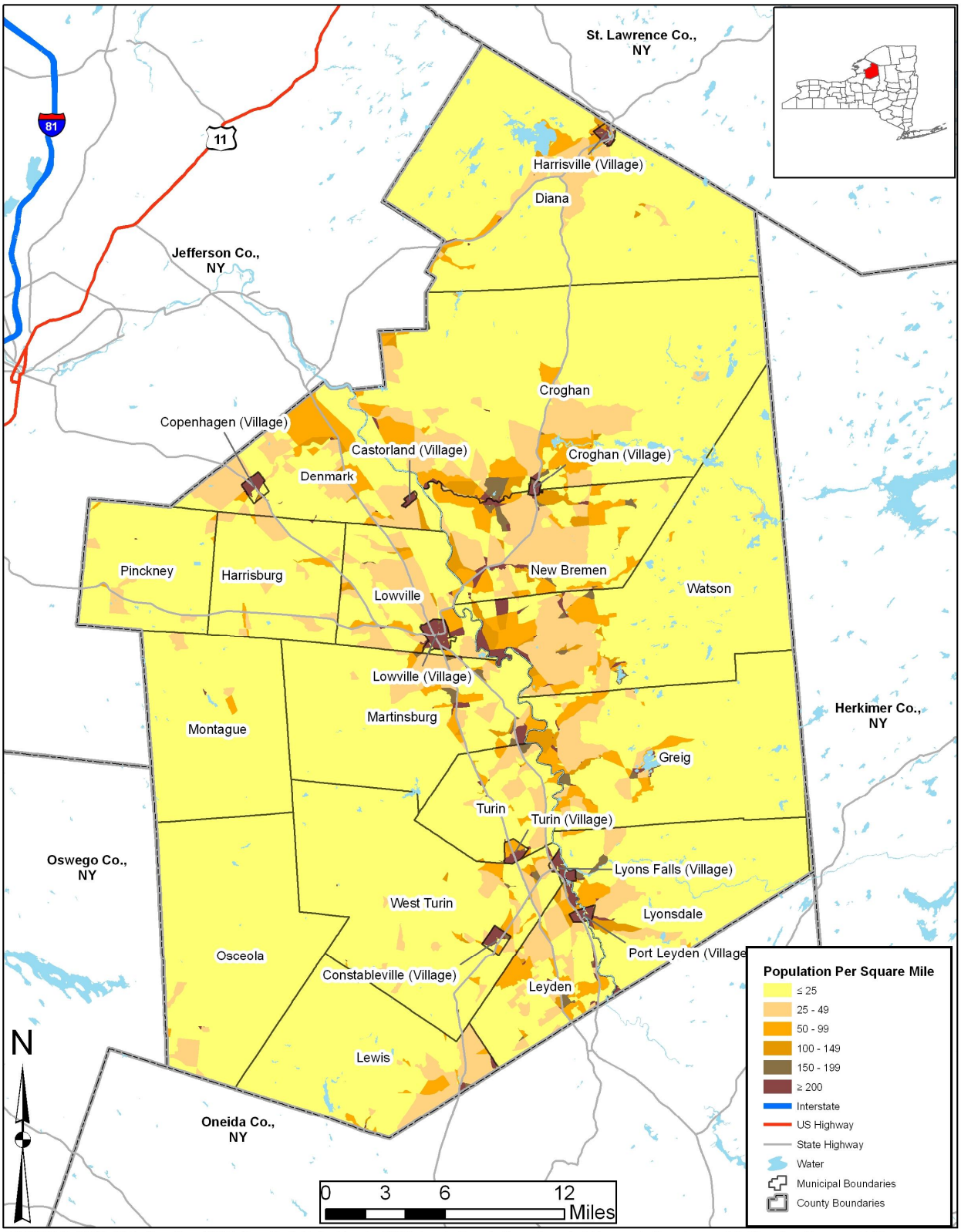
Municipality	Population 1990	Population 2000
Lewis, County of	**26,796**	**26,944**
Castorland, Village of	292	306
Constableville, Village of	307	305
Copenhagen, Village of	876	865
Croghan, Town of	2,705	2,784
Croghan, Village of	664	665
Denmark, Town of	1,550	1,576
Diana, Town of	1,040	1,008
Greig, Town of	1,323	1,365
Harrisburg, Town of	425	423
Harrisville, Village of	703	653
Lewis, Town of	858	857
Leyden, Town of	1,323	1,320
Lowville, Town of	1,217	1,072
Lowville, Village of	3,632	3,476
Lyons Falls, Village of	698	591
Lyonsdale, Town of	1,029	1,023
Martinsburg, Town of	1,358	1,249
Montague, Town of	47	108
New Bremen, Town of	2,259	2,434
Osceola, Town of	239	265
Pinckney, Town of	323	319
Port Leyden, Village of	723	665
Turin, Town of	578	530
Turin, Village of	295	263
Watson, Town of	1,613	1,987
West Turin, Town of	874	835

According to the U.S. Census Bureau, Lewis County has a total area of 1,290 square miles. The 2000 U.S. Census population density per square mile of land in Lewis County was 21.1 persons per square mile; whereas, in the 1990 U.S. Census, there were 21.01 persons per square mile ï an increase of 0.4 percent over ten years. By 2010, the population density is projected to be 20.5 persons per square mile ï a decrease of 2.8 percent from the year 2000 values.

The population of Lewis County has been concentrated in the Black River Valley from the earliest days of European settlement, a pattern which is not expected to change significantly in the foreseeable future. The Black River Valley has historically provided the primary transportation corridor through the County, in particular the Black River Canal system that connected local communities to the Erie Canal. In addition to commerce and transport, the Black River has provided opportunities for hydropower in certain locations, and the fertile floodplain offered prime agricultural land. These historic and environmental factors have made the Black River Valley the most densely populated area of the County.

Lewis Countyôs population is also aging. The population is aging at the same rate as state and national averages, as population growth has slowed, with roughly 30 percent of the population potentially retiring by 2026. The overall median age in 2000 has been estimated by the U.S. Census Bureau to be 36.8, up from 31.5 in 1990. The percentage of the population over 65 years of age is also increasing (at 13.8 percent in 2000 and 12.1 percent in 1990).

Figure 1.3 –Lewis County Population Density



SOURCES: ESRI, U.S. Counties, 2005, New York Major Roads, 2000; Lewis County Department of Economic Development & Planning, Town and Village Boundaries; U.S. Census Bureau, Herkimer, Oswego, Oneida, Lewis, Jefferson, St. Lawrence Counties, Area Hydrography, 2007, Popualtion Data, 2000

Income and Employment. In the first half of the current decade both the median household and median family incomes in Lewis County exhibited a lower rise than the national equivalents, according to the U.S. Census Bureau, as shown in Table 1.2. Also, according to the various sources, between 2000 and 2007 levels of unemployment rose and poverty rose in Lewis County while national levels rose slightly in both categories over the same time period.

Table 1.2
Income and Employment in Lewis County
Source: U.S. Census Bureau, Wiki Commerce Economic Development, Economagic, US Bureau of Labor, NYS Department of Labor

Economic Characteristic	2000		2007	
	Lewis Co.	USA	Lewis Co.	USA
Median Household Income	$34,361	$41,994	$40,012	$50,007
Median Family Income	$39,287	$50,046	$45,105	$60,374
Families Below Poverty Level	10.1%	9.2%	11.1%	9.8%
Individuals Below Poverty Level	13.2%	12.4%	15.6%	13.3%
Unemployed*	5.1%	3.7%	7.2%	4.2%

*As a percentage of the population aged 16 years or more

Transportation Links. Lewis County is linked to the surrounding area by road, being close to Interstate 81 which traverses the full extent of neighboring Jefferson County from north to south and US Highway 11 also in Jefferson County. The principal highway actually in Lewis County is State Routes 12 and 26, which link communities along the Black River Valley. There are no passenger railroad services in Lewis County, but there are several railroad lines for freight, owned by the Mohawk, Adirondack, and Northern Railroad, the Lowville and Beaver River Railroad, and CSX Transportation. However, at the time of writing the operational status of these freight lines was unclear, and this infrastructure is considered underutilized, if not abandoned altogether.

Local bus services have recently been introduced, with seven routes operating daily across the County plus a twice-weekly service entirely within the Village of Lowville. These services mainly connect Lowville with other communities in the Black River Valley, but there are also routes connecting Harrisville in the far north of the County and Boonville in neighboring Oneida County. These services are operated by Birnie Bus Services Inc., which also operates a twice weekly bus service connecting Lowville and Port Leyden with the City of Utica.

There are no airports with scheduled passenger services in the County, the nearest being Watertown Airport in nearby Jefferson County. More detailed information describing critical facilities and local infrastructure can be found in Section 3b of this plan.

FEMA Disaster Declarations. Disaster declarations, for the county or counties affected by a disaster, are declared by the President of the United States under the authority of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (the ñStafford Actò). FEMA then manages the entire process, including making federally-funded assistance available in declared areas; coordinates emergency rescue and response efforts; provides emergency resources; and provides other related activities/funding in the process of aiding citizens and local governments in a nationally-declared disaster. Tables 1.3 and 1.4 provide a summary of disaster and emergency declarations for the State of New York (based on review of the web sites of FEMA and the New York State Emergency Management Office), with an indication as to whether Lewis County was part of the declared area, and the type of assistance the County was consequently eligible for: PA ï Public Assistance, IA ï Individual Assistance. The PA Program provides

Federal disaster grant assistance for debris removal, emergency protective measures, and the repair, replacement, or restoration of disaster-damaged, publicly owned facilities and the facilities of certain Private Non-Profit (PNP) organizations. The IA Program is intended to help individuals and householders affected by a disaster with housing needs and other necessary expenses related to disaster recovery such as medical, funeral, storage and transportation costs.

Table 1.3
New York State Major Disaster Declarations: 1954 – 2009
(Source: FEMA, online at http://www.fema.gov/news/disasters_state.fema?id=36
NYSEMO, online at http://www.semo.state.ny.us/programs/recovery/History.cfm
And Appendix N of the New York State Hazard Mitigation Plan)

Year	Date	Disaster Type	Disaster Number	Eligible Assistance for Lewis County
2009	31-Dec	Severe Storms and Flooding (Norĉeaster)	1869	None
2009	1-Sep	Severe Storms and Flooding	1857	None
2009	4-Mar	Severe Winter Storm	1827	None
2007	31-Aug	Severe Storms, Flooding, and Tornado	1724	None
2007	2-Jul	Severe Storms and Flooding	1710	None
2007	24-Apr	Severe Storms and Inland and Coastal Flooding	1692	None
2006	12-Dec	Severe Storms and Flooding	1670	None
2006	24-Oct	Severe Storms and Flooding	1665	None
2006	1-Jul	Severe Storms and Flooding	1650	None
2005	19-Apr	Severe Storms and Flooding	1589	None
2004	1-Oct	Tropical Depression Ivan	1565	None
2004	1-Oct	Severe Storms and Flooding	1564	None
2004	3-Aug	Severe Storms and Flooding	1534	None
2003	29-Aug	Severe Storms, Tornadoes and Flooding	1486	None
2003	12-May	Ice Storm	1467	None
2002	16-May	Earthquake	1415	None
2002	1-Mar	Snowstorm	1404	None
2001	11-Sep	World Trade Center Terrorist Attack	1391	None
2000	21-Jul	Severe Storms	1335	PA
1999	19-Sep	Hurricane Floyd	1296	None
1998	11-Sep	Severe Storms	1244	None
1998	7-Jul	Severe Storms and Flooding	1233	None
1998	16-Jun	New York Severe Thunderstorms and Tornadoes	1222	None
1998	10-Jan	Severe Winter Storms	1196	PA and IA
1996	9-Dec	Severe Storms/Flooding	1148	PA
1996	19-Nov	Severe Storms/Flooding	1146	None
1996	24-Jan	Severe Storms/Flooding	1095	PA
1996	12-Jan	Blizzard	1083	None
1993	2-Apr	World Trade Center Explosion	984	None
1992	21-Dec	Coastal Storm, High Tides, Heavy Rain, Flooding	974	None
1991	16-Sep	Hurricane Bob	918	None
1991	21-Mar	Severe Storm, Winter Storm	898	PA
1987	10-Nov	Severe Winter Storms	801	None
1987	15-May	Flooding	792	None
1985	18-Oct	Hurricane Gloria	750	None
1985	22-Mar	Snow Melt, Ice Jams	734	None
1985	20-Mar	Flooding	733	PA
1984	25-Sep	Severe Storms/Flooding	725	None
1984	17-Apr	Coastal Storms/Flooding	702	None
1977	5-Feb	Snowstorms	527	PA and IA
1976	3-Sep	Hurricane Belle	520	None

Table 1.3
New York State Major Disaster Declarations: 1954 – 2009
(Source: FEMA, online at http://www.fema.gov/news/disasters_state.fema?id=36
NYSEMO, online at http://www.semo.state.ny.us/programs/recovery/History.cfm
And Appendix N of the New York State Hazard Mitigation Plan)

Year	Date	Disaster Type	Disaster Number	Eligible Assistance for Lewis County
1976	21-Jul	Severe Storms/Flooding	515	None
1976	29-Jun	Flash Flooding	512	None
1976	19-Mar	Ice Storm, Severe Storms, Flooding	494	None
1975	2-Oct	Severe Storms, Heavy Rain, Landslides, Flooding	487	None
1974	23-Jul	Severe Storms/Flooding	447	None
1973	20-Jul	Severe Storms/Flooding	401	None
1973	21-Mar	High Winds, Wave Action and Flooding	367	None
1972	23-Jun	Tropical Storm Agnes	338	None
1971	13-Sep	Severe Storms/Flooding	311	None
1970	22-Jul	Heavy Rains, Flooding	290	None
1969	26-Aug	Heavy Rains, Flooding	275	None
1967	30-Oct	Severe Storms/Flooding	233	None
1965	18-Aug	Water Shortage	204	None
1963	23-Aug	Heavy Rains, Flooding	158	None
1962	16-Mar	Severe Storm, High Tides, Flooding	129	None
1956	29-Mar	Flood	52	Not Recorded
1955	22-Aug	Hurricanes Connie and Diane	45	Not Recorded
1954	7-Oct	Hurricanes Carol and Hazel	26	Not Recorded

Table 1.4
New York State Emergency Declarations: 1954 – 2009
(Source: FEMA, online at http://www.fema.gov/news/disasters_state.fema?id=36
NYSEMO, online at http://www.semo.state.ny.us/programs/recovery/History.cfm
And Appendix N of the New York State Hazard Mitigation Plan

Year	Date	Emergency Type	Declaration Number	Eligible Assistance for Lewis County
2008	18-Dec	Severe Winter Storm	3299	None
2007	23-Feb	Snow	3273	PA
2006	15-Oct	Snowstorm	3268	None
2005	30-Sep	Hurricane Katrina Evacuation	3262	None
2004	3-Mar	Snow	3195	PA
2003	23-Aug	Power Outage	3186	PA
2003	27-Mar	Snowstorm	3184	None
2003	26-Feb	Snowstorm	3173	None
2002	1-Jan	Snowstorm	3170	None
2000	4-Dec	Snow Storm	3157	None
2000	11-Oct	Virus Threat	3155	PA
1999	18-Sep	Hurricane Floyd	3149	None
1999	10-Mar	Winter Storm	3138	None
1999	15-Jan	Winter Storm	3136	PA
1993	17-Mar	Severe Blizzard	3107	Not Recorded
1980	21-May	Chemical Waste, Love Canal	3080	None
1978	7-Aug	Chemical Waste, Love Canal	3066	None
1977	29-Jan	Snowstorms	3027	PA
1974	2-Nov	Flooding (NYS Barge Canal)	3004	Not Recorded

Plan Development Process

Multi-Jurisdictional Approach

Lewis County took a multi-jurisdictional approach to preparing its hazard mitigation plan. The County has resources (for example, funding, data, GIS capabilities, etc.) which local jurisdictions usually lack. However, the County could not develop the plan on its own, and to undertake such a regional planning effort, the County needed to involve its member municipalities since only they have the legal authority to enforce compliance with land use planning and development issues.

Throughout the plan development process, staff from the Lewis County Office of Fire and Emergency Management (LCFEM) and Department of Economic Development and Planning worked tirelessly to involve all 26 municipalities in the County. These local jurisdictions were not only invited to participate but were truly guided through the process by LCFEM at every stage.

The following municipal entities (Lewis County and 20 of its constituent municipalities) successfully participated in the development of this plan by attending meetings and submitting the key deliverables:

County of Lewis

Castorland, Village of	*Harrisburg, Town of*	*Montague, Town of*
Constableville, Village of	*Lewis, Town of*	*Martinsburg, Town of*
Croghan, Town of	*Leyden, Town of*	*Osceola, Town of*
Croghan, Village of	*Lowville, Town of*	*Pinckney, Town of*
Denmark, Town of	*Lowville, Village of*	*Port Leyden, Village of*
Diana, Town of	*Lyons Falls, Village of*	*West Turin, Town of*
Greig, Town of	*Lyonsdale, Town of*	

A more detailed summary of the participation demonstrated by each municipality in the County, including attendance at meetings and submission of requested deliverables, is presented in Table 1.5.

In addition, the records show that the following stakeholder entities participated by attending at least one Core Planning Group meeting and/or responding to at least one questionnaire.

Hudson River-Black River Regulating District
Lewis County Soil and Water Conservation District
Lewis County Head Start
National Grid
NYSEMO Region 4

URS Corporation (Wayne, NJ) acted as the plan development consultant providing hazard mitigation planning services.

Readers are invited to review the contents of ***Appendix F – Planning Committee Membership and Contacts*** for a list of jurisdictional representatives and individuals who participated actively in the planning process.

Table 1.5
Lewis County Jurisdictions Planning Process Participation

	Meetings Attended				Key Deliverables Submitted					
	Kickoff Meeting	Progress Meetings	Risk Assessment Q & A	Mitigation Working Session	Wish List Items	Land Use and Development Questionnaire	Hazard Identification Questionnaire	Capabilities Assessment Questionnaire	Mitigation Prioritization / Implementation Worksheets	NFIP Actions Worksheets
Lewis, County of	✓	✓	✓	✓	✓	✓	✓	✓	✓	**N/A**
Castorland, Village of		✓	✓	✓	✓	✓	✓	✓	✓	✓
Constableville, Village of	✓		✓	✓	✓	✓	✓	✓	✓	✓
Copenhagen, Village of	✓	✓				✓	✓	✓		
Croghan, Town of	✓	✓	✓	✓		✓	✓	✓	✓	✓
Croghan, Village of	✓	✓	✓	✓	✓	✓			✓	✓
Denmark, Town of			✓	✓	✓	✓			✓	✓
Diana, Town of	✓				✓		✓	✓	✓	✓
Greig, Town of	✓	✓	✓	✓		✓	✓	✓	✓	✓
Harrisburg, Town of	✓			✓		✓	✓	✓	✓	✓
Harrisville, Village of	✓				✓	✓	✓	✓		
Lewis, Town of				✓		✓	✓	✓	✓	✓
Leyden, Town of		✓	✓	✓		✓			✓	✓
Lowville, Town of	✓		✓	✓	✓	✓	✓	✓	✓	✓
Lowville, Village of	✓		✓	✓	✓	✓	✓	✓	✓	✓
Lyons Falls, Village of	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Lyonsdale, Town of	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Martinsburg, Town of			✓	✓	✓	✓	✓	✓	✓	✓
Montague, Town of		✓				✓		✓	✓	**N/A**
New Bremen, Town of					✓		✓			
Osceola, Town of		✓				✓	✓		✓	✓
Pinckney, Town of						✓	✓	✓	✓	✓
Port Leyden, Village of	✓	✓		✓		✓		✓	✓	✓
Turin, Town of	✓		✓		✓	✓	✓			
Turin, Village of	✓				✓	✓				
Watson, Town of	✓				✓		✓			
West Turin, Town of		✓	✓	✓		✓	✓	✓	✓	✓

Green: Jurisdiction participated successfully
Yellow/Italics: Jurisdictional participation was not sufficient to be considered successful

While the County retained the services of a consultant (URS Corporation) to guide participants through the process and author the plan, participating jurisdictions contributed throughout the overall planning process, as follows:

- Each participating jurisdiction provided staff to participate in the overall county-wide Core Planning Group (CPG). The jurisdictionôs CPG member(s) were lead members of their municipalityôs Jurisdictional Assessment Team (JAT). JATs were responsible for reviewing information, data and documents, submitting feedback to the Consultant, completing questionnaires/forms, reaching out to the public and other stakeholders in their respective jurisdictions, developing a unique mitigation strategy for their municipality, and reviewing and commenting on draft documents. *More information on the planning team structure and roles/responsibilities is presented later in this section, and all questionnaires are included in Appendix F for reference.*
- The Consultant provided **"*Guidance Memorandum 1- Assessing Community Support, Building the Planning Team, and Engaging the Public and Other Stakeholders*"** at the project outset (May 21, 2009). This memorandum was prepared to provide Lewis County and its participating jurisdictions with suggestions for: assessing community support, building the planning team and engaging the public and other stakeholders throughout the plan development process and prior to plan approval. The Jurisdictional Assessment Team for each municipality used this memorandum as a guide for outreach, documented their completed activities in the memorandumôs ñ**Outreach Log**ò. The County and 12 municipal jurisdictions provided a summary of their outreach activities to the Consultant for incorporation into the plan.
- Participating jurisdictions provided feedback during the Hazard Identification and Hazard Profile steps of the process (Sections 2 and 3.a of the plan, respectively) through their completion and submittal of a **Hazard Identification Questionnaire** to the Consultant. This questionnaire summarized the Consultantôs evaluation of a full range of natural hazards, including whether or not each hazard was recommended for inclusion in the plan and why. Municipalities were asked whether or not they concurred with the consultantôs findings, and to provide information on impacts from past events in their respective communities. Local responses were used by the Consultant to supplement hazard information obtained through research of past disaster declarations in the County, review of the New York State Hazard Mitigation Plan (January 2008), and review of readily available online information from reputable sources (such as federal and state agencies). The County, 20 municipal jurisdictions, and one other stakeholder returned this questionnaire or provided a statement of full concurrence with the Consultantôs findings.
- Participating jurisdictions provided feedback during the evaluation of Land Uses and Development Trends step of the process (Section 3.d of the plan) through their completion and submittal of a **Land Uses and Development Trends Questionnaire** to the Consultant. This questionnaire asked jurisdictions to: (1) describe development trends occurring within their jurisdiction, such as the predominant types of development occurring, location, expected intensity, and pace by land use; and (2) describe any regulations/ordinances/codes their jurisdiction enforces to protect new development from the effects of natural hazards. Local responses were used by the Consultant to supplement information presented in the County Cross-Acceptance Report. The County and 23 municipal jurisdictions returned this questionnaire.
- Participating jurisdictions provided feedback during the Capability Assessment step of the process (Section 4 of the plan) through their completion and submittal of a **Capability Assessment Questionnaire** to the Consultant. This questionnaire asked respondents to examine their jurisdictionôs abilities to implement and manage a comprehensive mitigation strategy, which includes a range of mitigation actions. The questionnaires requested information pertaining to existing plans, polices, and regulations that contribute to or hinder the ability to implement hazard mitigation actions. They also requested information pertaining to the legal

and regulatory capability, technical and administrative capacity, and fiscal capability of each jurisdiction. The County and 20 municipal jurisdictions submitted completed questionnaires illustrating their capability to implement a mitigation strategy.

- Participating jurisdictions provided feedback regarding **problem areas in need of mitigation and possible mitigation alternatives**. Some municipalities provided this type of information to the consultant separately, either via email or separate written correspondence. Their feedback is included in Section 6 of the plan. At a working session of the Core Planning Group on March 2, 2010, participating jurisdictions were asked to consider a range of various types of hazard mitigation actions, and identify a mitigation strategy for their municipality. Lewis County and 20 participating jurisdictions have submitted individual mitigation strategies including mitigation actions specific to their jurisdictions.
- The Consultant provided **"*Guidance Memorandum #2 – Plan Maintenance Procedures: Monitoring, Evaluating and Updating the Plan***ò on February 15, 2010. This memorandum provided participants with an overview of the requirements regarding plan maintenance, types of plan maintenance activities that can be selected to meet the requirements, and some examples of plan maintenance strategies from other FEMA-approved plans in FEMA Region 2. Participating jurisdictions were asked to review this information, coordinate with their Jurisdictional Assessment Team, and provide comments back to LCFEM regarding what types of plan maintenance activities their community was in favor of, versus any elements their community like to see excluded. Jurisdictions were asked to submit their feedback to LCFEM. They were advised that lack of feedback would be interpreted to indicate that their jurisdiction had no particular preferences regarding this plan element. In turn, LCFEM reviewed feedback received and developed a county-wide plan maintenance strategy that best reflected the expressed desires of the full team.
- The Consultant provided ñ***Guidance Memorandum #3 – Plan Integration***ò on February 15, 2010. The memorandum summarized requirements in terms of how mitigation recommendations will be integrated into job descriptions, or existing planning mechanisms such as comprehensive plans, capital improvement plans, zoning and building codes, site reviews, permitting and other planning tools, where such tools are appropriate. Various ways that the hazard mitigation plan can be integrated into local planning mechanisms were presented, along with sample text from other plans approved by FEMA Region 2. Participating jurisdictions were asked to review this information, coordinate with their Jurisdictional Assessment Team, and provide comments back to LCFEM regarding what types of plan integration activities their community was in favor of, versus any elements their community like to see excluded. Jurisdictions were asked to submit their feedback to LCFEM. They were advised that lack of feedback would be interpreted to indicate that their jurisdiction had no particular preferences regarding this plan element. In turn, LCFEM reviewed feedback received and developed a county-wide plan maintenance strategy that best reflected the expressed desires of the full team.

Lewis County Hazard Mitigation Planning Committee

This Plan has been developed by the **Lewis County Hazard Mitigation Planning Committee (the "Planning Committee"**), with support from an outside consulting firm (URS Corporation, ñURSò). The efforts of the Planning Committee were headed by James Martin of the Lewis County Office of Fire and Emergency management (LCFEM). The Plan represents the collective efforts of citizens, elected and appointed government officials, business leaders, volunteers of non-profit organizations, and other stakeholders.

The overall **Planning Committee** consisted of members of Lewis County, each participating jurisdiction, and the public and other stakeholders. The overall Planning Committee did not meet together in one

place during the planning process. Instead, a team concept was used to more evenly distribute responsibilities and to make best of use of every participantôs unique capabilities.

As shown in Figure 1.4, the overall Planning Committee was divided into a **Core Planning Group (CPG)** and a series of **Jurisdictional Assessment Teams (JATs),** with one JAT for each of the Countyôs participating jurisdictions. Each jurisdiction was encouraged to form a JAT by bringing together personnel from their local government organization, ideally utilizing people with knowledge and experience of local administration, planning, hazards, and infrastructure. While in practice each individual JAT varied in number and composition, each participating municipality provided at least one representative who was actively involved throughout the planning process. The names of all JAT members whose involvement was documented by attendance at meetings or completion of the various deliverables are included in Table 1.6..

Table 1.6
Planning Committee Members

Municipality	Representatives	Title/Position/Role
Fully Participating Municipalities		
Lewis County	James Martin (LCFEM) Sarah Bullock (Economic Development & Planning) Renee Beyer (Economic Development & Planning) Mark Tuttle (EMS) Chuck Langs (Highway Department)	Director Senior Planner Senior Planner EMS Coordinator Superintendent
Castorland, Village of	Mark Birchenough Donna Loucks	Superintendent of Public Works Clerk
Constableville, Village of	Mary Failing Grant Moshier Mark Sullivan	Clerk Mayor Trustee
Croghan, Town of	Warren Shaw Harold Hammond John Jones	Superintendent Councilman Former Supervisor
Croghan, Village of	James Zehr Glen Gagnier William Shambo	Superintendent of Public Works Resident Trustee
Denmark, Town of	Patrick Mahar	Superintendent
Diana, Town of	Darrell Seymour David Parow	Superintendent Supervisor
Greig, Town of	Marilyn Patterson Ernest Csiszmar Tom Gunn	Supervisor Former Superintendent Councilman
Harrisburg, Town of	Loren Lyndaker David Chase	Councilman Councilman
Lewis, Town of	Ian Klingbail Alan Tanner Jerry King	Councilman Councilman Fire Department
Leyden, Town of	Helen McHale Bruce Myers Verle Yelton	Councilwoman Superintendent Councilman

Table 1.6 Planning Committee Members		
Municipality	**Representatives**	**Title/Position/Role**
Lowville, Town of	Charles Stevens Kathy Manning Richard Dening	Code Enforcement Officer Zoning and Code Enforcement Superintendent
Lowville, Village of	Eric Fredenburg	Chief of Police
Lyons Falls, Village of	Catherine Liendecker Cheryl LaLonde	Mayor Fire Department
Lyonsdale, Town of	Don Gydesen Roscoe Fawcett	Superintendent Former Supervisor
Martinsburg, Town of	Gordon Peebles Tyler Jones Terrence Thisse	Councilman Superintendent Supervisor
Montague, Town of	Jan Bogdanowicz Adrian Perry	Supervisor Superintendent
Osceola, Town of	Francis Yerdon Julie Painter	Councilman Former Supervisor
Pinckney, Town of	Donald Vincent John Goutermout Sherry Harmych	Councilman Superintendent Supervisor
Port Leyden, Village of	Alan Scouten Pete Kraeger Trevor Samson	Mayor Trustee Trustee
West Turin, Town of	Richard Failing Edward Hayes	Superintendent Supervisor
Partially Participating Municipalities		
Copenhagen, Village of	Sue Parker Gerald Snyder	Clerk Trustee
Harrisville, Village of	James Seymour James Hunter Nancy Williams	Superintendent Trustee Clerk
New Bremen, Town of	Frederick Schneider Milton Monnat	Supervisor Councilman
Turin, Town of	Bruce Young Edward Kubinski Gerald Reed	Councilman Councilman Supervisor
Turin, Village of	Douglas Hunt	Mayor
Watson, Town of	Virgil Taylor	Supervisor

The Role of the County in the Plan Development Process

The role of the County in the plan development process was to act as lead agency and facilitator on behalf of the participating jurisdictions. The County was originally responsible for securing the grant funding for the plan and for soliciting the participation of all jurisdictions. On initiation of the planning process, the County issued an invitation top participate to all 26 towns and villages in the County, requesting formal documentation of each municipality's intention to participate in the planning process or to decline the offer. Example copies of the invitation form and cover letter are included in Appendix F. During the

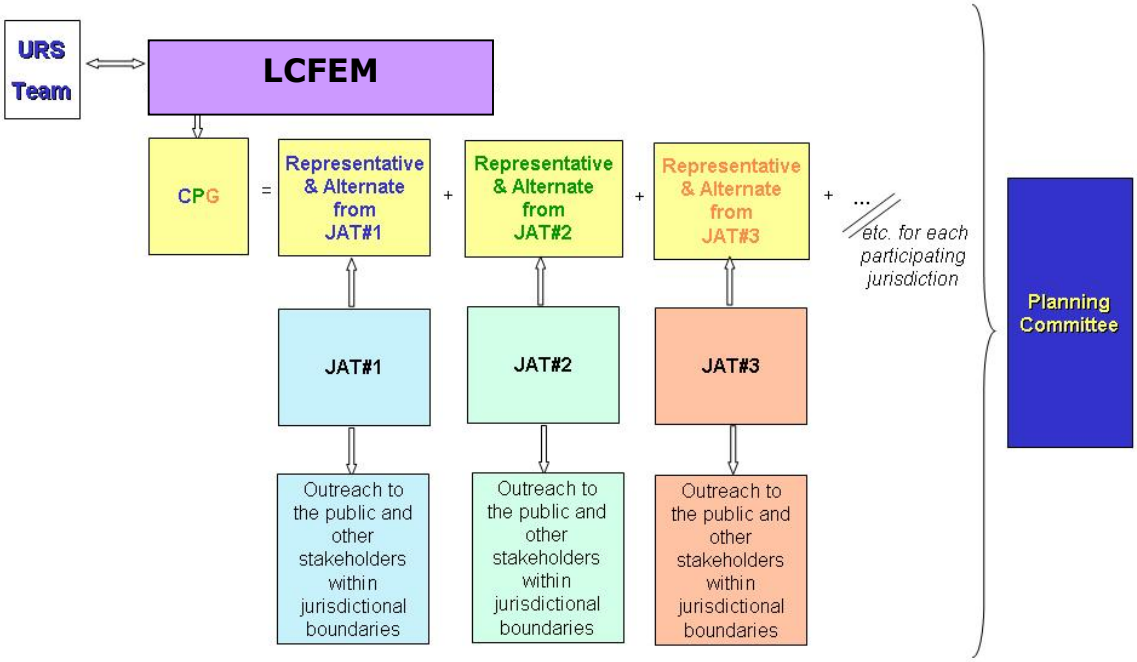
planning process all 26 municipalities in the County returned the invitation form recording their intention to participate and giving details of individuals who would comprise the JATs.

The County was also responsible for selecting the consultant, administering the contract, and ensuring payment to the consultant.

As well as acting as a jurisdiction in its own right, the County took on the responsibility of managing all communications between the consultant and the CPG (principally through the use of a master email mailing list), distributing all drafts to jurisdictions and reviewing agencies, distributing deliverables and outreach materials, and facilitating meetings. For each meeting the County was responsible for procuring a venue and presentation equipment, distributing invitations, and disseminating any subsequent relevant information. The County also hosted the central hazard mitigation planning website, including the interactive mitigation survey, the results of which the County was also responsible for processing and forwarding to the consultant. The Lewis County Office of Fire and Emergency Management was the County agency tasked with meeting the County's responsibilities, and the plan coordinator and main point of contact was Mr. James Martin (see the Executive Summary, Page iii), assisted by Ms. Sarah Bullock of the Lewis County Department of Economic Development.

This team concept was beneficial for two reasons: (1) the consultant and the County's main points of contact were the Lewis County Planning Committee and the CPG; and (2) JATs with intimate local knowledge were best suited for coordination and outreach within their respective jurisdictions.

Figure 1.4 – Planning Committee Organizational Structure



Key:
LCFEM: Lewis County Fire and Emergency Management
CPG: Core Planning Group
JAT: Jurisdictional Assessment Team

All members of the CPG and the JATs were also members of the overall Planning Committee. The CPG included head members of each JAT (the County and each of the municipalities who elected to participate in the process). The Lewis County Planning Committee was responsible for managing the overall plan formulation activities. The CPG was responsible for attending CPG meetings and providing information and feedback, and coordinating an outreach program within their municipalityôs JAT and beyond to the public and other stakeholders. Each JAT was responsible for coordinating and facilitating local efforts, sending CPG representatives to meetings, providing information and feedback, involving the public and local community stakeholders in the planning process, assessing mitigation alternatives, selecting a course of action to be followed for their community, adopting the plan, and participating in plan monitoring and implementation.

With regard to meetings, LCFEM was responsible for setting meeting dates and times, securing a meeting facility, and notifying all team members of upcoming meetings. They also played a very large role in reminding CPG members of certain project deadlines. The Consultant prepared meeting agendas, handouts, PowerPoint presentations, and minutes for the project initiation meeting. LCFEM maintained the Countyôs web site posting various guidance memoranda, interim deliverables, worksheets, etc.

The plan development process was initiated in earnest in the spring of 2009 with the Lewis County Hazard Mitigation Plan Project Initiation Meeting held on March 30, 2009. At this meeting, the consultant met with the LCFEM and representatives of other County departments to refine the project work plan, discuss schedule and the anticipated level of County labor support. The Consultant provided a ñWish Listò of information, data and documents they hope each participating jurisdiction can submit for their review and incorporation into the plan. The Consultant also provided Guidance Memorandum #1 regarding assessing community support, building the planning team, and engaging the public. At this meeting, expectations regarding the CPG Project Kickoff Meeting were discussed. Handouts included the project scope of work, targeted implementation schedule, and a standard list of natural hazards for discussion.

While Jurisdictional Assessment Teams met individually throughout the plan development process as they deemed necessary, the following is an overview of CPG meetings held during the plan development process.

- May 21, 2009 ï Core Planning Group Kickoff Meeting. This was the first meeting of the Core Planning Group. Participants were provided with an overview of: the intent of the project; the organizational structure of the planning group; the plan development process overall; the role of participating jurisdictions, contractors, the public and other stakeholders; what it means to participate; key deliverables; data collection/supporting documents; the project timeline; and next steps. Handouts included the PowerPoint presentation, targeted implementation schedule, Wish List, sources of information on hazard mitigation planning, project Fact Sheet and Guidance Memo #1.
- August 17 and 18, 2009 ï Additional Kickoff/Progress Meetings. Two meetings were held at separate locations in the County (one at Croghan in the north and one at Constableville in the south) at which municipal staff tasked with contributing to the plan were further briefed on the requirements for participation and the purpose of the plan, and also given an update on progress.
- February 9, 2010 ï Risk Assessment Question and Answer Sessions (Two meetings, held in the afternoon and evening of the same day). The purpose of the meetings was to provide CPG members with an opportunity to ask questions and submit feedback on the recently distributed Risk Assessment Interim Deliverable. The Risk Assessment Interim Deliverable comprised the following working chapters of the draft report: Hazard Identification, Hazard Profiles, Asset Identification, Vulnerability Assessment, Range of Mitigation Actions to be Considered.

- March 2, 2010 ï Mitigation Strategy Working Session. At this working session, attendees conducted an evaluation and prioritization of hazard mitigation actions and developed an implementation strategy for selected mitigation actions. For jurisdictions not present, or those who were present but who needed more time to complete the Prioritization and Implementation Strategy sheets, an opportunity was provided for jurisdictions to do so remotely. Following this meeting, the County and 20 municipal jurisdictions had identified, evaluated, and prioritized mitigation actions specific to their jurisdiction, and developed strategies to implement them.
- May 4, 2010 ï Presentation of Draft Plan: The primary purpose of this public meeting was to present the draft plan to County Legislators and other officials who will be responsible for adopting the plan by resolution and also for overseeing funding for the implementation of the actions contained in the plan.

Additional information, such as meeting agendas, presentations, handouts, and minutes were posted on the Lewis County hazard mitigation planning web site at:

http://lewiscountyny.org/content/Generic/View/59

The Role of the Consultant in the Plan Development Process

This Hazard Mitigation Plan is the Countyôs plan; as such, its success rests on the decisions and directions set by the Planning Committee members throughout the plan development process. URS was contracted by Lewis County to work with the LCFEM and the Planning Committee to assist them in developing a plan that would meet the requirements of DMA 2000. URS was contracted for this assignment, undertaking the work from their office in Wayne, New Jersey. URS assisted in the hazard identification and risk assessment, lead the hazard mitigation planning efforts, authored the final document, and provided overall contract administration.

URS assisted the Planning Committee by conducting the analyses necessary to provide the team members with the information they needed to make sound decisions, and helped guide them through the necessary steps of the plan development process. The Planning Committee, in turn, took the lead by including the local community, assessing the alternatives, and ultimately selecting the course of action to be followed. At the end of the planning process, URS prepared this Plan text (with feedback from the Planning Committee) to document the groupôs efforts, along with hazard information and findings, in a manner consistent with applicable regulations (DMA 2000), criteria (44 CFR Part 201.6), and guidance (FEMAôs Mitigation Planning ñHow-Toò Guides; FEMAôs Multi-Hazard Mitigation Planning Guidance document of March 2004 (Revised July 2008).

A series of three Guidance Memorandums were distributed to LCFEM and the Core Planning Group by URS Corporation, at various meetings and also were posted on the Countyôs mitigation planning web site. These three memos provide a summary of key information presented in DMA 2000, its implementing regulations (IFR), and the FEMA How-To Guides for three key topic areas. The memos are intended to serve as a supplement ï and not as a replacement ï to the FEMA documents. Each memo provides suggestions to municipalities in a certain topic area, and requests feedback from each municipality at the end of the process regarding their decisions. A summary of the Guidance Memos is presented below.

Guidance Memorandum #1 – Assessing Community Support, Building the Planning Team, and Engaging the Public and Other Stakeholders , dated May 1, 2009, describes the project and its goal of identifying the risks associated with natural hazards in Lewis County. It is centered on developing the structure of the Planning Committee and identifying the jurisdictions that are interested in participating in the plan; reaching out to various parties (general public, local residents, business owners, non-profit organizations, community leaders and other stakeholders) during the development and maintenance processes;

identifying the role of contractors in the planning process; and ultimately, documenting the planning process.

Guidance Memorandum #2 - Plan Maintenance Procedures: Monitoring, Evaluating and Updating the Plan, dated February 15, 2010, highlights the essential steps necessary for monitoring, evaluating and maintaining the plan, and its value as a vital tool for mitigating hazards and reducing risk. The memo stresses several key factors that need to be undertaken by the Planning Committee: organizing resources, i.e., identifying and organizing interested parties, including the public, during the planning process; assessing the risks, i.e., identifying the natural hazards that generally affect Lewis County; how the communities will be impacted by the hazards; and developing a mitigation plan, i.e., once the risks have been identified, the Planning Committee determines the methods and strategies for avoiding or minimizing the risks. The memo also conveys the importance of following the regulations that require the plan to be monitored, evaluated and updated within a five-year cycle, and the importance of periodically measuring the effectiveness of the actions contributing to the overall success of the plan.

Guidance Memorandum #3 - Plan Integration, dated February 15, 2010, outlines the importance of using existing processes and resources by the Planning Committee during plan implementation; thus, saving time and effort in meeting the plan's goals and objectives. The memo states that by following the requirements and key steps previously discussed, the next essential goal is taking action by integrating the objectives into daily activities and by implementing the plan in a timely manner.

The memos are valuable tools that guide the team members through each step toward the establishment of the hazard mitigation plan. As such, these memos assist the Planning Committee through the planning process that leads to the formal adoption of the plan.

In addition, URS also: (1) Mitigation Strategy Guidance; background information and advice regarding the selection of mitigation actions and completion of the required documentation were provided in the form of a guidance memorandum and a "tip sheet", as described in Sections 6 and 7. (2) Distributed questionnaires for CPG member completion, as described previously. They were the: Hazard Identification Questionnaire, Land Uses and Development Trends Questionnaire, Capability Assessment Questionnaire; (3) Assisted the CPG through preparation of a project Fact Sheet (discussed on Page 1-10) and development of a project web site (discussed beginning on Page 1-8); and (4) presented at each CPG meeting to guide participating jurisdictions through the process, and advise CPG members regarding each step of the process such as hazards identified and profiled, risks and vulnerabilities identified, possible types of mitigation solutions, etc.

Public Involvement in the Plan Development Process

The role of public involvement in the plan development process is to provide the general public with some variety of means to not only learn about the process that the Planning Committee is undertaking, but to voice concerns and to provide input throughout the planning process. CPG members undertook a range of activities to: (a) alert the public to the fact that the Planning Committee was working to develop this Hazard Mitigation Plan, and (b) provide the public an opportunity to participate with a forum to ask questions, and submit comments and/or suggestions on the process.

The Planning Committee pursued a variety of different ways to provide the public with an opportunity to become involved and engaged during the planning process, in addition to ensuring that the participating jurisdictions were also fully aware of the process and were able to contribute and voice their concerns as well as the general public. As such, the following key activities were employed:

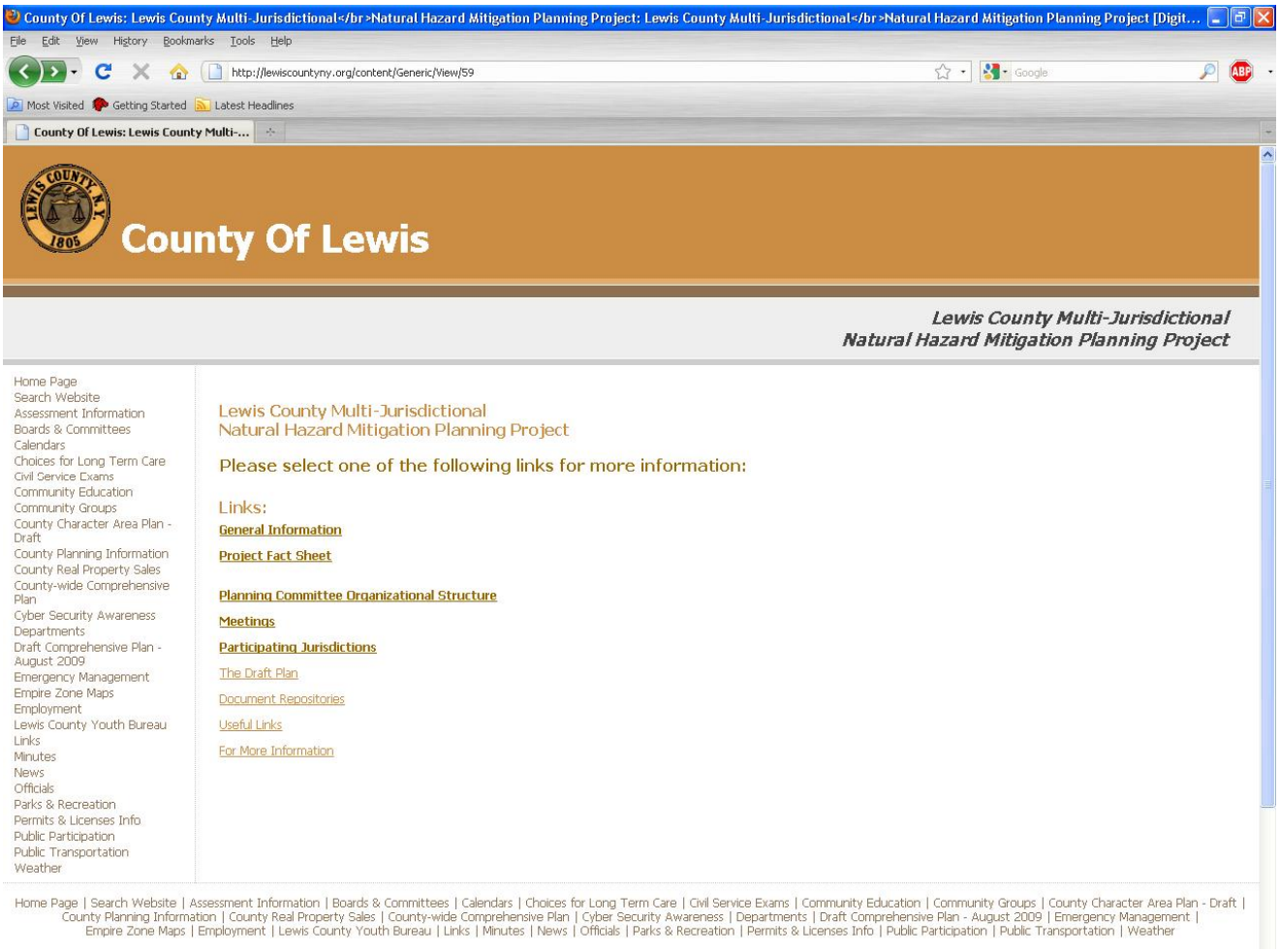
- Lewis County Multi-jurisdictional Mitigation Planning web site
- *Plan Facts* project fact sheet
- Local Radio Announcements
- Articles in local newspapers
- Open Public Meetings
- Other Outreach Activities by LCFEM and CPG Members

Lewis County Multi-Jurisdictional Mitigation Planning Web Site

The CPG made an effort to involve the public and other stakeholders in the process during the drafting stage of the plan in part through a mitigation planning web site. The Lewis County Web Emergency Management web page includes a specific section devoted to the multi-jurisdictional hazard mitigation planning process. It can be found online at:

http://lewiscountyny.org/content/Generic/View/59

The web site was initiated in the early summer of 2009 and will continue to be maintained and updated by LCFEM on a regular basis. The additional web pages were incorporated into the site for the purpose of informing the public (including businesses, local citizens and the residents that are part of the Lewis County communities) about the importance of hazard mitigation planning and their opportunity to participate and provide feedback during the process. In this section, the LCFEM provides general information about the process, the organizational structure of the planning team, meeting information (agendas, presentations, handouts, and minutes), other reference materials, a link for the Risk Assessment Interim Deliverable and the Draft Plan, and more. Contact information for the LCFEM Coordinator is also provided and individuals are invited to reach out to this person for information on how to become involved or to provide comments. The image below is a screen-capture of the main mitigation planning web page on the County's site.



The main page of the website contains as illustrated above presents an introduction to hazard mitigation planning, outlining the purpose and need for the plan, municipal participation and Core Planning Group structure, the basic steps in the process, and key dates in the schedule. A series of links on the main page provides access to the following additional information:

- General Information
- Project Fact Sheet Information
- Planning Committee Organizational Structure
- Participating Jurisdictions
- The *Risk Assessment Interim Deliverable*
- The Draft Plan
- Document Repository
- Useful Links
- For More Information

At least one municipal jurisdiction (The Town of Greig) placed links to the County Mitigation Plan web page on their own municipal website.

PlanFacts

The CPG made an effort to involve the public and other stakeholders in the process during the drafting stage of the plan in part through a fact sheet. The Planning Committee increased public awareness of the hazard mitigation plan process by providing a two-page summation on hazard mitigation facts and the mitigation planning process to the public, community leaders, business owners, local residents and other stakeholders in the plan. The flyer, entitled Lewis *County Multi-Jurisdictional Natural Hazard Mitigation Planning Project PlanFacts*, provides pertinent plan data that explains the purpose and need for the mitigation plan in Lewis County, as well as an outline of the planning process and the participation requirements for local jurisdictions.

The two-page flyer begins by providing a basic understanding to ñWhat is hazard mitigation?ò It then contains information on the plan development process and how jurisdictions can participate in the plan or prepare their own hazard mitigation plans in compliance with DMA 2000 requirements. It also provides an overview of the Hazard Mitigation Planning Committee members and their roles; the steps in the mitigation process (goals, objectives, natural hazards evaluation, etc.); the plan scheduled target completion date; and a point of contact at LCFEM for more information.

PlanFacts was distributed to the attendees at the Core Planning Group Kickoff Meeting on May 21, 2009. It was also posted by several Core Planning Group Members on local notice boards throughout the county. The Fact Sheet can be found electronically at the Lewis County Fire and Emergency Management web site address given above (on the *Meetings* page). A copy of the fact sheet is presented below:

Lewis County
Multi-Jurisdictional
Hazard Mitigation Planning Project
PLAN FACTS
MAY 2009

WHAT IS HAZARD MITIGATION?
Natural hazards have the potential to cause property damage, loss of life, economic hardship, and threats to public health and safety.

Hazard mitigation measures are the things you do today to be more protected in the future. They are measures taken before a disaster happens to reduce the impact that future disasters will have on people and property in the community. Mitigation reduces the risk of loss and creates a more disaster-resistant and sustainable community. Hazard mitigation measures are essential to breaking the typical disaster cycle of damage, reconstruction, and repeated damage.

PURPOSE AND NEED FOR THE PLAN
Hazard mitigation plans are developed BEFORE a disaster strikes. The plans identify community policies, actions, and tools for long-term implementation to reduce risk and potential for future losses. Adopted, implemented and maintained on an ongoing basis, these plans will gradually, but steadily, lessen the impacts associated with hazard events.

As of November 1, 2004 communities without a FEMA-approved hazard mitigation plan are not eligible for FEMA project grant monies under programs such as the Hazard Mitigation Grant Program (HMGP), Flood Mitigation Assistance Program (FMA) and Pre-Disaster Mitigation Grant Program (PDM).

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Lewis County Multi-Jurisdictional Natural Hazard Mitigation Planning Project PLANFACTS

PARTICIPATION
Jurisdictions who wish to be recognized by FEMA as being compliant with DMA 2000 must either: (a) participate in the multi-jurisdictional plan development process and formally adopt the final plan, or (b) prepare their own hazard mitigation plan. All jurisdictions in Lewis County are being invited to participate in the multi-jurisdictional planning process.

To be recognized in FEMA's eyes as successfully participating in the multi-jurisdictional plan, jurisdictions must: participate actively in the planning process; develop unique jurisdictional mitigation actions; and formally adopt the final plan. Active participation involves attending meetings, providing feedback, and reaching out to the public and other key stakeholders in the community.

While the primary advantage of having a mitigation plan in place is the jurisdiction's eligibility to apply for FEMA hazard mitigation project grant monies, participation has other advantages as well:

- Because a consulting team has been hired to conduct the analyses and author the plan, participation involves relatively little effort on the part of jurisdictions.
- Because Federal grant monies have been received to develop the plan, participation involves little cost to local jurisdictions - only allocation of staff time to participate in the process, and a contribution toward the grant's 25% matching funds.
- Multi-jurisdictional hazard mitigation plans are practical for addressing issues that do not recognize political boundaries.
- Over time, implementation of the plan will reduce economic damages resulting from future natural disasters.

STRUCTURE
Elected and appointed government officials, business leaders, volunteers of non-profit organizations, citizens, and other stakeholders who choose to participate will become part of our overall Lewis County Multi-Jurisdictional Hazard Mitigation Planning Committee. To keep meeting sizes to workable numbers, the Planning Committee will be broken up into a Core Planning Group (CPG) and Jurisdictional Assessment Teams (JATs).

The CPG will include representatives of Lewis County and any of the county's jurisdictions who choose to participate in the process. The CPG will oversee the overall plan formulation activities and contribute to the decision making process. The CPG will coordinate the plan efforts by organizing outreach by means of a team concept through the JATs.

The JATs will include representatives from the individual participating jurisdictions. It will be responsible for local community involvement in the multi-jurisdictional mitigation plan.

Regardless of team, all participating jurisdictions must:

- Coordinate and facilitate local efforts.
- Attend meetings.
- Provide information and feedback.
- Involve the public and community stakeholders in the planning process.
- Assess mitigation alternatives.
- Select a course of action to be followed for their communities.
- Plan implementation, monitoring and updates.

PROCESS

- Research a full range of natural hazards.
- Identify subset of significant hazards; these will be the focus of the plan.
- Identify location and extent of hazard areas.
- Identify assets located within hazard areas.
- Characterize existing and potential future assets at risk.
- Assess vulnerabilities to the identified hazards.
- Evaluate and prioritize goals, objectives, and hazard mitigation actions.
- Implement the Plan and monitor its progress.

SCHEDULE
The mitigation plan development process will occur over approximately one year, beginning in the spring of 2009. A Draft Plan is targeted for completion in the spring of 2010.

OUR WEBSITE
A Multi-Jurisdictional Hazard Mitigation Planning Page is currently under development on the County's web site. We encourage you to check back for additional information and updates at: www.lewiscountyny.org.

FOR MORE INFORMATION

Thank you for your interest! For questions or other feedback, please contact:
James Martin, Director
Lewis County
Fire & Emergency Management
Phone: 315-376-5234
E-mail: jmartin@lewiscountyny.org

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PlanFacts was also distributed in hard copy format throughout the County by CPG members. Locations that it has been posted or distributed include local libraries, fire departments, and town/village halls.

Local Media Coverage

The plan was publicized in the local media at several stages in the planning process ï both on local radio and in the main local newspaper. Prior to the February 9, 2010 Risk Assessment Interim Deliverable public meetings, the meetings were publicized via radio station WBRV 101.3 (ñThe Mooseò) in Lowville, with announcements being broadcast several times per day over the period February 7 through February 9. The text of these announcements is included in Appendix H ï Media Coverage.

In addition to local radio coverage, articles publicizing and then reporting on the February 9 public meeting appeared in the *Watertown Daily Times,* on February 6 and February 10, 2010. The text of the articles (plus screen captures from the online editions) is also included in Appendix H. A notice announcing the February 9 meeting was also published in the *Lowville Journal and Republican* local newspaper.

The local press also published an article in September 2008 announcing the Countyôs intention to develop a plan, the purpose of such a plan, and the award to the County of a federal hazard mitigation planning grant. While not strictly part of the planning process covered by this plan, this article demonstrates that efforts were being made in Lewis County to inform the public of the plan at the earliest opportunity, and the text of the article is included in Appendix H.

Public Meetings

While members of the public were informed of the plan throughout the planning process via the fact sheet, local media, and the efforts of local JATs, the public were also specifically invited to participate in the Risk Assessment Question and Answer Sessions, which were held on February 9, 2010. Invitations to the public took the form of local media announcements as described above and collective emailings by LCFEM and local municipal representatives. The meetings were attended by almost 30 people, of whom six had not been previously tasked with involvement in the plan by the County, the municipalities, or the consultant, and who could therefore be considered members of the public or other stakeholders.

An additional public meeting to present the full draft plan was held on May 4, 2010. The primary purpose of this public meeting was to present the draft plan to County Legislators and other officials who will be responsible for adopting the plan by resolution and also for overseeing funding for the implementation of the actions contained in the plan.

Several participating jurisdictions spoke about the mitigation planning process at regularly scheduled meetings in their respective municipalities (for example, town board meetings), granting the public and other stakeholders another opportunity to participate in the process. See Table 1.7 for more information. In addition, open meetings of local governing bodies are to be held before resolutions are passed to formally adopt the plan (see the individual resolutions for more information).

Other Outreach Activities by LCFEM and CPG Members

In addition to the web site, fact sheet, and public meetings, the Core Planning Group (through their respective JATs) undertook numerous other outreach actions, which are summarized in chronological order in Table 1.7 to raise awareness of the plan development process among those not directly tasked with involvement in the plan process, and provide the public and other stakeholders with a forum for participating in - and providing feedback throughout - the plan development process. While participating jurisdictions have provided comments, to date, no documented feedback from the public or other stakeholders has been received. Comments received in time to be incorporated into the Final will be

reviewed by the Consultant and LCFEM and integrated into the plan as applicable. As this is a living document, other comments will be considered for integration during future maintenance cycles and plan updates.

Table 1.7
Summary of Jurisdiction Outreach Activities

Start Date	Jurisdiction	Action
5/13/2009	Denmark, Town of	Discussion of plan and designation of contacts at open town meeting
5/18/2009	Lewis, County of	Discussions with *Lowville Journal and Republican* newspaper to cover the kickoff meeting on 5/21/2009
5/21/2009	Lewis, County of	Hazard mitigation plan web page went live on the County web site
5/22/2009	Lowville, Town of	Posted plan fact sheets on bulletin boards at various locations
5/26/2009	Lyons Falls, Village of	Posted plan fact sheets at village post office, village office/court for West Turin, library, Dorrity's Restaurant
5/30/2009	Lyons Falls, Village of	Presented information on the plan at Village board meeting and distributed more copies of the plan fact sheet.
6/1/2009	Lowville, Village of	Discussed the plan with *Watertown Daily Times* reporter
6/1/2009	Lowville, Town of	Discussed the plan at Planning Board meeting
7/1/2009	Lowville, Village of	Presented information on the plan to Village Board of Trustees
7/15/2009	Lowville, Village of	Initiated regular meetings and discussions with Village Clerk, Treasurer, and DPW Superintendent to discuss the plan.
8/19/2009	Greig, Town of	Report to Town Board meeting about hazard mitigation plan, following August 18 progress meeting/information session.
9/2/2009	Greig, Town of	Posted link to Lewis County Hazard Mitigation Plan web page on Town website: www.townofgreig.org/news Emailed link to 32 town residents asking for input/comment, six responses received regarding hazards of concern.
9/3/2009	Lyons Falls, Village of	Presented information on the plan to local firefighters, distributed plan fact sheet and requested input and suggestions
9/8/2009	Lyonsdale, Town of	Presentation to Town Board meeting with public attendance, requested input to questionnaires.
9/10/2009	Lyons Falls, Village of	Presented information on the plan to Lyons Falls ALIVE community group, distributed plan fact sheet and requested input and suggestions
9/11/2009	Lewis, County of	Redistributed Plan fact sheet to all municipal clerks with instructions to post for public viewing
9/20/2009	Harrisburg, Town of	Posted plan fact sheets at Town offices
10/8/2009	Harrisburg, Town of	Discussed plan progress at public Town board meeting
10/12/2009	West Turin, Town of	Meeting to inform Town Board and public about the hazard mitigation plan.
10/14/2009	Lyons Falls, Village of	Presented information on the plan to Forest Presbyterian Church Women's association, distributed plan fact sheet and requested input and suggestions
11/4/2009	Lewis, County of	Redistributed Plan fact sheet to all municipal clerks with instructions to post for public viewing
11/10/2009	Lyonsdale, Town of	Presentation to Town Board meeting, requested input to CA questionnaire.
11/12/2009	Harrisburg, Town of	Discussed plan progress at public Town board meeting
11/25/2009	Lewis, County of	Presented information on the plan at County Highway Superintendents meeting and requested feedback
11/27/2009	Martinsburg, Town of	Discussion/meeting with highway superintendents

Table 1.7 Summary of Jurisdiction Outreach Activities		
Start Date	**Jurisdiction**	**Action**
12/10/2009	Harrisburg, Town of	Discussed plan progress at public Town board meeting
12/15/2009	Port Leyden, Village of	Discussion of hazard mitigation plan status at Village board meeting
12/16/2009	Lowville, Town of	Presented information on the plan at public hearing
12/31/2009	Greig, Town of	Report to Town Board meeting about hazard mitigation plan progress.
1/2/2010	Lowville, Town of	Reposted plan fact sheet on bulletin board at Town Clerk/Code Office
1/9/2010	Lyonsdale, Town of	Presentation to Town Board meeting, discussed progress and upcoming actions.
1/12/2010	Port Leyden, Village of	Discussion of hazard mitigation plan status and requirements at Village board meeting
1/14/2010	Harrisburg, Town of	Discussed plan progress at public Town board meeting
1/18/2010	Croghan, Town of	Discussion of hazard mitigation plan actions at Town board meeting which was open to the public
1/27/2010	West Turin, Town of	Meeting with Town Highway Superintendent about the plan and possible actions
1/27/2010	Croghan, Town of	Discussion with Highway Superintendents about the plan
2/3/2010	Lewis, County of	Announcement of 2/9/2010 meeting for publication in *Lowville Journal and Republican*
2/4/2010	Lewis, County of	Recorded announcement of 2/9/2010 meeting for broadcast on local radio
2/6/2010	Lewis, County of	Announcement of 2/9/2010 meeting for publication in *Watertown Daily Times*
2/9/2010	West Turin, Town of	Public meeting to review the Risk Assessment Interim Deliverable.
2/9/2010	Port Leyden, Village of	Discussion of hazard mitigation plan actions at Village board meeting
2/10/2010	Denmark, Town of	Discussion of draft plan sections at open town meeting
2/10/2010	Lowville, Town of	Presented information on the plan at Town board meeting
2/11/2010	Lowville, Town of	Discussed the plan with highway superintendent
2/17/2010	Harrisburg, Town of	Discussed plan progress at Town zoning board meeting
2/18/2010	Greig, Town of	Posted link to Risk Assessment Interim Deliverable on Town website, emailed link to 32 Town residents.
2/22/2010	Lowville, Town of	Discussed the plan with Village Police
3/8/2010	Denmark, Town of	Discussion of plan progress at open town meeting
3/9/2010	Port Leyden, Village of	Discussion of hazard mitigation plan actions at Village board meeting
3/11/2010	Harrisburg, Town of	Discussed plan progress and mitigation actions at public Town board meeting
3/17/2010	Osceola, Town of	Meeting with highway department staff about possible actions.
3/17/2010	Martinsburg, Town of	Discussed mitigation actions at Town board meeting
3/18/2010	Osceola, Town of	Meeting with Town Supervisor to review progress and discuss actions

Involvement of Other Stakeholders in the Plan Development Process

In order to meet Federal requirements, the plan development process must be open to stakeholders beyond planning group members and the general public. That is, opportunities must be available for other stakeholders (such as businesses, neighboring communities, academia, other relevant private and non-profit interests, and other interested parties) to become involved in the planning process.

As with the general public, other stakeholders must be provided with some variety of means to not only learn about the process that the Planning Committee is undertaking, but to voice concerns and to provide input throughout the planning process. With support and guidance from URS, each JAT took the lead in pursuing a range of activities to: (a) alert other stakeholders to the fact that the planning was working to develop this Hazard Mitigation Plan, and (b) provide other stakeholders with a forum to ask questions, and to submit comments and/or suggestions on the process or directly participate.

The Core Planning Group determined that outreach activities to the general public as summarized in the previous section would also reach and provide the same opportunities for other stakeholders such as businesses, neighboring communities, academia, other relevant private and non-profit interests, and other interested parties. In addition to the activities listed in Table 1-6, targeted outreach to key stakeholder groups undertaken by the County included:

- Lewis County Soil and Water Conservation District
- Hudson River-Black River Regulating District
- National Grid
- Lewis County Head Start
- Lewis County Search and Rescue
- Climax Manufacturing
- Lowville Wal-Mart

The first four entities listed above actively participated in the planning process by attending CPG meetings and providing relevant information via CPG deliverables such as the Hazard Identification Questionnaire.

Review and Incorporation of Existing Plans, Studies, Reports, and Technical Information

In the process of preparing this hazard mitigation plan, many other existing plans, studies, reports, and technical information were evaluated. These sources are noted throughout this report as various topics are discussed. In summary, the development of this hazard mitigation plan included the review and incorporation as applicable of data from the following sources:

- Readily available on-line information from federal and state agency web sites including: FEMA, NYSEMO, NY State Department of Environmental Conservation, US Forest Service National Avalanche Center, US Geological Survey, National Oceanic and Atmospheric Administration (including National Weather Service and National Climatic Data Center, and the National Severe Storms Laboratory),U.S. Department of Agriculture Natural Resources Conservation Service, U.S. Army Cold Regions Research and Engineering Laboratory USGS National Geomagnetism Program, National Drought Mitigation Center Drought Impact Reporter, USGS National Earthquake Information Center, NASA Space Environment Center, and the US Department of Transportation Federal Highway Authority.
- Lewis County Comprehensive Plan (Draft Final, July 2009)

- Lewis County Comprehensive Emergency Management Plan (July 2008)
- Lewis County Comprehensive Economic Development Strategy Plan (August 2006)
- Lewis County Human Services Coordinated Transport Plan (January 2009)
- ñA History of Lewis County in the State of New Yorkò, Franklin B. Hough, 1860
- New York State Hazard Mitigation Plan (January 2008)
- FEMA Q3 Flood Data and municipal Flood Insurance Studies
- Lewis County GIS data
- Lewis County Planning Department demographic data
- Cornell Cooperative Extension publication ñLewis County Soilsò
- USGS Earthquake History of New York State
- NY State Geological Survey NEHRP Soil Class Mapping
- NY State Landslide Inventory Mapping
- USGS National Landslides Program Landslide Mapping
- NYSGS Landslide Inventory Map (1989)
- USGS Fact Sheet 165-00, Land Subsidence in the United States
- National Agricultural Statistics Service, Lewis County Profile 2007
- New York agricultural Statistics Service, Rockland County Profile, 2002
- HAZUS-MH database for emergency facilities and utilities
- NYSDEC Dams database
- Stanford University National Performance of Dams Program web site
- U.S. Army Corps of Engineers National Inventory of Dams
- New York State Historic Preservation Office GIS shape files for state and federally listed historic and cultural resources
- The American Society of Civil Engineers Standard 7-02, Minimum Design Loads for Buildings and Other Structures and ñWind Zones in the United Statesò map
- New York City Area Consortium for Earthquake Loss Mitigation website
- FEMA Publication 320: Taking Shelter from the Storm
- FEMA NFIP Community Status Book
- FEMA data for NFIP Repetitive Loss Properties and Community Rating System communities
- FEMAôs ñNFIP Floodplain Management Requirements: a Study Guide and Desk Reference for Local Officials (FEMA-480)ò
- USGS Landslide Overview Map of the Conterminous United States, prepared in hard copy format in 1982 by Dorothy H. Radbruch-Hall, Roger B. Colton, William E. Davies, Ivo Lucchitta, Betty A. Skipp, and David J. Varnes (Geologic Survey Professional Paper 1183), compiled digitally by Jonathan W. Godt (USGS Open File Report 97-289), as viewed on NationalAtlas.gov
- American Society of Civil Engineers (ASCE) Standard 7-98: Minimum Design Loads for Buildings and Other Structures
- FEMAôs ñMulti-Hazard Identification and Risk Assessmentò (1997)
- American Meteorological Society ñGlossary of Meteorologyò
- In addition, to conduct their Capability Assessments, local jurisdictions considered relevant plans, codes, and ordinances currently in place such as building codes, zoning ordinances, subdivision ordinances, special purpose ordinances, site plan review requirements, growth management ordinances, comprehensive plans, capital improvements plans, economic development plans, emergency response plans, post-disaster recovery plans, post-disaster recovery ordinances, and real estate disclosure ordinances. For additional information, please see the ñCapabilities and Resourcesò section of this plan.

Regulatory Compliance

This Hazard Mitigation Plan was prepared in a manner consistent with applicable regulations, criteria, and guidance. The Planôs components address the local hazard mitigation planning requirements of the DMA 2000. The Planning Group used FEMAôs Multi-Hazard Mitigation Planning Guidance document of March 2004 (Revised July 2008) as a guide. This document contains what is known as a Crosswalk Reference Document for FEMA reviewers to track where in a document various criteria are addressed. Each criteria must be addressed satisfactorily for a plan to be approved by FEMA. There are three exceptions, with regard to assessing vulnerability. They are:

- Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)
- Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)
- Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)

For the three criteria highlighted in gray in Table 1.8, actions are strongly encouraged by FEMA, though not required by the DMA 2000 Interim Final Rule. While FEMA encourages communities to address such criteria, they are not required for Plan approval. For the Lewis County Multi-Jurisdictional Hazard Mitigation Plan, these three criteria were addressed to the greatest extent practicable in the time available and using the best readily-available data.

The following table summarizes specific requirements in the Interim Final Rule, and whether the regulation implementing DMA 2000 is addressed in this plan. Information in this plan is presented in the order of the plan review criteria for NYSEMO/FEMA reviewerôs ease in evaluating compliance.

Table 1.8
FEMA Plan Review Criteria

FEMA Plan Review Criteria	Addressed in this Plan
Prerequisites	
Adoption by the Local Governing Body: §201.6(c)(5)	Following page i
Multi-Jurisdictional Plan Adoption: §201.6(c)(5)	Following page i
Multi-Jurisdictional Planning Participation: §201.6(a)(3)	Section 1, Apdx F
Planning Process	
Documentation of the Planning Process: §201.6(b) and §201.6(c)(1)	Section 1 and Apdx. G
Risk Assessment	
Identifying Hazards: §201.6(c)(2)(i)	Section 2
Profiling Hazards: §201.6(c)(2)(i)	Section 3a
Assessing Vulnerability: Overview: §201.6(c)(2)(ii)	Section 3a and Apdx. A
Assessing Vulnerability: Addressing Repetitive Loss Properties: §201.6(c)(2)(ii)	Section 3
Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)	Section 3b and Apdx. A
Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)	Section 3c
Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)	Section 3d
Multi-Jurisdictional Risk Assessment: §201.6(c)(2)(iii)	Section 3
Mitigation Strategy	
Local Hazard Mitigation Goals: §201.6(c)(3)(i)	Section 5
Identification and Analysis of Mitigation Actions: §201.6(c)(3)(ii)	Sections 6 - 7 and Apdx. B
Identification and Analysis of Mitigation Actions: NFIP Compliance: §201.6(c)(3)(iii)	Sections 6 - 7 and Apdx. D
Implementation of Mitigation Actions: §201.6(c)(3)(iii)	Section 8 and Apdx. C
Multi-Jurisdictional Mitigation Actions: §201.6(c)(3)(iv)	Section 8 and Apdx. B
Plan Maintenance Process	
Monitoring, Evaluating, and Updating the Plan: §201.6(c)(4)(i)	Section 9
Incorporation into Existing Planning Mechanisms: §201.6(c)(4)(ii)	Section 9
Continued Public Involvement: §201.6(c)(4)(iii)	Section 9

Document Organization

This Multi-Jurisdictional Hazard Mitigation Plan for Lewis County is organized into the following major sections.

Introduction. Plan purpose, overview of Lewis County, summary of plan development process, document organization, and key terms.

Identification of Potential Hazards. Documentation of the Planning Committeeôs evaluation of a full range of natural hazards, and indication of which hazards were identified for inclusion in this plan (and why) versus those that were not identified (and why not).

Risk Assessment. Hazard profiles, identification and characterization of assets in hazard areas, damage estimates, and summary of land uses and development trends in hazard areas.

Capabilities and Resources. Overview of local, state, and federal resources for hazard mitigation.

Mitigation Goals. Summary of hazard mitigation goals for the State Hazard Mitigation Plan and also for this county-wide multi-jurisdictional hazard mitigation plan.

Range of Alternative Mitigation Actions Considered. Summary of mitigation actions considered by participating jurisdictions.

Action Item Evaluation and Prioritization. Information regarding the methodology and process followed by participating jurisdictions to evaluate and prioritize unique hazard mitigation actions for their communities.

Implementation Strategy. Summary of hazard mitigation actions selected by each participating jurisdiction.

Plan Maintenance. Procedures selected for monitoring, evaluating, and updating this mitigation plan; including participation of the public and other stakeholders in plan maintenance, and plan integration.

Key Terms

For the purpose of clarity throughout this document, the following definitions are briefly outlined:

- **Hazard mitigation** is the method by which measures are taken to reduce, eliminate, avoid or redirect natural hazards in order to diminish or eradicate the long-term risks to human life and property.

- A **natural hazard** is any hazard that occurs or results from acts of nature such as floods, earthquakes, hurricanes, tornadoes and coastal storms, to name a few.

- A **hazard mitigation plan** is a well-organized and well-documented evaluation of the natural hazards and the extent that the events will occur. In addition, the plan identifies the vulnerability to the effects of the natural hazards typically present in a certain area, as well as the goals,

objectives and actions required for minimizing future loss of life and property damage as a result of natural hazards.

- **Hazard mitigation planning** is the process of managing actions taken by individual citizens and professional organizations involved in mitigation activities. The process involves carrying out plans to reduce loss of life, injuries and damage to property, as well as reducing the costs associated with losses from natural hazards. It is a long-term process with benefits best realized over time.

- A **disaster** is any catastrophic event that causes loss of life, injuries and widespread destruction to property. For the purpose of this document, a disaster is the result of a natural hazard, whether anticipated (such as flash flood warnings) or fortuitous (such as earthquakes).

- The term **human-caused hazards** refers to technological hazards and terrorism, where ñtechnological hazardsò are incidents that arise from human activities such as the manufacture, transportation, storage, and use of hazardous materials, where the incidents are accidental and their consequences unintended; and ñterrorismò is the intentional, criminal, and/or malicious acts resulting from the use of Weapons of Mass Destruction (WMD), including biological, chemical, nuclear, and radiological weapons; arson, incendiary, explosive and armed attacks; industrial sabotage and intentional hazardous materials releases; and cyberterrorism.

SECTION 2 - IDENTIFICATION OF POTENTIAL HAZARDS

FEMAôs current regulations and interim guidance require, at a minimum, an evaluation of a full range of natural hazards. An evaluation of ñhuman-causedò hazards (i.e., technological hazards and/or terrorism) is encouraged, though not required, for plan approval under DMA 2000. Lewis County has chosen to focus solely on natural hazards at this time. Human-caused hazards can be evaluated in future versions of the plan, as it is a ñliving documentò which will be monitored, evaluated and updated regularly.

After consideration of a full range of natural hazards, the participating jurisdictions have identified several hazards that are addressed in this Multi-Jurisdictional Hazard Mitigation Plan. These hazards were identified through an extensive process that utilized direct input from Core Planning Group members (primarily in the form of a Hazard Identification Questionnaire), research of past disaster declarations in the County, and review of the New York State Hazard Mitigation Plan (2008). Readily available online information from reputable sources (such as Federal and state agencies) was also evaluated to supplement information from these key sources.

The following table (Table 2.1) presents the full range of natural hazards considered and provides a brief description of the hazard. Subsequently, Table 2.2 documents the evaluation process for the hazards listed in Table 2.1 to determine the hazards worthy of further consideration in the plan. For each hazard considered, Table 2.2 indicates whether or not the hazard was identified as a significant hazard to be addressed in the plan, how this determination was made (i.e. the sources of information that were consulted while researching each hazard) and why this determination was made. The table summarizes not only those hazards that *were* identified (and why) but also those that *were not* identified (and why not).

Some of these hazards are considered to be interrelated or cascading (e.g., hurricanes can cause wind damage and flooding), but for preliminary hazard identification purposes these individual hazards have been broken out separately. It should also be noted that some hazards, such as earthquakes or winter storms may impact a large area yet cause little damage, while other hazards, such as a tornado, may impact a small area yet cause extensive damage within that area.

While the members of the Core Planning Group essentially concurred with this initial selection of hazards to be profiled and addressed, occasional responses argued for the inclusion for some additional hazards such as lightning and hailstorms, but since these responses and further research did not produce any additional supporting data, the list of profiled hazards was not expanded beyond the initial selection. However, because this Hazard Mitigation Plan is a living document, hazard events not identified for inclusion at this time could be addressed during future evaluations and updates of the plan if deemed necessary by the Core Planning Group at that time.

Lastly, Table 2.3 provides a summary checklist of the hazard identification and evaluation process noting which of the 23 initially identified hazards are considered significant enough for further evaluation through the multi-jurisdictional hazard risk assessment (marked with a ñ☑ò).

Table 2.1
Descriptions of the Full Range of Initially Identified Hazards

Hazard	Description
ATMOSPHERIC	
Avalanche	A rapid fall or slide of a large mass of snow down a mountainside.
Extreme Temperatures	Extreme heat and extreme cold constitute different conditions in different parts of the country. Extreme cold can range from near freezing in the South to temperatures well below zero in the North. Similarly, extreme heat is typically recognized as the condition whereby temperatures hover ten degrees or more above the average high temperature for a region for an extended period.
Extreme Wind	Wind is air that is in constant motion relative to the surface of the earth. Extreme wind events can occur suddenly without warning. They can occur at any time of the day or night, in any part of the country. Extreme winds pose a threat to lives, property, and vital utilities primarily due to the effects of flying debris and can down trees and power lines. Extreme winds are most commonly the result of hurricanes, tropical storms, norôeasters, severe thunderstorms and tornadoes, but can also occur in their absence as mere ñwindstorms.ò One type of windstorm, the downburst, can cause damage equivalent to a strong tornado.
Hailstorm	Any storm that produces hailstones that fall to the ground; usually used when the amount or size of the hail is considered significant. Hail is formed when updrafts in thunderstorms carry raindrops in to parts of the atmosphere where the temperatures are below freezing.
Hurricane and Tropical Storm	Hurricanes and tropical storms are classified as cyclones and defined as any closed circulation developing around a low-pressure center in which the winds rotate counter-clockwise in the Northern Hemisphere (or clockwise in the Southern Hemisphere) and with a diameter averaging 10 to 30 miles across. When maximum sustained winds reach or exceed 39 miles per hour, the system is designated a tropical storm, given a name, and is closely monitored by the National Hurricane Center. When sustained winds reach or exceed 74 miles per hour the storm is deemed a hurricane. The primary damaging forces associated with these storms are high-level sustained winds, heavy precipitation and tornadoes. Coastal areas are also vulnerable to the additional forces of storm surge, wind-driven waves and tidal flooding which can be more destructive than cyclone wind. The majority of hurricanes and tropical storms form in the Atlantic Ocean, Caribbean Sea and Gulf of Mexico during the official Atlantic hurricane season, which extends from June through November.
Lightning	Lightning is a discharge of electrical energy resulting from the buildup of positive and negative charges within a thunderstorm, creating a ñboltò when the buildup of charges becomes strong enough. This flash of light usually occurs within the clouds or between the clouds and the ground. A bolt of lightning can reach temperatures approaching 50,000 degrees Fahrenheit. Lightning rapidly heats the sky as it flashes, but the surrounding air cools following the bolt. This rapid heating and cooling of the surrounding air causes thunder. On average, 73 people are killed each year by lightning strikes in the United States.
Nor'easter	Similar to hurricanes, norôeasters are ocean storms capable of causing substantial damage to coastal areas in the Eastern United States due to their associated strong winds and heavy surf. Nor'easters are named for the winds that blow in from the northeast and drive the storm up the East Coast along the Gulf Stream, a band of warm water that lies off the Atlantic coast. They are caused by the interaction of the jet stream with horizontal temperature gradients and generally occur during the fall and winter months when moisture and cold air are plentiful. Norôeasters are known for dumping heavy amounts of rain and snow, producing hurricane-force winds, and creating high surf that causes severe beach erosion and coastal flooding.
Tornado	A tornado is a violently rotating column of air that has contact with the ground and is often visible as a funnel cloud. Its vortex rotates cyclonically with wind speeds ranging from as low as 40 mph to as high as 300 mph. Tornadoes are most often generated by thunderstorm activity when cool, dry air intersects and overrides a layer of warm, moist air forcing the warm air to rise rapidly. The destruction caused by tornadoes ranges from light to catastrophic depending on the intensity, size and duration of the storm.
Winter Storm	Winter storms may include snow, sleet, freezing rain, or a mix of these wintry forms of precipitation. Blizzards, the most dangerous of all winter storms, combine low temperatures, heavy snowfall, and winds of at least 35 miles per hour, reducing visibility to only a few yards. Ice storms occur when moisture falls and freezes immediately upon impact on trees, power lines, communication towers, structures, roads and other hard surfaces. Winter storms and ice storms

Table 2.1
Descriptions of the Full Range of Initially Identified Hazards

Hazard	Description
	can down trees, cause widespread power outages, damage property, and cause fatalities and injuries to human life.
HYDROLOGIC	
Coastal Erosion	Landward displacement of a shoreline caused by the forces of waves and currents. Coastal erosion is measured as the rate of change in the position or horizontal displacement of a shoreline over a period of time. It is generally associated with episodic events such as hurricanes and tropical storms, norôeasters, storm surge and coastal flooding but may also be caused by human activities that alter sediment transport. Construction of shoreline protection structures can mitigate the hazard, but may also exacerbate it under some circumstances.
Dam Failure	Dam failure is the collapse, breach, or other failure of a dam structure resulting in downstream flooding. In the event of a dam failure, the energy of the water stored behind even a small dam is capable of causing loss of life and severe property damage if development exists downstream of the dam. Dam failure can result from natural events, human-induced events, or a combination of the two. The most common cause of dam failure is prolonged rainfall that produces flooding. Failures due to other natural events such as hurricanes, earthquakes or landslides are significant because there is generally little or no advance warning.
Drought	A prolonged period of less than normal precipitation such that the lack of water causes a serious hydrologic imbalance. Common effects of drought include crop failure, water supply shortages, and fish and wildlife mortality. High temperatures, high winds, and low humidity can worsen drought conditions and also make areas more susceptible to wildfire. Human demands and actions have the ability to hasten or mitigate drought-related impacts on local communities.
Flood	The accumulation of water within a water body which results in the overflow of excess water onto adjacent lands, usually floodplains. The floodplain is the land adjoining the channel of a river, stream ocean, lake or other watercourse or water body that is susceptible to flooding. Most floods fall into the following three categories: riverine flooding, coastal flooding, or shallow flooding (where shallow flooding refers to sheet flow, ponding and urban drainage).
Ice Jams	A formation of ice over a body of water that limits the flow of the water due to freezing. Ice jam flooding occurs when warm temperatures and heavy rain cause the snow to melt rapidly, causing frozen rivers or lakes to overflow. As the water lifts, the ice thatôs formed on top of the body of water breaks into small pieces of varying sizes. These pieces or large chunks of ice tend to float downstream and often pile up near narrow passages or near obstructions, such as bridges and dams. This accumulation can impact the integrity of the structures and also cause upstream flooding as water backs up behind the obstruction.
Storm Surge	A storm surge is a large dome of water often 50 to 100 miles wide and rising anywhere from four to five feet in a Category 1 hurricane up to more than 30 feet in a Category 5 storm. Storm surge heights and associated waves are also dependent upon the shape of the offshore continental shelf (narrow or wide) and the depth of the ocean bottom (bathymetry). A narrow shelf, or one that drops steeply from the shoreline and subsequently produces deep water close to the shoreline, tends to produce a lower surge but higher and more powerful storm waves. Storm surge arrives ahead of a stormôs actual landfall and the more intense the hurricane is, the sooner the surge arrives. Storm surge can be devastating to coastal regions, causing severe beach erosion and property damage along the immediate coast. Further, water rise caused by storm surge can be very rapid, posing a serious threat to those who have not yet evacuated flood-prone areas.
Wave Action	The characteristics and effects of waves that move inland from an ocean, bay, or other large body of water. Large, fast moving waves can cause extreme erosion and scour and their impact on buildings can cause severe damage. During hurricanes and other high-wind events, storm surge and wind increase the destructiveness of waves and cause them to reach higher elevations and penetrate further inland.
GEOLOGIC	
Earthquake	A sudden, rapid shaking of the Earth caused by the breaking and shifting of rock beneath the surface. This movement forces the gradual building and accumulation of energy. Eventually, strain becomes so great that the energy is abruptly released, causing the shaking at the earthôs surface which we know as an earthquake. Roughly 90 percent of all earthquakes occur at the boundaries where plates meet, although it is possible for earthquakes to occur entirely within plates. Earthquakes can affect hundreds of thousands of square miles; cause damage to property

Table 2.1
Descriptions of the Full Range of Initially Identified Hazards

Hazard	Description
	measured in the tens of billions of dollars; result in loss of life and injury to hundreds of thousands of persons; and disrupt the social and economic functioning of the affected area.
Expansive Soils	Soils that will exhibit some degree of volume change with variations in moisture conditions. The most important properties affecting degree of volume change in a soil are clay mineralogy and the aqueous environment. Expansive soils will exhibit expansion caused by the intake of water and, conversely, will exhibit contraction when moisture is removed by drying. Generally speaking, they often appear sticky when wet, and are characterized by surface cracks when dry. Expansive soils become a problem when structures are built upon them without taking proper design precautions into account with regard to soil type. Cracking in walls and floors can be minor, or can be severe enough for the home to be structurally unsafe.
Landslide	The movement of a mass of rock, debris, or earth down a slope when the force of gravity pulling down the slope exceeds the strength of the earth materials that comprise the slope to hold it in place. Slopes greater than 10 degrees are more likely to slide, as are slopes where the height from the top of the slope to its toe is greater than 40 feet. Slopes are also more likely to fail if vegetative cover is low and/or soil water content is high.
Land Subsidence	The gradual settling or sudden sinking of the Earthôs surface due to the subsurface movement of earth materials. Causes of land subsidence include groundwater pumpage, aquifer system compaction, drainage of organic soils, underground mining, hydrocompaction, natural compaction, sinkholes, and thawing permafrost.
Tsunami	A series of waves generated by an undersea disturbance such as an earthquake. The speed of a tsunami traveling away from its source can range from up to 500 miles per hour in deep water to approximately 20 to 30 miles per hour in shallower areas near coastlines. Tsunamis differ from regular ocean waves in that their currents travel from the water surface all the way down to the sea floor. Wave amplitudes in deep water are typically less than one meter; they are often barely detectable to the human eye. However, as they approach shore, they slow in shallower water, basically causing the waves from behind to effectively ñpile upò, and wave heights to increase dramatically. As opposed to typical waves which crash at the shoreline, tsunamis bring with them a continuously flowing ówall of waterô with the potential to cause devastating damage in coastal areas located immediately along the shore.
Volcano	A mountain that opens downward to a reservoir of molten rock below the surface of the earth. While most mountains are created by forces pushing up the earth from below, volcanoes are different in that they are built up over time by an accumulation of their own eruptive products: lava, ash flows, and airborne ash and dust. Volcanoes erupt when pressure from gases and the molten rock beneath becomes strong enough to cause an explosion.
OTHER	
Wildfire	An uncontrolled fire burning in an area of vegetative fuels such as grasslands, brush, or woodlands. Heavier fuels with high continuity, steep slopes, high temperatures, low humidity, low rainfall, and high winds all work to increase risk for people and property located within wildfire hazard areas or along the urban/wildland interface. Wildfires are part of the natural management of forest ecosystems, but most are caused by human factors. Over 80 percent of forest fires are started by negligent human behavior such as smoking in wooded areas or improperly extinguishing campfires. The second most common cause for wildfire is lightning.

Table 2.2
Documentation of the Hazard Evaluation Process

Natural Hazards Considered	Was this hazard identified as a significant hazard to be addressed in the plan at this time? (Yes or No)	How was this determination made?	Why was this determination made?
ATMOSPHERIC HAZARDS			
Avalanche	NO	• Review of US Forest Service National Avalanche Center web site • Review of NY State Hazard Mitigation Plan • Review of FEMAôs Multi-Hazard Identification and Risk Assessment	• Avalanches are not included in the State Hazard Mitigation Plan, and are not discussed for New York on the US Forest Service Avalanche Center web site. • While avalanches are not unknown in northern New York State, the topography and climate in Lewis County do not support conditions required for the occurrence of significant avalanches.
Extreme Temperatures	**YES**	• Review of NY State Hazard Mitigation Plan • Review of National Oceanic and Atmospheric Administration (NOAA) National Climatic Data Center (NCDC) Database • Review of FEMAôs Multi-Hazard Identification and Risk Assessment (MHIRA) • Lewis County HAZNY Risk Assessment. • Lewis County Planning Group	• Extreme heat events are mentioned in the State Plan as a discrete hazard. Extreme cold is mentioned in the context of winter storms. • The State Plan does not record any significant instances of extreme heat since June 1994 that have specifically affected Lewis County. • According to the State plan, almost 20% of the population of Lewis County are vulnerable to extreme heat events (i.e. under 5 years of age or over 65), ranking Lewis County 25th out of 62 counties in the State. • NCDC reports three significant extreme temperature events for areas including Lewis County between February 1993 and March 2009 (including one extreme winter cold event and two unseasonably warm events). While $50,000 in property damages were attributed to the extreme cold event in the overall region, these events are recorded as having caused no deaths, injuries, property damage or crop damages specifically recorded in Lewis County. • According to US Department of Commerce data reproduced in FEMAôs MHIRA guidance, there is a 5% chance that summer temperatures will exceed 105° ï 110° in any given year. This is consistent with most of the rest of the State, except for some counties in the extreme east of the State, which can expect to experience slightly higher temperatures. • Extreme temperatures were not specifically considered in the Lewis County HAZNY study.
Extreme Wind	**YES**	• Review of NY State Hazard Mitigation Plan • Review of FEMAôs MHIRA	• Extreme wind events are included in the State Plan in the context of hurricane and tornado events. • The State Plan ranks Lewis County as last

Table 2.2
Documentation of the Hazard Evaluation Process

Natural Hazards Considered	Was this hazard identified as a significant hazard to be addressed in the plan at this time? (Yes or No)	How was this determination made?	Why was this determination made?
		• Review of NOAA NCDC Storm Events Database • Review of American Society of Civil Engineers (ASCE) Standard 7-02 (Minimum Design Loads for Buildings and Other Structures) • Review of Wind Zones in the United States as per FEMA Publication 320 ï Taking Shelter From the Storm • Lewis County HAZNY • Lewis County Planning Group	out of all 62 counties in the state for the threat of extreme wind and vulnerability to extreme wind losses, mainly due to the comparatively small number of structures in the County. • Lewis County is located in a climate region that is susceptible to several types of extreme wind events including straight line winds and severe thunderstorms. • According to FEMA-320, Lewis County is located in a wind zone where extreme wind speeds of 160mph are possible. • NCDC reports 106 high wind events (wind speed > 50 knots/58 mph) for Lewis County since June 1966, of which 88 have been recorded since 1990, when detailed records begin. These events have most often been associated with thunderstorms, and have caused more than $40 million in property damage and $400,000 crop damages in the affected area including Lewis County. Extreme wind events are recorded by NCDC as directly causing one death in Lewis County since 1966. • The 3 second wind gust for Lewis County for building design purposes as per ASCE 7-02 is between 90 and 95 mph. • Extreme winds were not specifically considered in the Lewis County HAZNY study.
Hailstorm	NO	• Review of NY State Hazard Mitigation Plan • Review of FEMAôs Multi-Hazard Identification and Risk Assessment • Review of NOAA NCDC Storm Events Database and NOAA National Severe Storms Laboratory (NSSL) web site • Lewis County HAZNY • Lewis County Planning Group	• The state plan includes hailstorms as a discrete hazard. • NCDC reports 13 severe hailstorm events (at least 3/4 inch diameter hail or greater) for Lewis County between June 1969 and March 2009. Four of these events produced hailstones of one inch diameter or larger. For all these events there are approximately $100,000 recorded total property damages, but no recorded crop damages, deaths or injuries in Lewis County. When annualized, these damages amount to only $2,500 per year across the whole county. • According to NSSL data, Lewis County is located in a part of the USA with the lowest annual number of days with hailstorms (less than one), and where the annual average number of damaging hail events is less than 0.25. • There are few hazard mitigation techniques available to reduce hailstorm impacts to property, outside of the emergency

Table 2.2
Documentation of the Hazard Evaluation Process

Natural Hazards Considered	Was this hazard identified as a significant hazard to be addressed in the plan at this time? (Yes or No)	How was this determination made?	Why was this determination made?
			preparedness procedures and severe weather warning systems already in place (i.e. mass public notifications that recommend immediate protective actions). There are essentially no practicable hail mitigation measures for crops, which often incur far greater hail damages than structures or other property. • Hailstorms were not specifically addressed in the Lewis County HAZNY study.
Hurricane and Tropical Storm	NO	• Review of NY State Hazard Mitigation Plan • Analysis of NOAA historical tropical cyclone tracks • Review of NOAA National Hurricane Center website • Review of NOAA NCDC Storm Events Database and National Hurricane Center web site • Review of FEMAôs Multi-Hazard Identification and Risk Assessment • Lewis County HAZNY • Lewis County Planning Group	• Hurricane and tropical storm events are discussed in the State Plan, which includes FEMA mapping showing Lewis County located outside the area of New York State considered to be hurricane-prone. • NOAA historical data records the tracks of 18 tropical or former tropical storms that have passed within 100 nautical miles of the approximate center of Lewis County since 1876. Of these 18 storms, none have been classed as full hurricanes of any category, five have been classed as tropical storms, two have been tropical depressions, and 11 have been classified as extratropical, meaning that by the time an advisory was issued for the Lewis County area, these formerly tropical storms had lost their tropical characteristics including their energy source. • None of the 18 storm tracks recorded by NOAA passed directly over any portion of Lewis County. • The most recent of the recorded events to pass close to Lewis County was Extratropical Storm Frances, the center of which passed through Jefferson and St. Lawrence Counties in September 2004. Only two other storms have been recorded passing within comparable distances of Lewis County; Extratropical Storm Dennis in September 1999, and an unnamed tropical storm in August 1933. • NCDC does not report any hurricane/tropical storm events directly affecting Lewis County between January 1950 and March 2009 • Hurricanes and tropical storms were not specifically considered in the Lewis County HAZNY study, although ñSevere Stormsò were placed 10th (moderately low risk) out of the 15 hazards considered in the Lewis County HAZNY study.

Table 2.2
Documentation of the Hazard Evaluation Process

Natural Hazards Considered	Was this hazard identified as a significant hazard to be addressed in the plan at this time? (Yes or No)	How was this determination made?	Why was this determination made?
Lightning	NO	• Review of NY State Hazard Mitigation Plan • Review of NOAA NCDC Storm Events Database, NOAA lightning statistics, and NSSL web site • Review of FEMAôs Multi-Hazard Identification and Risk Assessment • Lewis County HAZNY • Lewis County Planning Group	• Lightning is not considered as a discrete hazard in the State Plan or in the Lewis County HAZNY. • According to NOAA and FEMA data, Lewis County is located in an area of the country that experiences an average of only two to five lightning flashes per square mile per year. For comparison, large areas of the USA experience more than 25 lightning flashes per square mile annually. • NOAA records that New York State has experienced the fourth most deaths and third most damages from lightning in the United States from 1959 to 1994. • While local sources have reported occasional damaging lightning strikes in Lewis County, NCDC reports no significant lightning events for Lewis County between 1950 and March 2009.
Norôeaster	NO	• Review of NY State Hazard Mitigation Plan • Review of NOAA NCDC Storm Events Database • Review of FEMAôs Multi-Hazard Identification and Risk Assessment • Lewis County HAZNY • Lewis County Planning Group	• Norôeasters are not considered as a discrete hazard in the State Plan, but are mentioned as a common cause of flooding and snowstorms, particularly in the southeastern part of New York State. • While the southeastern parts of New York State commonly experience all the potential effects of norôeasters (heavy rain, riverine and coastal flooding, storm surges, heavy surf/waves, coastal erosion, and heavy snowfall), readily available information indicates that Lewis County has only occasionally been affected by heavy snowfalls attributable to norôeasters. For further consideration of heavy snowfall, see *Winter Storm*. • Norôeasters were not considered as a specific hazard in the Lewis County HAZNY.
Tornado	**YES**	• Review of NY State Hazard Mitigation Plan • Review of NOAA NCDC Storm Events Database and NSSL web site • Review of FEMAôs Multi-Hazard Identification and Risk Assessment • Lewis County HAZNY • Lewis County Planning Group	• The State Plan acknowledges that all of New York State has a definite vulnerability to tornadoes, with a statewide average annual occurrence of 6 tornadoes per year since 1950. • NCDC reports four tornado events in Lewis County between July 1969 and June 2008. These events have resulted in no recorded deaths or injuries but have caused $95,000 in property damage. Of the four recorded events, two were of magnitude F1 (moderate damage) on the Fujita scale and two were F0 (light damage). • NSSL tornado probability data indicate that

Table 2.2
Documentation of the Hazard Evaluation Process

Natural Hazards Considered	Was this hazard identified as a significant hazard to be addressed in the plan at this time? (Yes or No)	How was this determination made?	Why was this determination made?
			while Lewis County is in an area that experiences 0 to 0.2 tornado events per year, life-threatening and damaging tornado events remain a possibility. • Tornados were not specifically considered in the Lewis County HAZNY study.
Winter Storm	**YES**	• Review of NY State Hazard Mitigation Plan • Review of FEMAôs Multi-Hazard Identification and Risk Assessment (MHIRA) • Review of NOAA NCDC Storm Events Database • New York State Climate Office web site • Lewis County HAZNY • Lewis County Planning Group	• Winter storms including heavy snow and ice storms are discussed in the State Plan, which notes that Lewis County is one of the three counties in the State receiving the heaviest annual snowfall, with an average of 158 inches per year, . The statewide average is 65 inches, with 60% of the state experiencing at least 70 inches annually. • The State plan ranks Lewis County 25th out of 62 counties in the state for most threatened by snow and vulnerable to snow losses, based on a combined assessment of annual and extreme snowfall, snow-related disasters, and estimated numbers of structures in each county. The plan also ranks Lewis County 35th out of 62 for most vulnerable to ice storms and ice storm losses, based on a combined assessment of ice storm occurrences and numbers of structures. • FEMAôs MHIRA guidance indicates that Lewis County experiences an average of 15-18 hours of freezing rain per year, with only a few isolated areas in Maine, Massachusetts and elsewhere in New York State experiencing more per year in the contiguous United States. • NCDC reports that Lewis County has been affected by 129 significant snow and ice events between January 1993 and March 2009. More than $92 million in property damages are attributed to these events, including some damages occurring outside Lewis County. • FEMA and NYSEMO records show that Lewis County has been specifically included in two snow-related disaster declarations, two ice storm disaster declarations, and four snow-related emergency declarations since 1977. • Ice storms/severe winter storms were placed 5th and 6th respectively (moderately high risk) out of the 15 hazards in the Lewis County HAZNY study. Of the natural hazards in the study, only floods and fire were ranked higher.

Table 2.2
Documentation of the Hazard Evaluation Process

Natural Hazards Considered	Was this hazard identified as a significant hazard to be addressed in the plan at this time? (Yes or No)	How was this determination made?	Why was this determination made?
HYDROLOGIC HAZARDS			
Coastal Erosion	NO	• Review of NY State Hazard Mitigation Plan • Review of FEMAôs Multi-Hazard Identification and Risk Assessment	• While coastal erosion is identified as a hazard and discussed in the State plan, it does not apply to Lewis County since the county has no ocean or great lakes coastline.
Dam Failure	**YES**	• Review of NY State Hazard Mitigation Plan • Review of New York State Department of Environmental Conservation (NYSDEC) Bureau of Flood Protection and Dam Safety database • Review of Stanford Universityôs National Performance of Dams Program (NPDP) database • Review of FEMAôs Multi-Hazard Identification and Risk Assessment • Lewis County HAZNY • Lewis County Planning Group	• Dam Failure is briefly discussed in the State Plan as a potential cause of flooding. • The NYSDEC database records 109 dams in Lewis County, of which five are classified as having ñHighò hazard potential, nine with ñModerateò hazard potential, and the remainder with ñLowò or ñNone.ò • According to USGS criteria, there are five ñMajorò dams in the County, by virtue of having a dam height of more than 50 feet or a normal storage volume of more than 5,000 acre-feet. Of these, two are ñHighò hazard dams, two are ñModerateò hazard and one ñLowò hazard potential. • Only one of the ñMajorò dams in the County meets both the dam height and normal storage criteria ï the Soft Maple Terminal Dam in the Town of Croghan, which is classified as ñModerateò hazard by NYSDEC. • The NPDP database records 13 dam incidents involving failure, misoperation or flooding related to dams in Lewis County since detailed records began in 1868. • Dam failure was placed 12th (moderately low risk) out of the 15 hazards considered in the Lewis County HAZNY study.
Drought	**YES**	• Review of NY State Hazard Mitigation Plan • Review of FEMAôs Multi-Hazard Identification and Risk Assessment • Review of NOAA NCDC Database • Review of National Drought Mitigation Center /NOAA web sites • US Department of Agriculture National Agricultural Statistics Survey: 2007 Census of Agriculture • Lewis County HAZNY • Lewis County Planning	• Drought is discussed in the State Plan, which lists Lewis County as being in NYSDEC Drought Management Region V (Adirondack). • While droughts may have widespread social and economic effects, for the purposes of this plan the primary impacts of drought are assumed to fall on agriculture, which is economically significant in Lewis County: According to the USDA Agricultural Census of 2007, there are 616 farms in the County, covering more than 167,000 acres, or approximately 20% of the County land area. The market value of agricultural products sold in 2007 was more than $112 million, of which almost $7 million came from crop sales.

Table 2.2
Documentation of the Hazard Evaluation Process

Natural Hazards Considered	Was this hazard identified as a significant hazard to be addressed in the plan at this time? (Yes or No)	How was this determination made?	Why was this determination made?
		Group	• NCDC records one significant drought having some impact on Lewis County, this event took place in the summer and fall of 1993 and is recorded as having caused $50 million in crop damages across eastern New York State. • According to the Palmer Drought Severity Index (PDSI) Map for the USA, Lewis County is located in an area that experienced drought conditions for less than 5% of the period 1895 to 1995. • Droughts were placed 14th (low risk) out of the 15 hazards considered in the Lewis County HAZNY study.
Flood	**YES**	• Review of NY State Hazard Mitigation Plan • Review of NOAA NCDC Storm Events Database • Review of FEMAôs Multi-Hazard Identification and Risk Assessment • Review of FEMAôs National Flood Insurance Program (NFIP) Community Status Book and Community Rating System (CRS) • Review of FEMA Flood Insurance Rate Maps (FIRMs) for Lewis County municipalities participating in the NFIP • Lewis County HAZNY • Lewis County Planning Group	• Flooding is described in the State Plan as the primary natural hazard in the State of New York and is discussed in comprehensive detail. • Of the seven Federal disaster declarations covering Lewis County since 1985, four have been triggered by flooding. • NCDC records 21 flood events affecting Lewis County since April 1994. More than $4 million in damages was attributed to these events. • A review of digitized Lewis County FIRMs overlaid on aerial photographs of the County indicate that there are structures located in the 1% annual chance (ñ100-yearò) floodplain in more than of half the municipalities in Lewis County. • All except one of the 26 municipalities covered by this plan participate in the NFIP but none participate in the CRS, which provides discounted flood insurance premiums for communities choosing to implement floodplain management measures over and above the statutory minimum. • Floods were placed 3rd (moderately high risk) out of the 15 hazards considered in the Lewis County HAZNY study, and were the highest ranked natural hazard.
Ice Jams	**YES**	• Review of NY State Hazard Mitigation Plan • Review of FEMAôs Multi-Hazard Identification and Risk Assessment • USACE Cold Regions Research & Engineering Laboratory (CRREL) Ice Jams Database	• Ice jams are mentioned as a significant cause of flooding in the State Plan ï New York State has experienced more ice jam events than any other U.S. state except Montana in the period 1867 through 2007. • The USACE CRREL Ice Jams database records more than 30 ice jam incidents on all watercourses in Lewis County from 1875 to 2007. While no damages are recorded by

Table 2.2
Documentation of the Hazard Evaluation Process

Natural Hazards Considered	Was this hazard identified as a significant hazard to be addressed in the plan at this time? (Yes or No)	How was this determination made?	Why was this determination made?
		• Lewis County HAZNY • Lewis County Planning Group	CRREL for these incidents, ice jams occur fairly regularly in Lewis County and have the potential to cause flooding and other concerns such as damage to bridges and river control structures. The NCDC data for flood events records one additional event during which significant flooding was caused by an ice jam. • Ice jams were placed 13th (moderately low risk) out of the 15 hazards considered in the Lewis County HAZNY study.
Storm Surge	NO	• Review of NY State Hazard Mitigation Plan • Review of FEMAôs Multi-Hazard Identification and Risk Assessment	• While storm surge is discussed in the State Plan in the flood hazard and hurricane/tropical storm hazard profiles, storm surges are considered a coastal phenomenon. Since Lewis County is located more than 200 miles from the nearest ocean coastline, and between 20 and 50 miles from the shore of Lake Ontario, they are not regarded as a hazard for the purposes of this plan.
Wave Action	NO	• Review of NY State Hazard Mitigation Plan • Review of FEMAôs Multi-Hazard Identification and Risk Assessment	• While waves are discussed in the state plan under flood hazard, damage-causing waves are considered to be a coastal phenomenon. Since Lewis County is located more than 200 miles from the nearest ocean coastline and between 20 and 50 miles from the shore of Lake Ontario, they are not regarded as a hazard for the purposes of this plan.
GEOLOGIC HAZARDS			
Earthquake	**YES**	• Review of NY State Hazard Mitigation Plan • Review of USGS Earthquake Hazards Program mapping and web site • Review of FEMAôs Multi-Hazard Identification and Risk Assessment • Lewis County HAZNY • Lewis County Planning Group	• Earthquakes are discussed in the State Plan, since numerous earthquakes have occurred in and around the State of New York in the past. • The state plan ranks Lewis County 43rd out of 62 counties for potential annualized earthquake losses but 8th out of 62 for potential annualized earthquake loss per capita. • According to USGS seismic hazard maps, the peak ground acceleration (PGA) with a 10% probability of exceedance in 50 years Lewis County is 3%-4% of gravity in the southwestern corner of the County, rising to 4%-6% of gravity in the northeastern part of the County. Current FEMA guidance requires that earthquakes be evaluated in detail for mitigation purposes in areas where a PGA of 3%g or more has a 10% probability of exceedance in 50 years. • USGS mapping records four earthquakes

Table 2.2
Documentation of the Hazard Evaluation Process

Natural Hazards Considered	Was this hazard identified as a significant hazard to be addressed in the plan at this time? (Yes or No)	How was this determination made?	Why was this determination made?
			epicentered in Lewis County between 1638 and 1998; three of magnitude 3.0-3.9, and one of magnitude 4.0-4.9. The New York State Plan records one significant earthquake event in Lewis County in the same period, of magnitude 5.0-5.9. • USGS soil survey maps indicate that much of the developed areas of Lewis County are underlain by soil types which have the potential to amplify the effects of earthquakes. • Earthquakes were not specifically considered in the Lewis County HAZNY study.
Expansive Soils	NO	• Review of NY State Hazard Mitigation Plan • Review of FEMAôs Multi-Hazard Identification and Risk Assessment • US Department of Transport Federal Highway Administration (USDOT FHA) Geological Data • Review of USDA Natural Resources Conservation Service (NRCS) Soil Websites • Lewis County HAZNY • Lewis County Planning Group	• Expansive soils are not identified as a hazard in the State Plan. • According to FEMA and USGS sources, Lewis County is located in an area where less than 50% of the underlying soils have ñslight to moderateò clay swelling potential. No examples of risk or damage to property in Lewis County due to soil expansion have been found in the course of general research. • According to USDOT FHA Report No. FHWA-RD-76-82, Lewis County lies in an area mapped as non-expansive ï i.e. the occurrence of expansive materials is extremely limited. • New York State building codes are based on the International Building Code (2000, with 2001 supplement), in which Chapter 18 includes provisions for building on expansive soils (through design, removal or stabilization) so that new construction will be protected. • Expansive soils were not specifically considered in the Lewis County HAZNY study.
Landslide	**YES**	• Review of NY State Hazard Mitigation Plan • Review of USGS Landslide Incidence and Susceptibility Hazard Map • Review of New York State Geological Survey (NYSGS) inventory of historic landslides in New York • Review of FEMAôs Multi-Hazard Identification and Risk Assessment	• Landslides are discussed in the State Plan, which records seven significant landslide events in Lewis County between 1837 and 1989. Only 16 out of the 62 counties in the State have recorded more landslides in the same period. • Additionally, the Landslide Inventory Map of New York State obtained from NYSGS identifies an area along the Independence River valley, extending slightly into the Black River valley, as an ñArea of slumping and landslides where individual slides are too numerous to mapò.

Table 2.2
Documentation of the Hazard Evaluation Process

Natural Hazards Considered	Was this hazard identified as a significant hazard to be addressed in the plan at this time? (Yes or No)	How was this determination made?	Why was this determination made?
		• Lewis County HAZNY • Lewis County Planning Group	• All seven landslides recorded by the State Plan in Lewis County were ñnatural earth slumpò events. None were recorded as having caused any fatalities. • USGS landslide hazard maps indicate the Lewis County area is identified as being of ñLow landslide incidenceò (less than 1.5% of the area is at risk). • Landslides were not specifically considered in the Lewis County HAZNY study.
Land Subsidence	NO	• Review of NY State Hazard Mitigation Plan • Review of FEMAôs Multi-Hazard Identification and Risk Assessment • Review of USGS Fact Sheet 165-00 Land Subsidence in the U.S. • Lewis County HAZNY • Lewis County Planning Group	• Land subsidence is discussed as a discrete hazard in the State Plan, which includes mapping of geological formations prone to causing subsidence, such as carbonate karst and evaporite rocks (salt or gypsum). Of these formations, only carbonate karst is present in Lewis County, primarily located along the Black River Valley. • The State Plan lists no examples of historic land subsidence occurrences in Lewis County, and none have been identified via additional general research. • USGS-165-500 indicates that Lewis County is located in an area where subsidence caused by consolidation of aquifers or drainage of organic soils is not considered to be a risk. • While there is some history of underground mining in Lewis County (for example, talc, lead, and graphite have been mined in the County), no records of mining-related subsidence risks or historical occurrences have been found. • Land subsidence was not specifically considered in the Lewis County HAZNY study.
Tsunami	NO	• Review of NY State Hazard Mitigation Plan • Review of FEMAôs Multi-Hazard Identification and Risk Assessment	• Tsunamis are not discussed in the State Plan. Since Lewis County is located more than 200 miles from the ocean, and no records exists of catastrophic Atlantic basin tsunamis impacting the mid-Atlantic coast of the USA, FEMA mitigation planning guidance suggests that locations in the eastern U.S. north of Virginia have a relatively low tsunami risk and need not conduct a tsunami risk assessment at this time.
Volcano	NO	• Review of NY State Hazard Mitigation Plan • Review of USGS Volcano Hazards Program web site	• No volcanoes are located within approximately 2,000 miles of Lewis County.

Table 2.2
Documentation of the Hazard Evaluation Process

Natural Hazards Considered	Was this hazard identified as a significant hazard to be addressed in the plan at this time? (Yes or No)	How was this determination made?	Why was this determination made?
OTHER HAZARDS			
Wildfire	**YES**	• Review of NY State Hazard Mitigation Plan • Review of NOAA NCDC Storm Events Database • USGS National Land Cover GIS data • Review of NYSEMO and NYSDEC web sites • Review of FEMAôs Multi-Hazard Identification and Risk Assessment • Lewis County HAZNY • Lewis County Planning Group	• Wildfires are discussed in the State Plan as a hazard of concern, and NYSDEC notes that areas that are heavily forested or contain large tracts of brush and shrubs are particularly prone to fires. • According to USGS land cover GIS data, approximately two thirds of Lewis County is covered by wildfire-prone areas in the form of forests or shrublands (not including wooded wetlands). • Wildfire hazard risks are expected to increase as development continues in wooded areas, increasing the length of the interface between improved property and the most wildfire-prone land. Currently the length of this interface in Lewis County is slightly more than 45 miles, measured in GIS using County parcel data and USGS land cover data. • Fire in general was placed 4th (moderately high risk) out of the 15 hazards considered in the Lewis County HAZNY study. Flooding was the only natural hazard ranked higher than fire in the study.

Table 2.3
Summary Results of the Hazard Identification and Evaluation Process

ATMOSPHERIC

- ☐ Avalanche
- ☑ Extreme Temperatures
- ☑ Extreme Wind
- ☐ Hailstorm
- ☐ Hurricane and Tropical Storm
- ☐ Lightning
- ☐ Norôeaster
- ☑ Tornado
- ☑ Winter Storm

HYDROLOGIC

- ☐ Coastal Erosion
- ☑ Dam Failure
- ☑ Drought
- ☑ Flood
- ☑ Ice Jams
- ☐ Storm Surge
- ☐ Wave Action

GEOLOGIC

- ☑ Earthquake
- ☐ Expansive Soils
- ☑ Landslide
- ☐ Land Subsidence
- ☐ Tsunami
- ☐ Volcano

OTHER

- ☑ Wildfire

☑ = Hazard considered significant enough for further evaluation through the multi-jurisdictional hazard risk assessment.

SECTION 3a- RISK ASSESSMENT: HAZARD PROFILES

Overview

Detailed profiles of hazards identified in the previous section as worthy of further evaluation in the overall risk assessment are provided in this section. Each hazard profile includes a description of the hazard and its causes and impacts, the location and extent of areas subject to the hazard, known historical occurrences, and the probability of future occurrences. The profiles also include specific information noted by members of the planning committee and other stakeholders, including unique observations or relevant anecdotal information regarding individual historical hazard occurrences and individual jurisdictions.

Table 3a.1 lists profiled hazards and whether or not they have been identified as hazards worthy of further evaluation for each of the 26 municipal jurisdictions in the County. The identification for each municipality/hazard is based on the mapping of risk areas and significant historical events. For more details regarding the basis on which each municipal determination was made, see the individual hazard profiles following Figure 3a.1. Table 3a.1 is intended as a broad-brush summary and the lack of identification of any particular hazard for any particular municipality in Table 3a.1 should not preclude that municipality from proposing any mitigation actions to alleviate that particular hazard if they so wish.

Figure 3a.1 presents a base map of Lewis County for reference, including the most significant transport links and the location and boundaries of each participating jurisdiction.

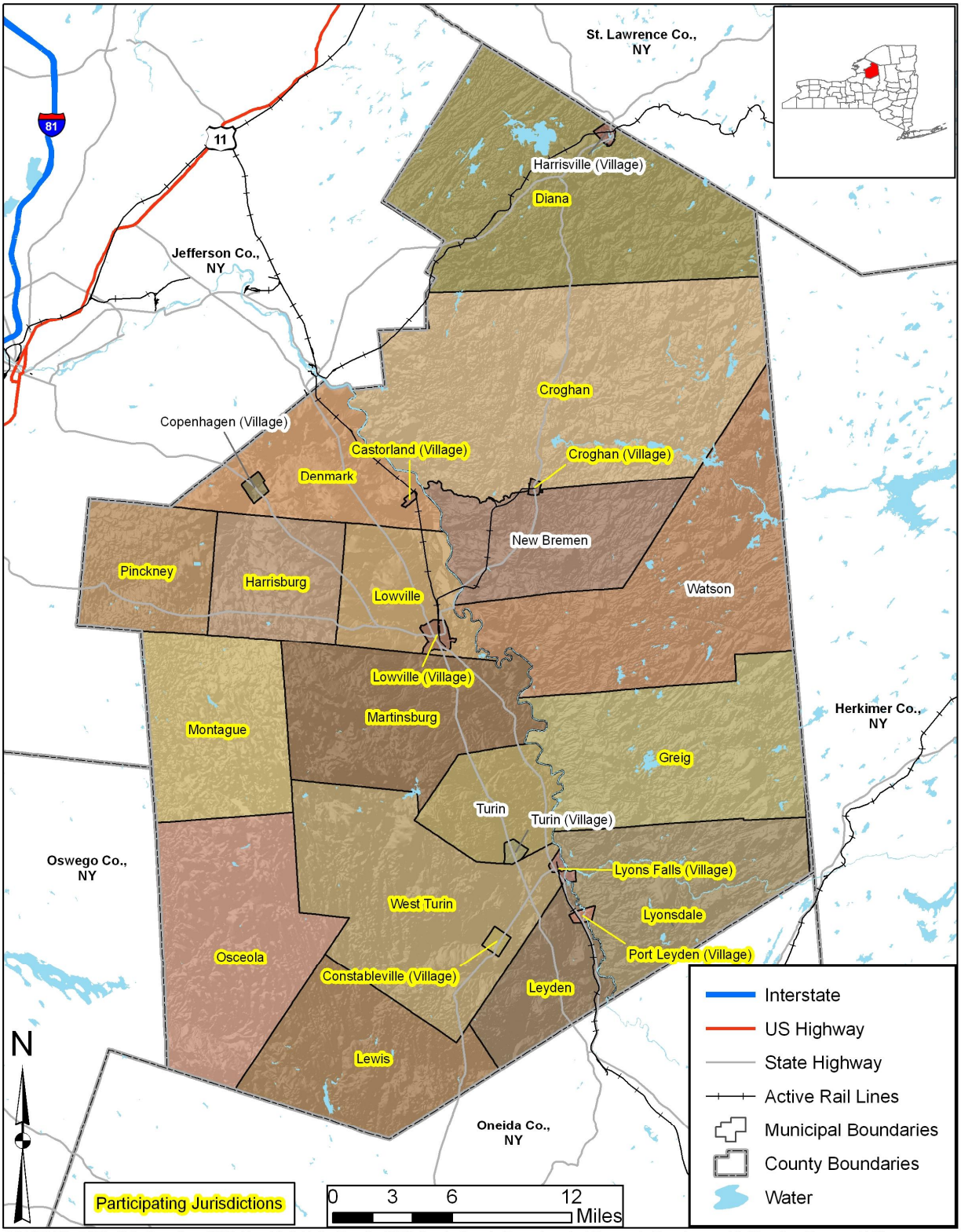
Table 3a.1
Summary of Profiled Hazards

Jurisdiction		Extreme Temperatures	Extreme Wind	Tornado	Winter Storm	Dam Failure[1]	Drought	Flood[2]	Ice Jam[3]	Earthquake	Landslide[4]	Wildfire[5]
Lewis	**County**	ŏ	ŏ	ŏ	ŏ	ŏ	ŏ	ŏ	ŏ	ŏ	ŏ	ŏ
Castorland	Village	ŏ	ŏ	ŏ	ŏ	ŏ	ŏ	ŏ		ŏ		ŏ
Constableville	Village	ŏ	ŏ	ŏ	ŏ		ŏ	ŏ		ŏ		ŏ
Copenhagen	*Village*	ŏ	ŏ	ŏ	ŏ	ŏ	ŏ		ŏ	ŏ		ŏ
Croghan	Town	ŏ	ŏ	ŏ	ŏ	ŏ	ŏ	ŏ		ŏ		ŏ
Croghan	Village	ŏ	ŏ	ŏ	ŏ	ŏ	ŏ	ŏ		ŏ		ŏ
Denmark	Town	ŏ	ŏ	ŏ	ŏ	ŏ	ŏ	ŏ	ŏ	ŏ		ŏ
Diana	Town	ŏ	ŏ	ŏ	ŏ		ŏ	ŏ		ŏ		ŏ
Greig	Town	ŏ	ŏ	ŏ	ŏ	ŏ	ŏ	ŏ		ŏ	ŏ	ŏ
Harrisburg	Town	ŏ	ŏ	ŏ	ŏ		ŏ	ŏ		ŏ		ŏ
Harrisville	*Village*	ŏ	ŏ	ŏ	ŏ		ŏ	ŏ		ŏ		ŏ
Lewis	Town	ŏ	ŏ	ŏ	ŏ	ŏ	ŏ	ŏ		ŏ		ŏ
Leyden	Town	ŏ	ŏ	ŏ	ŏ	ŏ	ŏ	ŏ		ŏ	ŏ	ŏ
Lowville	Town	ŏ	ŏ	ŏ	ŏ		ŏ	ŏ	ŏ	ŏ	ŏ	ŏ
Lowville	Village	ŏ	ŏ	ŏ	ŏ		ŏ	ŏ		ŏ		ŏ
Lyons Falls	Village	ŏ	ŏ	ŏ	ŏ		ŏ	ŏ		ŏ	ŏ	ŏ
Lyonsdale	Town	ŏ	ŏ	ŏ	ŏ	ŏ	ŏ	ŏ	ŏ	ŏ		ŏ
Martinsburg	Town	ŏ	ŏ	ŏ	ŏ	ŏ	ŏ	ŏ		ŏ		ŏ
Montague	Town	ŏ	ŏ	ŏ	ŏ		ŏ	ŏ		ŏ		ŏ
New Bremen	*Town*	ŏ	ŏ	ŏ	ŏ	ŏ	ŏ	ŏ		ŏ		ŏ
Osceola	Town	ŏ	ŏ	ŏ	ŏ		ŏ	ŏ		ŏ		ŏ
Pinckney	Town	ŏ	ŏ	ŏ	ŏ		ŏ	ŏ		ŏ		ŏ
Port Leyden	Village	ŏ	ŏ	ŏ	ŏ		ŏ	ŏ		ŏ		ŏ
Turin	*Town*	ŏ	ŏ	ŏ	ŏ	ŏ	ŏ	ŏ		ŏ		ŏ
Turin	*Village*	ŏ	ŏ	ŏ	ŏ		ŏ	ŏ		ŏ		ŏ
Watson	*Town*	ŏ	ŏ	ŏ	ŏ	ŏ	ŏ	ŏ	ŏ	ŏ	ŏ	ŏ
West Turin	Town	ŏ	ŏ	ŏ	ŏ		ŏ	ŏ	ŏ	ŏ		ŏ

1. Based on the presence of a high or moderate hazard dam (NYSDEC classification) either in the municipality or close upstream on a watercourse flowing through that municipality
2. Based on identification of improved property in mapped flood hazard zones as digitized from hard copies of Flood Insurance Rate Maps (other issues such as road flooding and localized drainage problems may also be present)
3. Based on historical records, Flood Insurance Studies, and local information
4. Based on identification of improved property in mapped moderate landslide susceptibility zones
5. Based on identification of improved property in mapped wildfire hazard zones

Jurisdictions in *italics* in Table 3a.1 and all subsequent tables are considered partially participating, all other jurisdictions participated fully in the planning process.

Figure 3a.1: Lewis County Base Map



SOURCES: ESRI, U.S. Counties, 2005, New York Major Roads, 2000; Lewis County Department of Economic Development & Planning, Town and Village Boundaries; U.S. Census Bureau, Census Railroads, New York State, 2001, Herkimer, Oswego, Oneida, Lewis, Jefferson, St. Lawrence Counties, Area Hydrography, 2007; USGS, 1-Arc Second National Elevation Dataset, 2009

Extreme Temperatures

Extreme temperatures principally affect the health and safety of the human population, although they can also impact livestock, agricultural crops, and may also cause damage to infrastructure and property. This section provides detailed profiles of both extreme high and extreme low temperatures.

Description – Extreme Temperatures

Extreme Cold

According to National Oceanic and Atmospheric Administrationôs (NOAA) National Weather Service (NWS), the term ñextreme coldò constitutes different conditions in different parts of the country, ranging from near freezing in the South to temperatures well below zero in the North.

In the South, temperatures near or just below freezing can cause pipes to burst in homes that are poorly insulated or without heat. In the North, where most buildings are insulated to a degree that can protect against most common winter temperatures for the area, long spells of below zero temperatures can result in increased numbers of people using space heaters and fireplaces to stay warm, thus increasing the risk of household fires and carbon monoxide poisoning. In addition, extreme cold can cause rivers to freeze, and ice jams to form, leading to flooding. Regardless of location, freezing temperatures can cause severe damage to crops and other vegetation; increased strain on community shelter facilities providing refuge from the cold to homeless populations and others in need; and an increased likelihood that automobiles/buses will fail to start. Local sources also report that fire departments are called to a noticeably higher number of chimney fires during periods of extreme cold.

Extreme cold can have severe negative impacts on human beings, including frostbite (an injury to the body that is caused by freezing) and hypothermia (the unintentional lowering of the bodyôs core temperature to below 95 degrees Fahrenheit, which typically causes uncontrollable shivering, memory loss, disorientation, incoherence, slurred speech, drowsiness, and apparent exhaustion). The NWS reports that extreme cold causes the death of roughly 26 people per year nationwide (based on a 10-year average). High winds during a period of extreme cold can exacerbate these affects, as the winds work to carry heat away from the body.

According to the New York State Climate Office, extreme cold events in New York State occur regularly, and are most common between October and March. They are most likely to occur in the northern and western portions of the state, and occur less often as one travels south toward New York City and Long Island. The record coldest temperature in New York State is -52° at Stillwater Reservoir (northern Herkimer County) on February 9, 1934 and also at Old Forge (also northern Herkimer County) on February 18, 1979. Some 30 communities have recorded temperatures of -40° or colder, most of them occurring in the northern one-half of the state and the remainder in the Western Plateau Division and in localities just south of the Mohawk Valley.

Extreme Heat

FEMA defines the term ñextreme heatò as the condition whereby temperatures hover ten degrees or more above the average high temperature for a region, and last for several weeks. Extreme heat can also contribute to increased demand on energy supplies resulting from increased air conditioning usage, and an associated increased potential for power shortages or outages; and increased demand on medical offices,

hospitals, etc. as individuals suffering from various heat related health effects seek medical attention or shelter in air conditioned facilities.

The National Oceanic and Atmospheric Administrationôs (NOAA) National Weather Service (NWS) has reported that heat waves occur during most summers in at least some part(s) of North America. East of the Rocky Mountains, high temperatures are often combined with high humidity. Highest temperatures of record and average relative humidity would be sufficient to cause heat-related health effects in all states. Health effects associated with extreme heat can begin with air temperatures as low as 80 degrees Fahrenheit and concurrent relative humidity of at least 40 percent.

Extreme heat can have severe negative impacts on human beings, including heat-related illnesses such as sunburn, fatigue, and heat cramps, heat exhaustion, and heat strokes. The NWS reports that heat waves cause the death of roughly 175 people per year nationwide. High humidity levels during a period of extreme heat can exacerbate these affects. Similarly, periods of extreme heat in urban areas can also result in magnified impacts on human health. This is primarily due to the combined affects of pollutant concentrations, high temperatures/humidity, and poor air circulation.

According to the New York State Climate Office, extreme heat events in New York State occur regularly, and are most common between May and mid-September. They are least likely to occur in the northern and western portions of the state, and occur more often as one travels south toward New York City and Long Island. The New York City area and most of the Hudson Valley record an average of from 18 to 25 days with such temperatures during the warm season, but in the Northern and Southern Plateaus the normal quota does not exceed 2 or 3 days. While temperatures of 100° are rare, many long-term weather stations, especially in the southern one-half of the State, have recorded maximums in the 100° to 105° range on one or more occasions. The highest temperature of record in New York State is 108° at Troy on July 22, 1926. Temperatures of 107° have been observed at Lewiston, Elmira, Poughkeepsie, and New York City.

Location and Extent – Extreme Temperatures

Lewis County is located in a region of the country that is susceptible to extreme heat and extreme cold. However, the frequency of these events may be low due to Lewis Countyôs proximity to Lake Ontario. The moderating effect of Lake Ontario results in milder winters and cooler summers, therefore reducing the likelihood of extreme temperatures. When extreme temperature conditions do occur, the effects will be felt over a widespread geographic area, and it is generally assumed that Lewis County and all of its municipalities are uniformly exposed to extreme heat and extreme cold. The effects of extreme temperatures will be primarily limited to the elderly, with occasionally minor, sporadic property damages (e.g., bursting pipes) and damages to crops and other vegetation. According to US Census data estimates for 2005-2007, the percentage of the population most susceptible to extreme temperatures (under 5yrs and over 65yrs) is 20.4%, which is slightly higher than the statewide average of 19.3%.

Historical Occurrence – Extreme Temperatures

The National Climatic Data Center (NCDC) at NOAA holds extreme temperature event data for Lewis County starting in February 1993. According to this database, Lewis County has been included in the area affected by 1 serious extreme temperature event. This was an extreme cold event occurring in February 1993 which resulted in $50,000 in property damage. No deaths or injuries were attributed to this event. The extreme cold event occurred during a time of year when extreme cold events are most common in the area. Additionally, the NCDC records two record heat events; unseasonably high temperatures occurred in in October 1993 and October 1995, although no damages, injuries, or deaths

were attributed to these events. New York State has received no Federal Disaster or Emergency Declarations due solely to extreme temperatures. It should be noted that while the NCDC records only one specific extreme cold event in the County, the NCDC records Lewis County as affected by a much larger number of winter storms involving snowfall and ice accumulation. These events are discussed in detail in subsequent sections.

The single extreme cold event specifically affecting Lewis County as reported by the NCDC:

> **February 1-2, 1993**
> An Arctic high pressure center descended from the Upper Great Lakes Region and moved into northern New York early on February 2nd. A strong pressure gradient which was set up across the area on February 1st produced northerly winds of 15 to 30 mph. The strong winds coupled with temperatures between 5 below zero and 10 above zero resulted in wind chill readings of 30 to 40 below zero in many areas. Temperatures fell so fast in the Mohawk Valley that transmission lines snapped leaving 10,000 customers without power.

Probability of Occurrence – Extreme Temperatures

Extreme heat events and extreme cold events not involving other manifestations of severe winter weather will remain an infrequent occurrence in Lewis County, and the probability of future occurrences in Lewis County is low to certain, depending on the type of occurrence.

Based on historical records over the last 15 years, in New York State, extreme temperature events of all types can be expected to occur approximately 4.7 times per year. Of these, 3.2 are likely to be extreme cold events, and 1.5 are likely to be extreme heat events, making extreme cold events more likely to occur in any given year with double the frequency of extreme heat. Based on NCDC records for Lewis County, this trend is different in the planning area, where, based on NCDC records of the last 15-16 years, only three extreme temperature events have occurred. However, it is also possible that extreme temperature events in this area have been under-reported, since an examination of NCDC records for neighboring Herkimer County shows 17 extreme cold/wind chill events and nine record/excessive heat events over the same period. It is also possible that extreme cold events in this area are more likely to have been recorded in the NCDC winter storm/ice storm categories, of which a much greater number have been recorded in Lewis County (see later in this section). Overall, the available information suggests that while the probability of extreme heat events affecting Lewis County is low, extreme cold events are essentially certain to occur in the future, most likely during events that also include heavy snowfall and freezing rain.

Extreme Wind

Description – Extreme Wind

Wind, as defined by the American Meteorological Society, is air that is in constant motion relative to the surface of the earth. Since vertical components of atmospheric motion are relatively small, especially near the surface of the earth, meteorologists use the term ñwindò to denote almost exclusively the horizontal component. Extreme winds are most commonly the result of tornadoes, hurricanes, tropical cyclones, extratropical cyclones (northeasters), destructive wind, and thunderstorms, but can also occur in their absence as mere ñwindstormsò.

Extreme wind events might occur over large, widespread areas or in a very limited, localized area. They can occur suddenly without warning. They can occur at any time of the day or night, at any location within Lewis County. Extreme winds pose a significant threat to lives, property, and vital utilities due to flying debris, such as rocks, lumber, fuel drums, sheet metal and loose gear of any type that can be picked up by the wind and hurled with great force. Extreme winds also bring down trees and power lines, which often results in power outages across the affected area.

(1) Tornadoes: Tornadoes are the most commonly known type of windstorm causing the most damage to property and life and all is due to severe winds. As researched by FEMA, there are, on average, 10 severe windstorms, classified as tornadoes, in the United States defined as F4 or F5 on the Fujita scale. (The Fujita scale reflects how much wind damage results from a tornado expressed in wind speeds. For example, wind speeds can vary between 50 and 250 mph in a typical F5 tornado.)

(2) Hurricanes: A hurricane is a tropical storm with winds that have reached a constant speed of 74 mph or more. Hurricane winds blow in a large spiral around a relative calm center known as the "eye." The "eye" is generally 20 to 30 miles wide.

(3) Coastal Storms: Coastal storms include both tropical cyclones and extratropical cyclones. The National Weather Service defines these terms as follows:

- Cyclone: An area of low pressure around which winds blow counterclockwise in the Northern Hemisphere. Also, the term used for a hurricane in the Indian Ocean and in the Western Pacific Ocean.

- Tropical Cyclone: A cyclone that forms over tropical or sub-tropical waters around centers of low barometric pressure. Tropical cyclones derive their energy from the ocean. Tropical cyclones can be further broken down according to maximum sustained winds, as follows:

Tropical Depression:	Winds < 39mph
Tropical Storm:	39 mph ÒWinds < 74 mph
Hurricane: *	Winds Ó74 mph

** Note that "hurricanes" are tropical cyclones that develop over the Atlantic Ocean, northeast Pacific Ocean, or south Pacific Ocean. Similar storms that develop over the western North Pacific Basin are referred to as "typhoons" (or, if maximum sustained winds are at least 150 mph, "super typhoons").*

- Extratropical Cyclone: A non-tropical cyclone that forms around a center of low barometric pressure and derives its energy from the atmosphere. Extratropical cyclones are more commonly referred to as ñwinter storms.ò Extratropical storms can be experienced on both the East and West Coasts of the United States. On the East Coast, extratropical cyclones are often called ñNorôeastersò due to the direction of the storm winds.

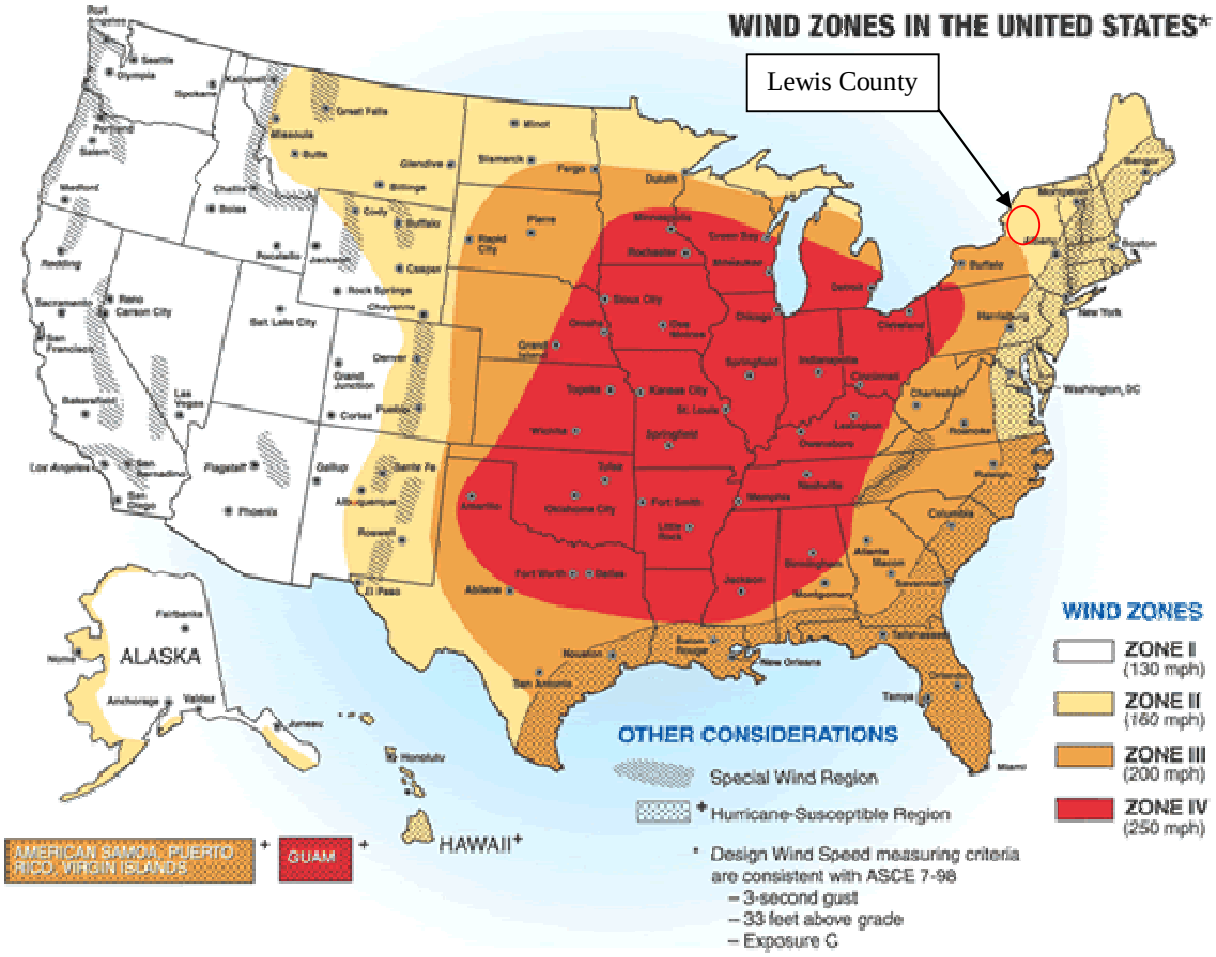
(4) Destructive Wind: Destructive wind is a windstorm that poses a significant threat to life and property and destroying everything in its path. Destructive wind can also cause damage by flying debris, such as rocks, lumber, fuel drums, sheet metal and loose gear of any type which can be picked up by the wind and hurled with great force.

(5) Thunderstorms: A thunderstorm is a combination of moisture, rapidly rising warm air and forceful winds capable of lifting air thatôs either warm or cold. They also contain lightning and thunder.

Location – Extreme Winds

Extreme wind events are experienced in every region of the United States. A useful tool for determining the location of the extreme wind hazard area in a jurisdiction is depicted in Figure 3a.2 - Wind Zones in the United States. This map of design wind speeds was developed by the American Society of Civil Engineers. It divides the United States into four wind zones, geographically representing frequency and magnitude of potential extreme wind events. The figure shows that Lewis County and its jurisdictions are within a single wind zone; Zone II, with a design wind speed for shelters of 160 miles per hour.

Figure 3a.2 - Wind Zones in the United States



Extent – Extreme Winds

The severity of a severe wind event depends upon the maximum sustained winds experienced in any given area. Extreme winds pose a significant threat to lives, property and infrastructure due to direct wind forces but also flying debris, such as rocks, lumber, fuel drums, sheet metal and loose gear of any type that can be picked up by the wind and hurled with great force. Extreme winds also down trees and power lines that often result in power outages across an affected area. Table 3a.2 illustrates the severity and typical effects of various wind speeds, as obtained from the NOAA NCDC web site.

Table 3a.2
Severity and Typical Effects of Various Speed Winds

Maximum Wind Speeds	Equivalent Saffir-Simpson Scale* (Hurricanes)	Equivalent Fujita Scale (Tornadoes)	Severity	Typical Effects
40-72 mph *(35-62 kt)*	Tropical Storm = 39-73 mph	F0	Minimal	Some damage to chimneys; breaks twigs and branches off tress; pushes over shallow-rooted trees; damages signboards; some windows broken; hurricane wind speed begins at 73 mph.
73-112 mph *(63-97 kt)*	Cat 1 = 74-95mph Cat 2 = 96-110 mph Cat 3 = 111-130 mph	F1	Moderate	Peels surfaces off roofs; mobile homes pushed off foundations or overturned; outbuildings demolished; moving autos pushed off the roads; trees snapped or broken.
113-157 mph *(98-136 kt)*	Cat 3 = 111-130 mph Cat 4 = 131-155 mph Cat 5 > 155 mph	F2	Considerable	Roofs torn off frame houses; mobile homes demolished; frame houses with weak foundations lifted and moved; boxcars pushed over; large trees snapped or uprooted; light-object missiles generated.
158-206 mph *(137-179 kt)*	Cat 5 > 155 mph	F3	Severe	Roofs and some walls torn off well-constructed houses; trains overturned; most trees in forests uprooted; heavy cars lifted off the ground and thrown; weak pavement blown off roads.
207-260 mph *(180-226 kt)*	? Cat 5 > 155 mph	F4	Devastating	Well constructed homes leveled; structures with weak foundations blown off some distance; cars thrown and disintegrated; large missiles generated; trees in forest uprooted and carried some distance away. The maximum wind speeds of hurricanes are not likely to reach this level.
261-318 mph *(227-276 kt)*	N/A	F5	Incredible	Strong frame houses lifted off foundations and carried considerable distance to disintegrate; automobile-sized missiles fly through the air in excess of 300 ft (100 m); trees debarked; incredible phenomena will occur. The maximum wind speeds of hurricanes are not expected to reach this level.
Greater than 319 mph *(277 kt)*	N/A	F6	N/A	The maximum wind speeds of tornadoes are not expected to reach this level. The maximum wind speeds of hurricanes are not expected to reach this level.

** The Saffir-Simpson Scale is a five-category wind speed / storm surge classification scale used to classify Atlantic hurricane intensities. The Saffir-Simpson values range from Category 1 to Category 5. The strongest SUSTAINED hurricane wind speeds correspond to a strong F3 (Severe Tornado) or possibly a weak F4 (Devastating Tornado) value. Whereas the highest wind gusts in Category 5 hurricanes correspond to moderate F4 tornado values, F5 tornado wind speeds are not reached in hurricanes.*

Previous Occurrences – Extreme Winds

Lewis County has experienced numerous damaging extreme wind events in the past including severe thunderstorms and tornadoes.

According to NOAAôs NCDC, more than 100 recorded high wind events have affected Lewis County between June 1966 and December 2008 (data includes wind events greater than 50 knots (57.5mph), with the exception of tornado events which are addressed separately within this section). It should be noted that detailed recording for this event category appears to have started in the mid 1980s - only four of these events are recorded before 1983. Although these incidents resulted in a reported total of five deaths and 14 injuries across the region which they affected, only one death was specifically recorded in Lewis County. Some notable high wind events to have affected Lewis County include the following:

July 15, 1995
Microburst: a fast-moving storm accompanied by winds in excess of 80mph knocked out power across Jefferson and Lewis Counties. Three main transmission lines were downed and service was disrupted for 75-80,000 customers for two to three days. Local press reported that all of Jefferson and Lewis Counties were without power at some point. In some Lewis County communities the outage lasted 24 hours. Debris removal costs were estimated at $750,000 and removal activities took several weeks. A total of 527 homes were reported damaged by this event, including 61 which were destroyed and 123 which suffered major damage.

February 27, 1997
Deep low pressure moved from Indiana to Ontario bringing high winds to the area. The strong winds downed trees and telephone and power lines. Power outages were reported throughout the area. Several cities and towns in New York State declared States of Emergency because of the prolonged lack of power. Windows were blown out of buildings. The strong winds caused structure damage in some locations tearing off roofs and sidings and collapsing walls.

July 31, 1999
The strong thunderstorms downed trees and power lines and left hundreds of thousands without power across the region. Several roads were blocked by fallen debris and falling trees caused damage to houses and automobiles.

November 2, 1999
Thunderstorms downed trees and power lines. Power outages were scattered throughout the area and barns were reported collapsed in Harrisburg.

February 10, 2001
Strong winds downed trees and utility lines throughout the fourteen county area. Several hundred thousand customers were without power. Roads were blocked by downed trees. There were numerous reports of property damage from the winds, mostly from trees falling on buildings and cars. In Martinsburg, Lewis County, the high winds toppled a barn, killing nearly fifty head of cattle inside.

July 1, 2001
Thunderstorms ahead of a cold front crossed the eastern Lake Ontario counties during the morning hours. In Lewis County, power outages were reported from Lowville to Brantingham Lake.

February 1, 2002
An intensifying storm moved across the Great Lakes and lifted northeast to the St. Lawrence Valley. Very strong winds behind the low blasted the region with wind gusts exceeding 55 mph. Trees and power lines were downed by the strong winds. Hundreds of thousands of people were without power...some for several days. Fallen trees and limbs littered the area and closed roads. Numerous reports of damage to homes and automobiles were received from throughout the area. Driving bans and States of Emergency were declared in several counties. Numerous school districts were forced to close and several remained closed through the beginning of the following week.

August 5, 2003
Thunderstorms during the late morning and early afternoon hours produced downburst winds with speeds up to 60 mph. The winds downed trees and power lines in Turin, where heavy rains of up to three inches resulted in roads closed due to flooding.

October 15, 2003
Low pressure over Ohio deepened as it moved across eastern Lake Erie and then across Lake Ontario. High winds buffeted the area downing trees and power lines and poles. Sustained winds of 30 to 40 mph with gusts to 70 mph were recorded. Power outages were reported throughout the area. It was estimated that as many as 50,000 were without power at some point. In numerous locations, the falling trees damaged buildings and automobiles.

May 24, 2004
Widely scattered thunderstorms developed and moved across the north country. In Watson, trees and power lines were downed by thunderstorm winds.

February 17, 2006
Low pressure deepened as it tracked northeast into southern Ontario. The strong winds associated with the low downed trees and power lines throughout western New York and the north country. Damage to buildings and automobiles from falling trees was extensive. Over 150,000 were left without power during the peak of the storm. Peak gusts recorded during the storm included 81 mph at Lowville.

November 16, 2006
Thunderstorms moved across the north country during the late afternoon hours. Winds gusting to 60 mph downed trees and power lines. Damage was reported specifically in the Town of Lowville.

June 8, 2007
As high pressure remained anchored off the mid-Atlantic Coast, a warm, humid southerly flow prevailed across the region. An approaching cold front triggered afternoon and evening thunderstorms. The thunderstorm winds downed trees and power lines in numerous towns throughout the area. Utility companies reported numerous power outages throughout the area with upwards of 20,000 customers without power.

January 30, 2008
A powerful cold front crossed western New York and was followed by very strong west to southwest winds. Sustained winds increased to 30 to 45 mph with gusts measured to 80 mph at the peak of the storm. Trees and power lines were downed by the strong winds. Utility companies reported close to 100,000 customers without power in locations scattered throughout region. Several homes and automobiles were damaged by falling trees and limbs.

June 10, 2008
A pre-frontal trough well ahead of a cold front moved into a sultry airmass with ample instability and wind shear. A weak supercell formed near Erie, Pennsylvania and grew as it encountered an outflow from earlier convection. The storm continued to intensify as it moved across the western southern tier of New York and reach severe limits as it cross the eastern Finger Lakes and eastern Lake Ontario Regions of New York. The thunderstorms produced hail of up to three-quarter inch in diameter and wind gusts were estimated to near 70 mph. The storms cut power to nearly 75,000 customers for several hours through the evening. Falling trees damaged homes and

automobiles and were responsible for one death during the storm: In the Town of Croghan, a 47-year-old logger was crushed by a falling tree. Damage was also reported in Lowville, Beaver Falls, and Kirschnerville, in the Town of New Bremen.

September 15, 2008
The low center that was the remnant of Hurricane Ike reached the lower Great Lakes region during the late evening of the 14th and brought high winds to the area as it lifted from Indiana across southern Ontario. Wind gusts were measured to 66 mph. The high winds downed trees and power lines throughout the area. The wet soil conditions contributed to the number of downed trees. Debris blocked many streets and highways. There were numerous reports of homes, building and automobiles being damaged by fallen trees. A bumper crop of late season corn was damaged. It was estimated that nearly 70% of the corn crop in Jefferson and Lewis Counties was flattened.

December 28, 2008
A complex area of low pressure developed over the midsection of the nation and strengthened as it moved into the western Great Lakes region then into Quebec. Winds accompanying the system increased rapidly across the area ranging from 30 to 40 mph sustained readings, with the strongest gusts downwind of Lakes Erie and Ontario. Close to 100,000 customers in the region lost power during the storm and nearly 90,000 were without phone service

In addition to the major events listed above, the NCDC records an additional 50 high wind events affecting Lewis County for which minor structural damages and scattered power outages in unspecified areas were recorded. For the remaining incidents recorded by the NCDC, no damage details were recorded.

Probability of Occurrence – Extreme Winds

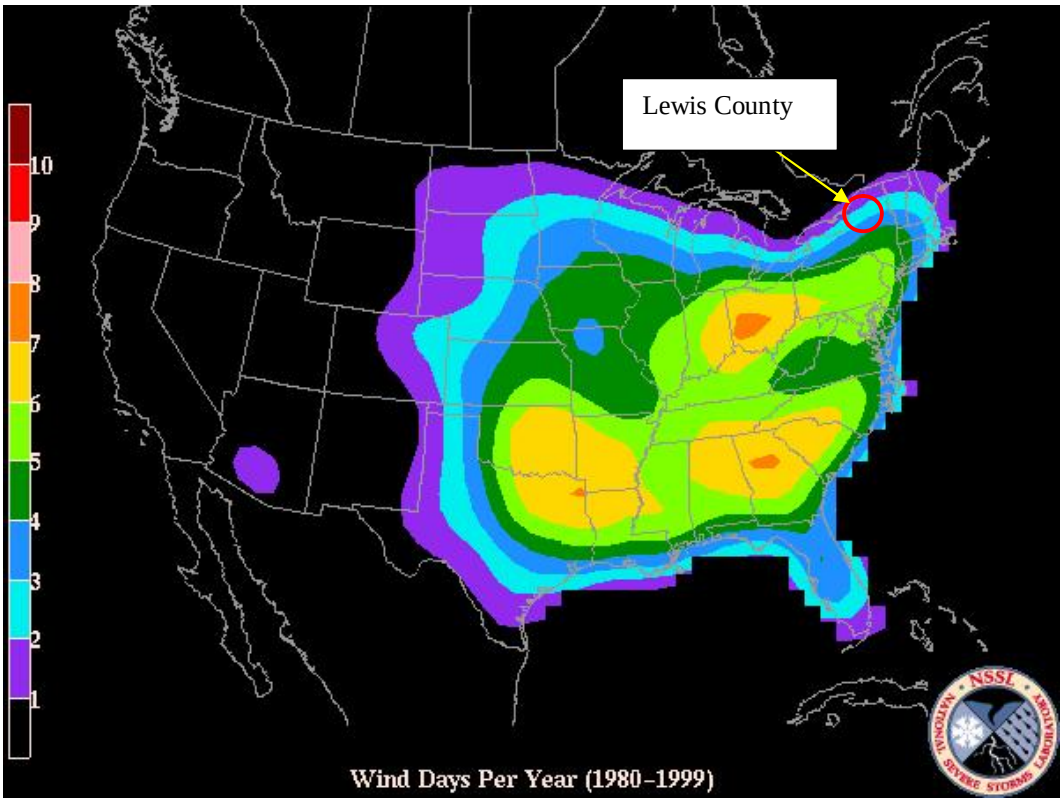
Extreme wind events will remain a very frequent occurrence in Lewis County, and the probability of future occurrences in Lewis County is certain. The entire planning area is susceptible to a limited range of recurring events that cause extreme wind conditions including severe thunderstorms (most frequent), and tornadoes. Other extreme wind events, such as hurricanes, tropical storms and norôeasters have never been recorded by the NCDC as significantly impacting Lewis County and are therefore not addressed in this plan at this time. Table 3a.3 illustrates a summary of wind-related events in both New York and Lewis County based on historic occurrences reported in NOAAôs NCDC Storm Events Database during the period from 1966 to 2008, and provides an associated average annual number of storms. It shows an average annual number of events which featured wind in excess of 50 knots (57.5mph), in Lewis County of 2.5 based on recorded occurrences. Table 3a.3 does not include tornadoes, which are addressed later in this section.

Table 3a.3
Average Annual Number of High Wind Events (Statewide vs. Lewis County)
(Source: NOAA's NCDC Storm Events Database for the period January 1, 1985 – December 31, 2008)

Event Type	Total Number of Events in New York State	Total Number of Events in Lewis County	Average Annual Number of Events in New York State	Average Annual Number of Events in Lewis County
Thunderstorm and High Wind Events	3,474	106	75.5	2.5

Data and mapping from the National Severe Storms Laboratory indicates that the Lewis County area can expect two to three high wind days per year (see Figure 3a. 3), which is consistent with the average number of events presented in Table 3a.3.

Figure 3a.3: Significant Wind Days per Year



Extreme winds can occur in Lewis County during tornadoes, destructive wind, and thunderstorms, but can also occur in their absence as mere ñwindstorms.ò Extreme winds have a history of occurrence throughout Lewis County, and are highly likely to occur in the future with an approximate frequency of two to three significant events per year.

Tornado

Description – Tornado Events

The American Meteorological Society ñGlossary of Meteorologyò defines a tornado as violently rotating column of air that has contact with the ground and extends downward from a cumulonimbus cloud. Tornado wind speeds can range from as low as 40 mph to as high as 318 mph. Tornadoes often accompany thunderstorms and hurricanes. Tornadoes can occur at any time of the year but are more prevalent during the spring and summer months. The hazard associated with a tornado event is high winds. The non-tornado high wind hazard is addressed specifically elsewhere in the plan. Tornado events are discussed in the remainder of this section.

Location – Tornado Events

Tornadoes can occur anywhere in the US. They have struck in all 50 states, with the highest concentration on the central plains and in the southeastern states, such as Oklahoma, Texas, and Florida. Over 350 tornados have struck New York State since 1952. No one jurisdiction within Lewis County is any more likely to have a tornado touch down within its borders than any other location. The hazard associated with tornado events (high winds) have distinct hazard area locations, discussed in other sections of this report.

Extent – Tornado Events

The magnitude or severity of a tornado is dependent upon wind speed and is categorized by the Fujita Scale, presented in Table 3a.4. Tornadoes are typically considered to be ñsignificantò for F2 or F3 on the Fujita Scale and ñviolentò for F4 and F5.

Table 3a.4
The Fujita Scale: Tornado Magnitude
(Source: NOAA)

Scale	Wind Estimate (mph)	Damage Type	Damage Description
F0	< 73	Light	Some damage to chimneys; branches broken off trees; shallow-rooted trees pushed over; sign boards damaged.
F1	73 - 112	Moderate	Peels surface off roofs; mobile homes pushed off foundations or overturned; moving autos blown off roads.
F2	113 - 157	Considerable	Roofs torn off frame houses; mobile homes demolished; boxcars overturned; large trees snapped or uprooted; light-object missiles generated; cars lifted off ground.
F3	158 - 206	Severe	Roofs and some walls torn off well-constructed houses; trains overturned; most trees in forest uprooted; heavy cars lifted off the ground and thrown.
F4	207 - 260	Devastating	Well-constructed houses leveled; structures with weak foundations blown away some distance; cars thrown and large missiles generated.
F5	261 - 318	Incredible	Strong frame houses leveled off foundations and swept away; automobile-sized missiles fly through the air in excess of 100 meters (109 yards); trees debarked; incredible phenomena will occur.

Previous Occurrences – Tornado Events

NOAAôs NCDC records tornado event data for Lewis County from July 1969 to December 2008, and records four tornados in the county in this period. The damage caused by these events resulted in $95,000 in property damage but no recorded deaths or injuries. The details recorded for these events are as follows:

July 12, 1969
A tornado of magnitude F1 was recorded touching down in the Town of West Turin between the Villages of Turin and Lyons Falls. This tornado was recorded as 150 yards wide and traveling for one mile, causing $25,000 in property damage.

June 4, 1987
A tornado of magnitude F0 was recorded as touching down just to the south of the Town of Lowville. This tornado was recorded as 50 yards wide and caused $25,000 in property damage.

October 2, 2004
An isolated thunderstorm moving across the north country spawned a weak tornado to the east of the Village of Port Leyden. The tornado touched down near Denley Road downing several trees and branches. Large concrete blocks were moved. A large cattle feeder was lifted off the ground and moved fifty feet. No injuries were reported, but $15,000 in damage was attributed to this event.

August 1, 2005
A cold front slid south across the region producing severe thunderstorms. The thunderstorm winds downed trees and power lines. One of the storms produced a weak tornado in the Town of Montague. This tornado was recorded as 50 yards wide and traveling for two miles, causing $30,000 in property damage.

In addition to tornado events recorded by the NCDC, a history of Lewis County published in 1860 mentions significant damaging tornados near Martinsburg in June 1810, in Osceola in 1823, at Harrisburg in September 1845, and south of the Village of Turin in July 1850.

Probability of Occurrence – Tornado Events

Since only four tornado events have been definitively recorded by NOAA in Lewis County in the last 50 years, an assessment of the probability of future tornado occurrences based solely on the available historical data is not appropriate. The record suggests that a tornado occurrence in the area is of low probability. This is supported by the New York State plan, which includes a figure sourced from the U.S. Geological Survey mapping tornado risk across the continental United States. This figure (reproduced below as Figure 3a.4) suggests that Lewis County lies outside of the areas of ñHigh Riskò within the continental USA.

National Severe Storms Laboratory tornado probability data indicates that while Lewis County is in an area that experiences 0 to 0.4 tornado days per year (as shown in Figure 3a.5), life-threatening and damaging tornado events remain a possibility. Based on the available data, it is estimated that while tornados of magnitude F0 or F1 may occur within Lewis County within the foreseeable future, they have a probability of occurrence in the order of one every five to 10 years.

Figure 3a.4: Tornado Risk Areas in the Continental USA

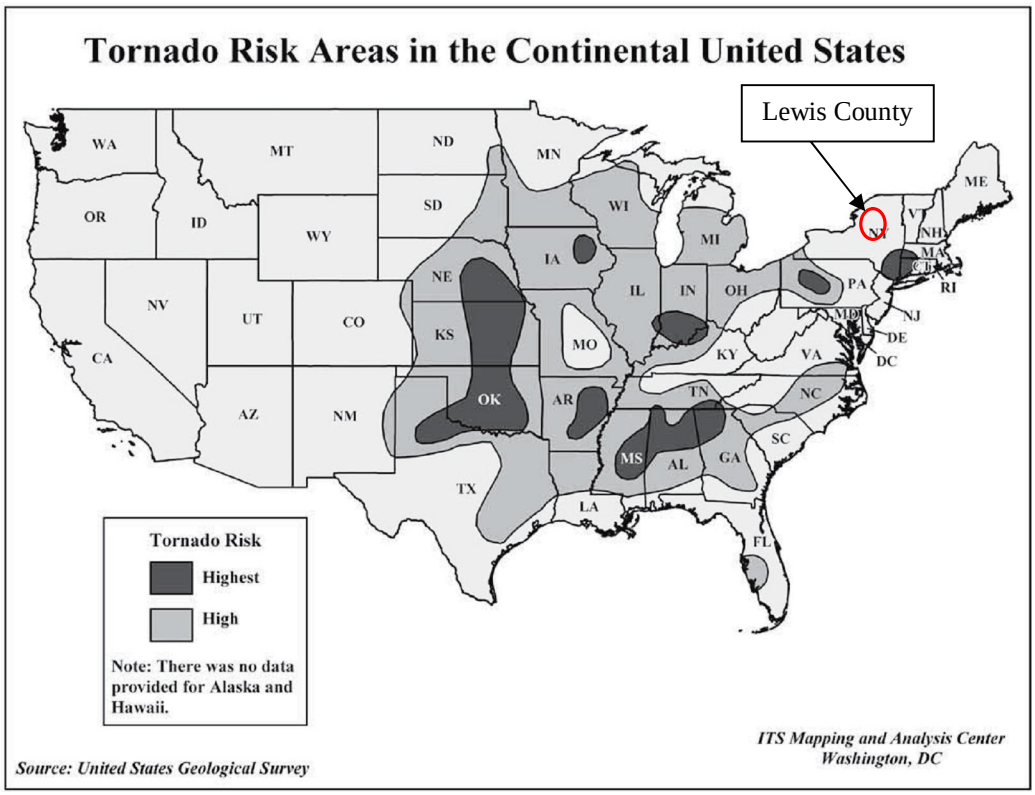
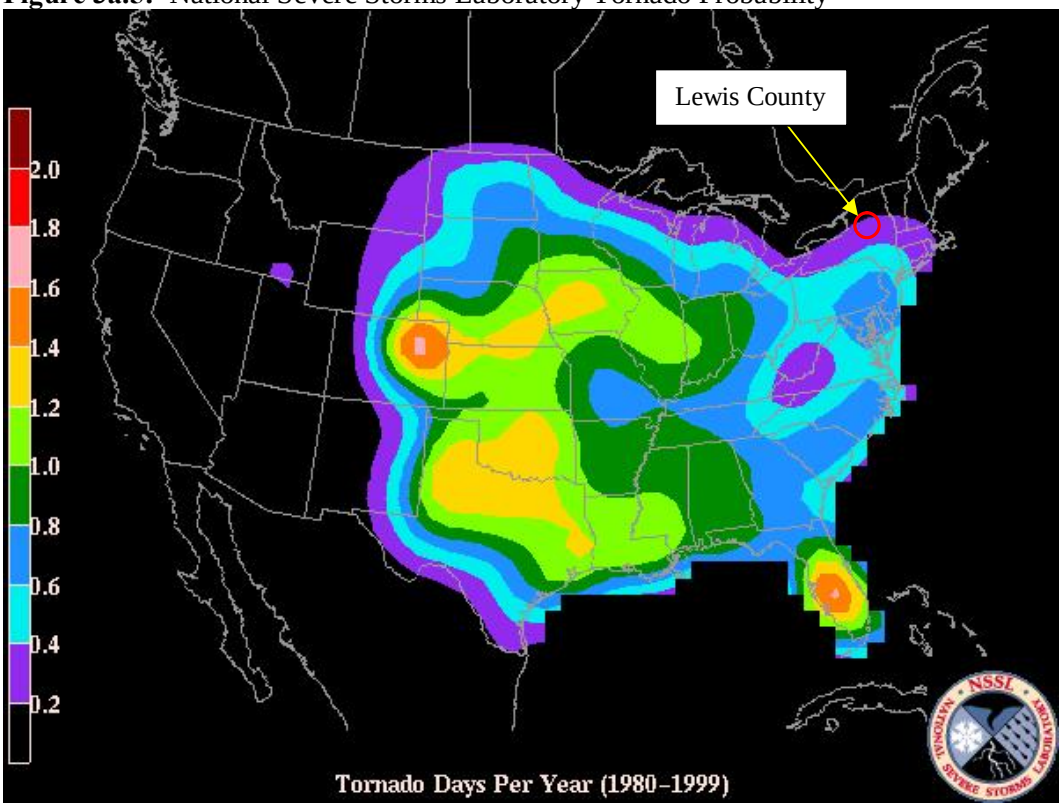


Figure 3a.5: National Severe Storms Laboratory Tornado Probability



Winter Storm / Ice Storm

Hazards Associated with Winter Storm / Ice Storm

Severe winter storms are particular types of events. They are characterized by the hazards of high winds, extreme cold, heavy precipitation (in the form of snow and/or ice), and sometimes wave action, coastal erosion and flooding. Winter storm and ice storm events are discussed in general terms in this section of the document; while specific hazards such as flooding and erosion are discussed elsewhere in the plan.

Description – Winter Storms / Ice Storms

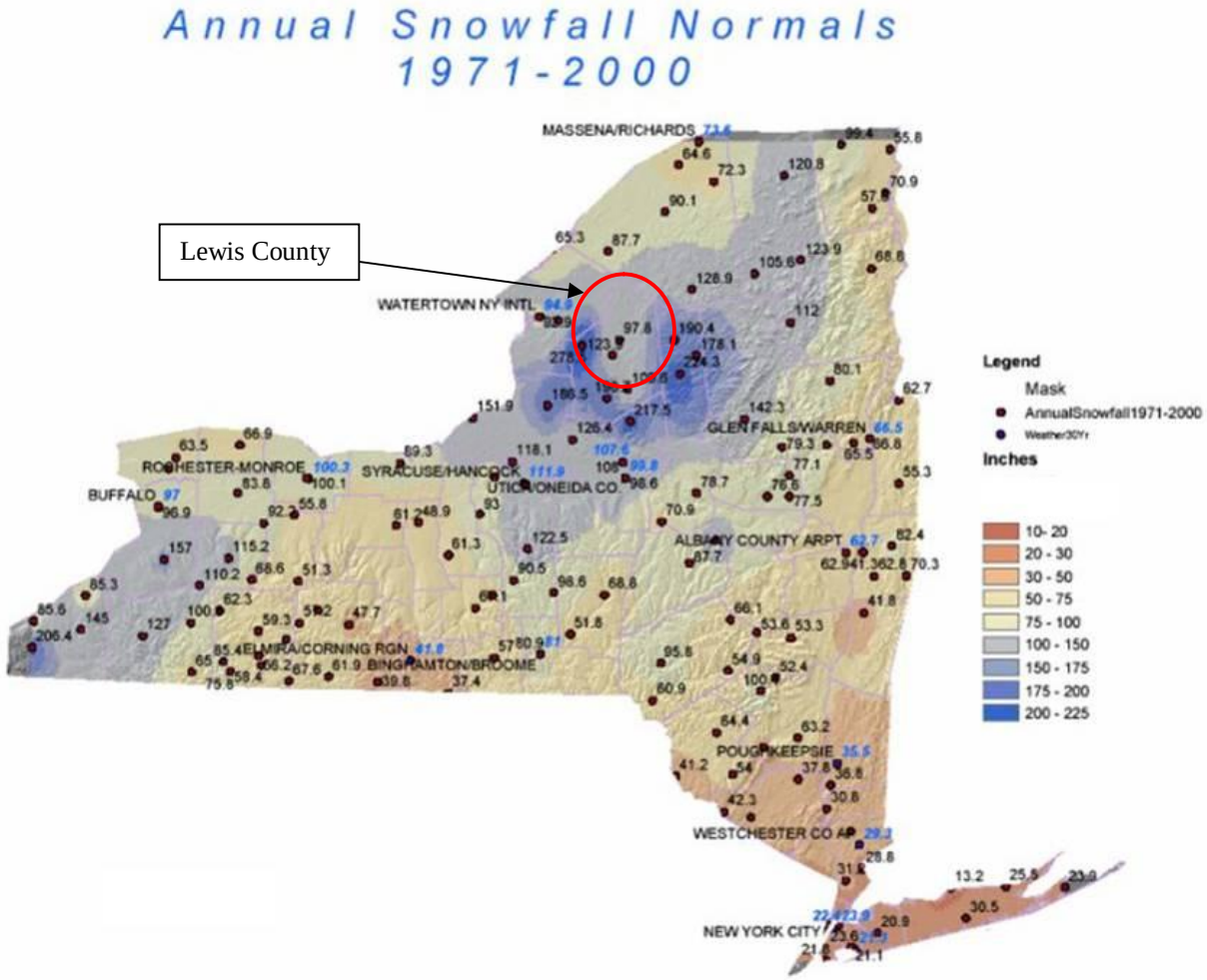
Winter storms consist of cold temperatures and heavy snow or ice. Because winter storms are regular, annual occurrences in Lewis County, they are considered hazards only when they result in damage to specific structures and/or overwhelm local capabilities to handle disruptions to traffic, communications, and electric power.

Winter storms and ice storms typically occur in New York from late October until mid-April. Peak months for these events for Lewis County and its jurisdictions are December through March.

Lake-effect snow is one type of winter storm that is common in Lewis County. Lake-effect snow is produced during the winter when cold winds move across long expanses of warmer lake water, picking up water vapor which freezes and is deposited on the windward shores. In Lewis County this phenomenon is most common in the western parts of the county due to the proximity to Lake Ontario (less than 20 miles from the western extremity of the County). Lake-effect snows on the Tug Hill Plateau in the west of Lewis County frequently set the daily records for snowfall in the Unites States.

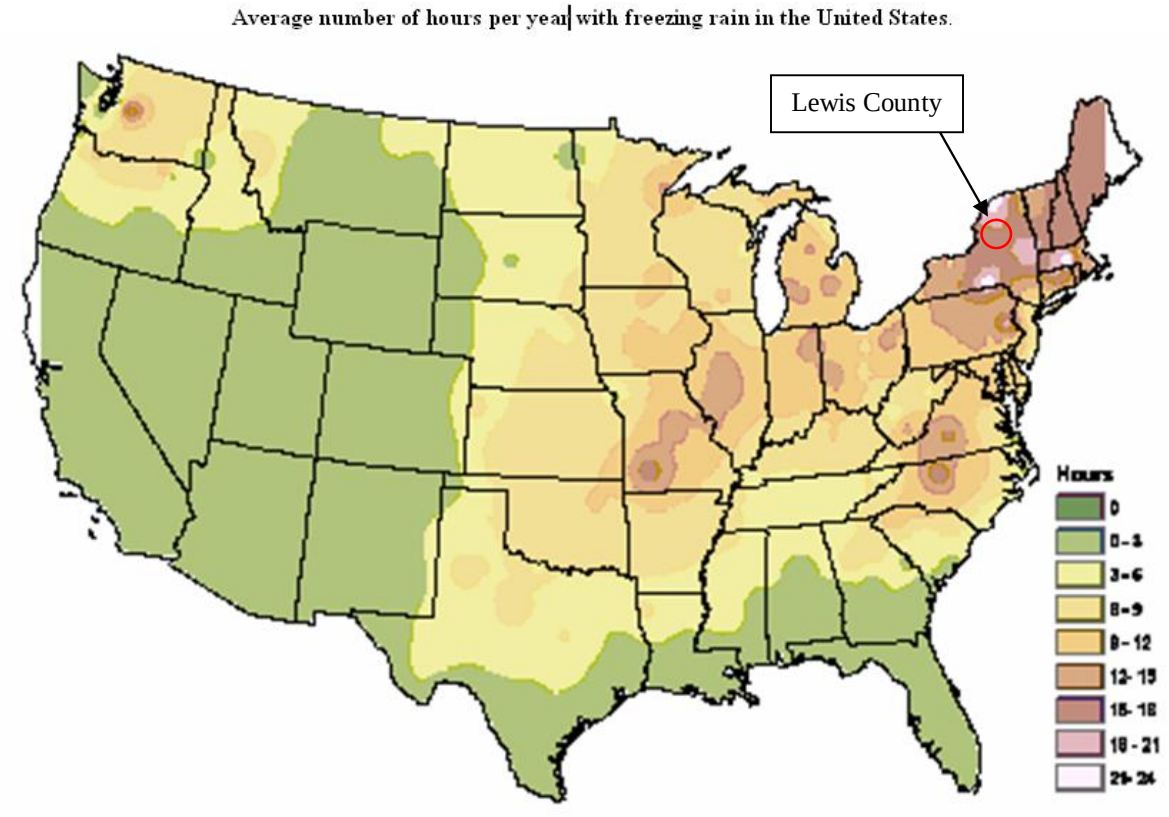
Statewide, according to NOAA data average annual snowfall ranges from a low of approximately 10 ï 20 inches in the New York City / Long Island area, to over 200 inches in the north of the State, in the Adirondack Mountains (see Figure 3a.6). For Lewis County, average annual snowfall ranges from 100 to 150 inches per year in the central and eastern parts of the county to over 200 inches per year on the Tug Hill Plateau in the west. The New York State Hazard Mitigation Plan (NYSHMP) of January 2008 reports that the average annual snowfall for the County is 158 inches. This can vary greatly from one year to the next, particularly if several major extended-period storms impact the area (during which snowfall totals can approach or exceed annual averages), and the NYSHMP goes on to note that the County has the potential for extreme snowfall.

Figure 3a.6: New York State Annual Snowfalls



Freezing rain is another common manifestation of winter storms: This occurs when precipitation that begins as snow at high altitude melts as it falls through zones with an air temperature above freezing, before encountering a colder layer prior to ground impact, causing it to freeze on contact with any object it encounters at ground level. Freezing rain frequently causes travel problems on roadways, breaks off tree limbs and brings down power and telephone cables. Lewis County lies within an area which experiences an average of 15 to 18 hours of freezing rain per year, which is a typical amount for areas of northern and central New York State (See Figure 3a.7). Freezing rain is comparatively uncommon in the USA outside the northeastern states.

Figure 3a.7: Freezing Rain Zones Nationwide



Source: "FREEZING RAIN EVENTS IN THE UNITED STATES", National Climatic Data Center, Asheville, North Carolina

Location – Winter Storms / Ice Storms

All of Lewis County is exposed to winter storms and ice storms; however the extent to which individual municipalities are affected varies. Figure 3a.6 shows annual snowfalls between 1971 and 2000. It is evident from the figure that municipalities in the western portion of the county, in the vicinity of the Tug Hill Plateau, receive greater amount of snow than other parts of the County. Figure 3a.7 shows that all of Lewis County receives a relatively high amount of freezing rain per year, with northern municipalities likely to receive marginally more freezing rain than the majority of the County.

Extent – Winter Storms / Ice Storms

A severe winter storm can adversely affect roadways, utilities, business activities and can cause loss of life, frostbite, or freezing. The most common effect of winter storms and ice storms is traffic accidents, interruptions in power supply and communications; and the failure of inadequately designed and/or maintained roofing systems. Power outages and temperatures below freezing for extended periods of time can cause pipes to freeze and burst. Heavily populated areas tend to be significantly impacted by losses of power and communications systems due to downed lines. Distribution lines can be downed by the weight of snow or ice, or heavy winds. When limbs and lines fall on roadways, transportation routes can be adversely affected and buildings and automobiles can be damaged. Heavy snow loads can cause roof collapse for residential, commercial, and industrial structures in cases of inadequate design and/or maintenance. If significant snowfall amounts melt quickly, inland flooding can occur as bankfull conditions are exceeded or in areas of poor roadway drainage.

The severity of the effects of winter storms and ice storms increases as the amount and rate of precipitation increase. In addition, storms with a low forward velocity are in an area for a longer duration and become more severe in their affects. Storms that are in full force during the morning or evening rush hours tend to have their affects magnified because more people are out on the roadways and directly exposed. Storms that arrive at high tide can also have exacerbated affects in coastal areas.

The magnitude of a severe winter storm or ice storm can be qualified into five main categories by event type, as shown below:

- Heavy Snowstorm: Accumulations of four inches or more of snow in a six-hour period, or six inches or more of snow in a twelve-hour period.
- Sleet Storm: Significant accumulations of solid pellets which form from the freezing of raindrops or partially melted snowflakes causing slippery surfaces posing hazards to pedestrians and motorists.
- Ice Storm: Significant accumulations of rain or drizzle freezing on objects (tress, power lines, roadways, etc.) as it strikes them, causing slippery surfaces and damage from the sheer weight of ice accumulation.
- Blizzard: Wind velocity of 35 miles per hour or more, temperatures below freezing, considerable blowing snow with visibility frequently below one-quarter mile prevailing over an extended period of time.
- Severe Blizzard: Wind velocity of 45 miles per hour, temperatures of 10 degrees Fahrenheit or lower, a high density of blowing snow with visibility frequently measured in feet prevailing over an extended period of time.

Previous Occurrences – Winter Storms / Ice Storms

In Lewis County, severe winter snow and ice storms are normal and expected. A review of the New York State Hazard Mitigation Plan in conjunction with data from NOAA and FEMA shows that Lewis County has been specifically included in three snow- or ice-related declared disasters and four snow or ice- related emergency declarations, as detailed in Table 3a.5.

Table 3a.5
Winter Storm Disaster/Emergency Declarations Affecting Lewis County
(Source: NYSEMO / FEMA)

Disaster/ Emergency #	Description: Eligible Assistance for Lewis County	Declared Date (and Incident Period)	Eligible Assistance for Lewis County
EM-3273	Lake-Effect Snowstorms	2/23/2007 (2/2/2007 ï 2/12/2007)	Public Assistance
EM-3195	Lake-Effect Storm	3/3/2004 (1/28/2004 ï 1/31/2004)	Public Assistance
EM-3136	Snow Emergency	1/15/1999 (1/1/1999 ï 1/15/1999)	Public Assistance
DR-1196	Ice Storm	1/10/1998 (1/5/1998 ï 1/17/1998)	Public Assistance, Individual Assistance
DR-0898	Ice Storm:	3/21/1991 (3/3/1991 ï 3/10/1991)	Public Assistance
DR-0527	Snow Storms	2/5/1977 (1/27/1977 ï 1/29/1977)	Public Assistance, Individual Assistance
EM-3027	Snow Storms:	1/29/1977 (1/27/1977 ï 1/29/1977	Public Assistance

In addition to this information, the NCDC database holds detailed snow and ice events for Lewis County from January 1993 (when detailed NCDC records begin) to December 2008, and a review of the NCDC database yielded 129 significant snow and ice events reported as having affected Lewis County during this period. These events are reported as being responsible for property damage totaling more than $92 million, although this includes damage reported in counties besides Lewis County that were affected by the same events. Details and descriptions for some of the events recorded by the NCDC, as well as other events gathered from local sources, are as follows:

January 31, 1977
Jefferson and Lewis Counties were included in federal emergency declaration EM-3027 following a blizzard which dumped more than five feet of snow on areas east of Lake Ontario. In addition to the snowfall, powerful winds gusting at 53 mph pounded the area for more than two days. More than 32,000 residents of Jefferson, Lewis, and St. Lawrence Counties experienced power outages. Failure and stranding of local assets meant that heavy equipment had to be brought in from up to 100 miles away to tackle the conditions.

Winter of 1989
Local sources report that in the winter of 1989 a lake effect storm produced four feet of snow overnight in the Village of Lyons Falls, leaving streets blocked for several days.

March 3, 1991
A severe storm system of freezing rain and ice resulted in loss of power to more than 350,000 customers across northern and eastern New York State. Ice buildups ranged from one to two inches over the hardest hit areas. The ice coated trees and power lines and sent them crashing to the ground along with utility poles and transformers. There were also numerous reports of structural damage from the weight of the ice. Lewis County was included as eligible for Public Assistance funds under federally-declared disaster DR-0898 which resulted from the storm.

January 4, 1994
Low pressure developed over the southeast United States and tracked northeast along the Eastern Seaboard. The low dumped heavy snow across the entire Western New York area. Snowfall amounts were 12 to 18 inches over the Eastern Lake Ontario Counties. Travel quickly became difficult across much of the region. Numerous automobile accidents, some with fatalities, resulted. States of Emergency were declared in 11 counties including Lewis. Emergency shelters were set up throughout that eleven county area for stranded travelers and motorists.

February 7, 1995
Arctic air crossing the relatively warm waters of the Great Lakes produced intense lake effect squalls which meandered across the areas downwind of the lakes for nearly two weeks from the 4th through the 14th. Snowfall totals for the storm ranged from near two to seven feet. At one point during the storm east of Lake Ontario, snow was falling at the rate of five inches an hour. The heavy snows combined with strong winds to produce whiteouts and hazardous driving. Actual storm totals in Lewis County included: Montague 66 inches, Highmarket 48 inches, and Lowville 36 inches.

January 4, 1996
A major winter storm brought heavy snowfall to the area. In general 12-20 inches of snow fell across the area. School closings were the rule. The winter road conditions were blamed for many automobile accidents.

November 11, 1996
Arctic air crossing Lake Ontario produced lake effect snow squalls which persisted for nearly four days. Apparently weakening somewhat during the daylight hours, the squalls intensified overnight. Numerous automobile accidents --some with injuries-- were blamed on the whiteouts and hazardous driving conditions. Various school districts cancelled classes because of the storm. Snowfall totals in Lewis County ranged from 20-30 inches.

January 10, 1997
An intense band of lake effect snow brought unprecedented amount of snow to the eastern Lake Ontario region. Snowfall rates of three to six inches per hour were received. Snow totals for the four day event ranged from five to seven feet. Isolated areas exceeded 84 inches. Specific snowfall totals for the storm included: Montague 95 inches; North Osceola 75 inches; and Highmarket 50 inches.

January 8, 1998
A devastating ice storm paralyzed Jefferson County and parts of Lewis County. The freezing rain accumulated ice of an inch to an inch and a half thick. The ice coated trees, power lines, and poles and sent them crashing to the ground. Hundreds of thousands of customers were without power for several days to over a week. Lewis County was included as eligible for Public Assistance funds under federally-declared disaster DR-1196 which resulted from the storm.

December 22, 1998
This first significant lake effect snowstorm of the season was a long lasting one. Arctic air surged into the region following the passage of a strong cold front. Lake snows never shut down off Lake Ontario throughout the four day event. The storm totals were not overly impressive since the snow squalls oscillated across the area as winds shifted with the passage of weak troughs. The greatest recorded snowfall amount was 35 inches at Montague. Numerous automobile accidents (several with injuries and one fatal) were blamed on the wintry conditions and several school districts cancelled classes.

January 15, 1999
Low pressure moved to the south of the area and produced a general heavy snowfall across the region. The heavy, wet snow combined with freezing rain resulting in traffic tie-ups and school closings. Visibilities were reduced and roads became treacherous from the ice mix of snow and sleet. A general snowfall of six to nine inches fell across the entire area. This latest bout only added to the already harsh winter conditions across the region. Several counties in the area were declared disaster areas by the State and Federal government.

December 22, 1999
The season's first lengthy lake effect episode began late on the 21st following a cold front. East of Lake Ontario, a single intense band remained nearly stationary from the morning of the 22nd through the night of the 23rd-24th. Storm snowfall totals included: 42 inches at Montague.

November 20, 2000
Cold air crossing the warm waters of Lakes Erie and Ontario resulted in lake effect squalls that dropped over two feet of snow downwind of the lakes. Specific snowfall reports included 24 inches in North Osceola.

December 27, 2001
During the night of the 26th and daytime hours of the 27th, lake effect snowbands intensified over northern Jefferson County. On the 28th the snowband settled south across southern Jefferson and Lewis counties. Thunder and lightning were reported during the evening with snowfall rates of two to four inches per hour. The band oscillated north and south across southern Jefferson and Lewis counties through the 28th. Specific snowfall totals in Lewis County included 127 inches in Montague, 104 inches at Highmarket, 86 inches at North Osceola, 64 inches at Hooker; 62 inches at Barnes Corners, 48 inches at Lowville, and 42 inches at Brantingham. Damages were estimated at $5 million across Lewis, Jefferson, and Oswego Counties.

December 23, 2002
A single plume of lake effect snow developed off Lake Ontario in an extremely cold, northwest flow. During its peak, snowfall rates as high as five inches per hour were accompanied by thunder and lightning. Specific snowfall reports in Lewis County included: 24 inches at Castorland and 14 inches at Highmarket.

January 11, 2003
A sharp cold front crossed western and central New York late on the 10th. Lake effect snow developed overnight in the cold, westerly flow. The activity began in a fairly broad area at first covering counties off Lake Erie and southern Jefferson and northern Lewis counties off Lake Ontario. Very intense single bands set up during the morning of the 11th. Accumulations of three to five inches an hour were common off Lake Ontario. In Lewis County 51 inches of snowfall were reported in Highmarket and North Osceola.

February 23, 2003
An ice storm deposited one-half- to three-quarters of an inch of ice at various locations in the north country. The ice downed tree limbs and power lines. As many as 7000 customers were without power at the peak of the storm.

January 6, 2004
This major lake effect storm began early on Tuesday the 6th following a sharp cold front. Off Lake Ontario the activity began on a westerly flow across the northern part of Tug Hill into southern Jefferson county and western Lewis County, and settled south across Oswego county early on the 7th. One to two feet fell in this area. Snowfall totals reported with this activity included 34 inches in North Osceola.

December 19, 2005
Lake snows began to develop late in the evening of the 18th and intensified overnight. The snows remained nearly stationary until the afternoon hours. Over two feet of snow fell over the Tug Hill. Snowfall totals in Lewis County included: 28 inches at North Osceola.

February 5, 2006
A cold front swept across the area and as the cold air deepened, lake effect snows developed. Off Lake Erie, the strong westerly winds reduced visibilities to half a mile at times and pushed the

lake effect snows well inland. Specific snow amounts during the 60-hour storm included 16 inches at North Osceola and 15 inches at Lowville.

January 14, 2007
Low pressure centered over southern Indiana tracked northeast and spread freezing rain across the area. Up to a half-inch of ice accumulated on trees and wires. The weight brought down some power lines with outages scattered throughout the area.

October 28, 2008
An intense east coast storm lifted north across New England on Tuesday the 28th and brought an early season snowstorm to the Eastern Lake Ontario Region. The precipitation began as rain, but gradually changed over to snow during the afternoon and early evening. The snow was very heavy and wet and there were numerous reports of tree damage and broken limbs. Scattered power outages were reported. Specific snowfall reports included 18 inches at Harrisville.

Probability of Occurrence – Winter Storms / Ice Storms

This plan aims to assess the probability of future occurrences of severe snowfalls and ice storms in terms of frequency based on historical events. Using the historical data presented above, and the primary generic descriptions of the events recorded by the NCDC as having affected Lewis County, Table 3a.6 summarizes the occurrence of winter storm events and their annual occurrence: Lewis County and its municipal jurisdictions have experienced 128 recorded significant winter storms / ice storms between 1993 and 2008, ï an average of 8.5 events per year.

Table 3a.6
Occurrence of Winter Storms/Ice Storms, Lewis County (1993 – 2008)
(Source: NOAA's NCDC Storm Events Database)

Type	Total Number of Events	Average Annual Number of Events
Heavy Snow	112	7.5
Winter Storm	10	0.67
Ice Storm	3	0.2
Snow Squall	2	0.13
Freezing Rain	1	0.07
Total	128	8.5

Winter storm events will remain a very frequent occurrence in Lewis County, and the probability of future occurrences in the County is certain, but the impacts of snow and ice storms are more likely to be major disruptions to transportation, commerce and electrical power as well as significant overtime work for government employees, rather than large scale property damages and/or threats to human life and safety.

Dam Failure

Description – Dam Failure

Dam failure is the breakdown, collapse or other failure of a dam structure characterized by the uncontrolled release of impounded water that results in downstream flooding. In the event of a dam failure, the energy of the water stored behind even a small dam is capable of causing loss of life and severe property damage if development exists downstream. There are varying degrees of failure, and an unexpected or unplanned dam breach is considered one type of failure. A breach is an opening through a dam which drains the water impounded behind it. A controlled breach is a planned, constructed opening and not considered a dam failure event, while an uncontrolled breach is the unintentional discharge from the impounded water body and considered a failure.

Dam failure can result from natural events, human-induced events or a combination of the two. Natural occurrences that may cause dam failure include hurricanes, floods, earthquakes and landslides; human-induced actions may include the deterioration of the foundation or the materials used in dam construction. In recent years, dams have also received considerably more attention in the emergency management community as potential targets for terrorist acts.

Dam failure presents a significant potential for disaster, in that significant loss of life and property would be expected in addition to the possible loss of power and water resources. The most common cause of dam failure is prolonged rainfall that produces flooding. Failures due to other natural events such as hurricanes, earthquakes or landslides are significant because there is generally little or no advance warning. The best way to mitigate dam failure is through the proper construction, inspection, maintenance and operation of dams, as well as maintaining and updating Emergency Action Plans (EAPs) for use in the event of a dam failure.

The New York State Department of Environmental Conservation (NYSDEC), the body responsible for dam safety and regulation in the State of New York, classifies the hazard potential of dams using four categories, shown in Table 3a.7.

Table 3a.7 Dam Hazard Potential Classifications	
NYSDEC Classification	**Description**
Class "C" or "High Hazard"	A dam failure may result in widespread or serious damage to home(s); damage to main highways, industrial or commercial buildings, railroads, and/or important utilities, including water supply, sewage treatment, fuel, power, cable or telephone infrastructure; or substantial environmental damage; such that the loss of human life or widespread substantial economic loss is likely.
Class "B" or "Moderate Hazard"	A dam failure may result in damage to isolated homes, main highways, and minor railroads; may result in the interruption of important utilities, including water supply, sewage treatment, fuel, power, cable or telephone infrastructure; and/or is otherwise likely to pose the threat of personal injury and/or substantial economic loss or substantial environmental damage. Loss of human life is not expected.
Class "A" or "Low Hazard"	A dam failure is unlikely to result in damage to anything more than isolated or unoccupied buildings, undeveloped lands, minor roads such as town or county roads; is unlikely to result in the interruption of important utilities, including water supply, sewage treatment, fuel, power, cable or telephone infrastructure; and/or is otherwise unlikely to pose the threat of personal injury, substantial economic loss or substantial environmental damage.
Class "D" or "Negligible or No Hazard"	"A dam that has been breached or removed, or has failed or otherwise no longer materially impounds waters, or a dam that was planned but never constructed. Class "D" dams are considered to be defunct dams posing negligible or no hazard. The department may retain pertinent records regarding such dams.

Location and Extent– Lewis County Dams

The NYSDEC records 109 dams in Lewis County, of which five are classified as High Hazard Potential (C), nine are classified as Moderate Hazard Potential (B), 76 are classified as Low Hazard Potential, and the remainder are Negligible, or No Hazard Potential (Class D - dams classified as ôNo Hazardô indicate dams that are not built or no longer function as dams). Table 3a.8 presents details for all dams in Lewis County classified as of moderate hazard by the NYSDEC. The location of all dams recorded in the NYSDEC inventory of dams is presented in Figure 3a.8.

Table 3a.8
Lewis County High/Moderate Hazard Potential Dams
(Source: NYSDEC)

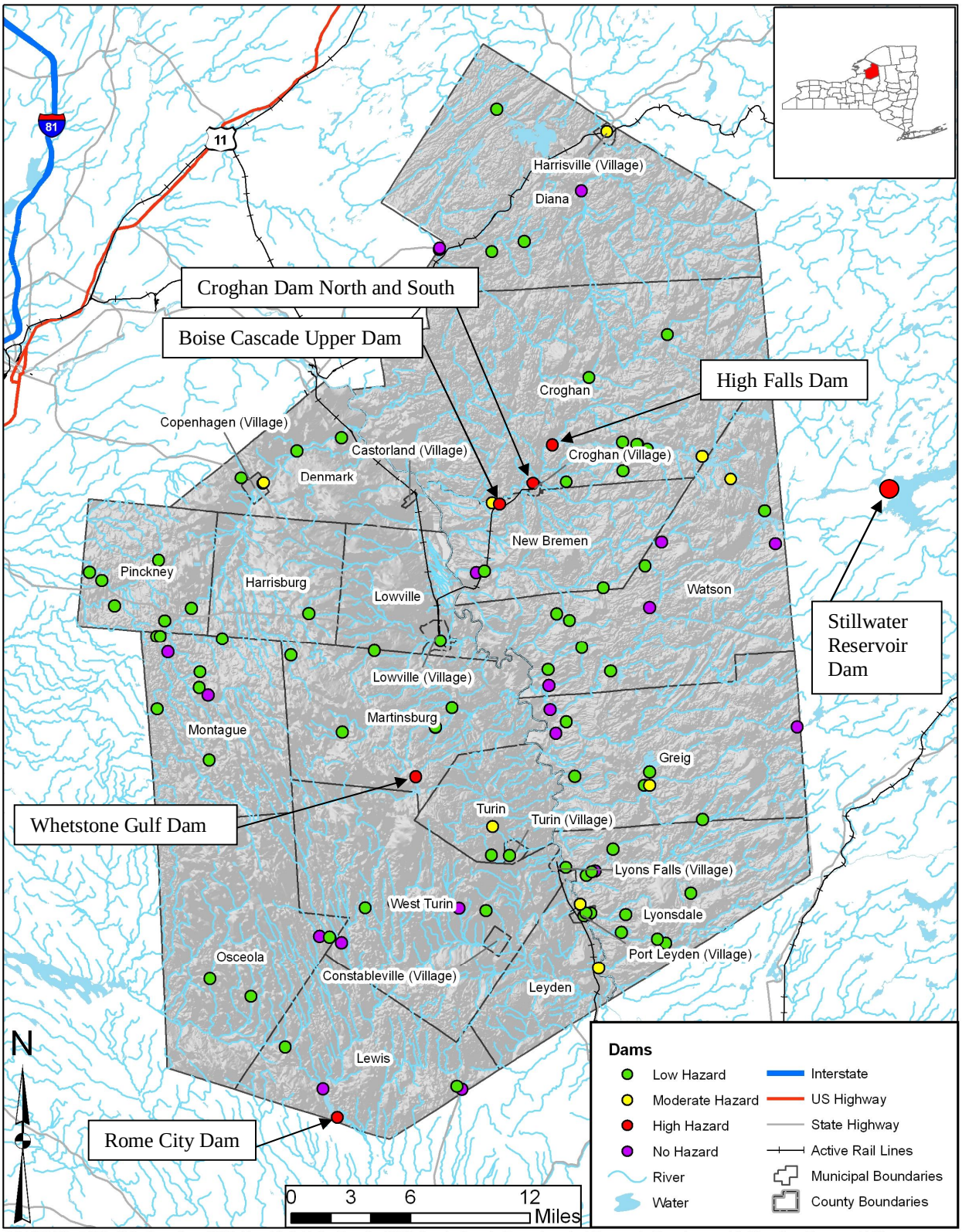
Dam Name	Municipality	River/Stream	Owner	Maximum Storage (Acre-Feet)	Dam Height (Feet)	NYSDEC Hazard Classification
Boise Cascade Upper Dam*	New Bremen	Beaver River	Beaver Falls Hydro Associates	160	25	C
Croghan Dam North and South*	Croghan (Village)	Beaver River	Beaverite / Zehr / Croghan Island Mill Company	797	12	C
High Falls Dam*	Croghan (Town)	Beaver River	Brascan Power Corp.	2,437	55	C
Rome City Dam	Lewis (Town)	Fish Creek	City of Rome, NY	8,625	85	C
Whetstone Gulf Dam*	Martinsburg	Whetstone Creek	NYS Parks and Recreation	3,742	23	C
Adirondack Acres Dam A	Greig	Brantingham Lake Outlet	Fred Rhone	238	24	B
Boise Cascade Lower Dam*	Croghan (Town)	Beaver River	Beaver Falls Hydro Associates	209	15	B
Denley Dam	Leyden / Lyonsdale	Black River	Black River Hydro Associates	350	29	B
Eagle Falls Dam*	Watson	Beaver River	Brascan Power Corp.	3,720	33	B
Harrisville Dam	Harrisville	West Branch, Oswegatchie River	Village of Harrisville	270	23	B
High Falls Dam at Copenhagen	Copenhagen	Deer River	Hydro Development Group Inc.	33	25	B
Port Leyden Lower Dam	Leyden / Lyonsdale	Black River	Cataldo Hydro Power Associates	150	24	B
Soft Maple Terminal Dam*	Croghan (Town)	Beaver River	Brascan Power Corp.	13,950	120	B
Turin Reservoir Dam[1]	Turin (Town)	Mill Creek	Village of Turin	1	25	B

*EAP on file at NYSDEC
1. Hazard potential code B according to NYSDEC, but current existence and function not confirmed ï no evidence of dam visible on aerial photographs at location recorded by NYSDEC.

Of the five ñhigh hazard potentialò dams in Lewis County, there is only one that could be classified by USGS as a ñmajorò dam, which represents the most significant hazard risk based on the potential consequences of a dam failure. According to USGS, major dams are described as 50 feet or more in height, or with a normal storage capacity of 5,000 acre-feet or more, or with a maximum storage capacity of 25,000 acre-feet or more. The only ñmajorò high hazard dam in the County is the Rome City Dam in the Town of Lewis, which has a dam height of 85 feet and a normal storage volume of 4,435 acre-feet.

Of the nine moderate hazard potential dams in Lewis County, one could be classified by USGS as a ñmajorò dam, which represents the most significant hazard risk based on the potential consequences of a dam failure. The only ñmajorò moderate hazard dam in the County is the Soft Maple Terminal Dam in the Town of Croghan, which has a dam height of 120 feet and a normal storage volume of 7,323 acre-feet. The largest dam in the County measured by maximum storage is the Alpina Dam (Lake Bonaparte) in the Town of Diana, with a maximum storage volume of 39,739 acre-feet. This dam is classified by NYSDEC as of Low Hazard Potential.

Figure 3a.8: Lewis County Dams (with High Hazard Potential dams identified)



SOURCES: ESRI, U.S. Counties, 2005, New York Major Roads, 2000; Lewis County Department of Economic Development & Planning, Town and Village Boundaries; U.S. Census Bureau, Census Railroads, New York State, 2001, Herkimer, Oswego, Oneida, Lewis, Jefferson, St. Lawrence Counties, Area Hydrography, 2007; NYSDEC, Inventory of Dams, 2007

In addition to those dams actually located within Lewis County, there is also the possibility that dams in neighboring counties present a hazard to life and property in Lewis County, if they are located on watercourses that pass through or drain into Lewis County. Once such dam is the Stillwater Reservoir Dam, located on the Beaver River in Herkimer County, to the east of Lewis County. This structure is a major high hazard dam with a dam height of 55 feet and a normal storage of 95,000 acre-feet. While inundation mapping for this structure was not readily available, information gathered via general research indicates that a breach or failure of this dam would be expected to cause significant flooding of developed areas along the Beaver River, into the Black River Valley in northern Lewis County, and into eastern Jefferson County.

The standard method of estimating exposure to and potential losses from dam failure hazard uses data produced through detailed dam failure inundation studies. These studies are often prepared by the owners of dam facilities as part of their own Emergency Action Plans (EAPs) and are kept on file by NYSDEC. Although such plans have been previously completed for the four of the high hazard dams in Lewis County and three of the moderate hazard dams listed in Table 3a.12, actual inundation mapping was not readily available or was not of sufficient clarity to facilitate meaningful estimates of the numbers and values of structures potentially exposed to inundation following dam failure or breach.

It is recommended that Lewis County and any municipality potentially exposed to flooding caused by dam failure investigate the development of inundation mapping and response plans for dams where none are available or where the existing mapping is outdated or lacking in detail as part of their future hazard mitigation strategies.

Historical Occurrences – Dam Failure

In addition to the NYSDEC inventory, detailed information on dams nationwide is compiled by the National Performance of Dams Program (NPDP) at Stanford University. While the NPDP database records much the same information as NYSDEC, it also includes a performance and event history for each dam which includes descriptions of any safety-related incidents that have occurred.

The NPDP database reports 14 dam safety incidents occurring at Lewis County dams, of which the earliest was recorded in 1984. None of these incidents are described in any detail, beyond simple generic descriptions: Of the 14 reported incidents, 12 are described as ñInflow flood ï hydrologic eventò, one as ñConcrete Spillway Capò, and one ñNot knownò. Of the 12 ñInflow floodò events, two are reported as having caused dam failure, but further descriptions of the mechanism, impacts, damages and response could not be found:

- Kosterville Mill Dam: Located on the Moose River in the Town of Lyonsdale, this dam is recorded by NPDP as experiencing failure due to unspecified causes on an unspecified date in 1984. This structure is classified as Low hazard potential (Code A) by NYSDEC, and has a normal storage of 6 acre-feet and a dam height of 8 feet.
- Gouldtown Mill West Channel Dam: located on the Moose River in the Town of Lyonsdale (less than half a mile downstream of the Kosterville Mill Dam), this dam is recorded by NPDP as experiencing failure during an ñInflow flood ï hydrologic eventò on January 7, 1998. This structure is classified as Low hazard potential (Code A) by NYSDEC, and has a normal storage of 70 acre-feet and a dam height of 19 feet.

NCDC records for flood events in Lewis County also report that a small dam on the east branch of the Mohawk River at West Leyden in the Town of Lewis suffered a partial washout during the heavy rain and flood events of January 8, 1998. Local sources in the Village of Lyons Falls report that during severe rain

storms in 1990 there was a great deal of local concern about the integrity of the Denly Dam (an NYSDEC Code B dam approximately five miles upstream of the village on the Black River) and emergency services were prepared to evacuate residents of numerous streets in low-lying areas. Local sources consider Dock Street, Franklin Street, and a sewage pumping station to be particularly vulnerable. The Beaver River Dam in the Village of Croghan is also considered by local sources to be in a state of disrepair and hence a major hazard concern.

Probability of Occurrence – Dam Failure

The probability of a dam failure occurrence in Lewis County is relatively low due to routine inspection, repair and maintenance programs carried out by the NYSDEC, which serves to ensure the safety and integrity of dams in New York and, thereby protects people and property from the consequences of dam failures. However, the possibility of a future failure event is likely increasing due to aging dam structures that may be in need of repair or reconstruction, and occasional problems related to private dam ownersô degree of cooperation with State regulatory agencies.

Drought

Description – Drought

The general term ñdroughtò is defined by the US Geological Survey (USGS) as, ña prolonged period of less-than-normal precipitation such that the lack of water causes a serious hydrologic imbalance.ò As stated in FEMAôs, ñMulti-Hazard Identification and Risk Assessmentò (1997), drought is the consequence of a natural reduction in the amount of precipitation expected over an extended period of time, usually a season or more in length.

According to the National Oceanic and Atmospheric Administrationôs (NOAAôs) Drought Information Center, there are four types of drought:

- Meteorological Drought ï A measure of precipitation departure from normal.
- Agricultural Drought ï When the amount of moisture in soil does not meet the needs of a particular crop.
- Hydrological Drought ï When both surface and subsurface water supplies are below normal.
- Socioeconomic Drought - When a water shortage begins to affect people.

Meteorological droughts are typically defined by the level of ñdrynessò when compared to an average, or normal amount of precipitation over a given period of time. Agricultural droughts relate common characteristics of drought to their specific agricultural-related impacts (when the amount of moisture in soil does not meet the needs of a particular crop). Hydrological drought is directly related to the effect of precipitation shortfalls on surface and groundwater supplies. Human factors, particularly changes in land use, can alter the hydrologic characteristics of a basin. Socio-economic drought is the result of water shortages that affect people and limit the ability to supply water-dependent products in the marketplace.

Drought conditions typically do not cause property damages or threaten lives, but rather drought effects are most directly felt by agricultural sectors. At times, drought may also cause community-wide impacts as a result of acute water shortages (regulatory use restrictions, drinking water supply and salt water intrusion). The magnitude of such impacts correlates directly with local groundwater supplies, reservoir storage and development densities. In general, impacts of drought can include significant adverse consequences to:

- Public water supplies for human consumption
- Rural water supplies for livestock consumption and agricultural operations
- Water quality
- Natural soil water or irrigation water for agriculture
- Water for forests and for fighting forest fires
- Water for navigation and recreation.

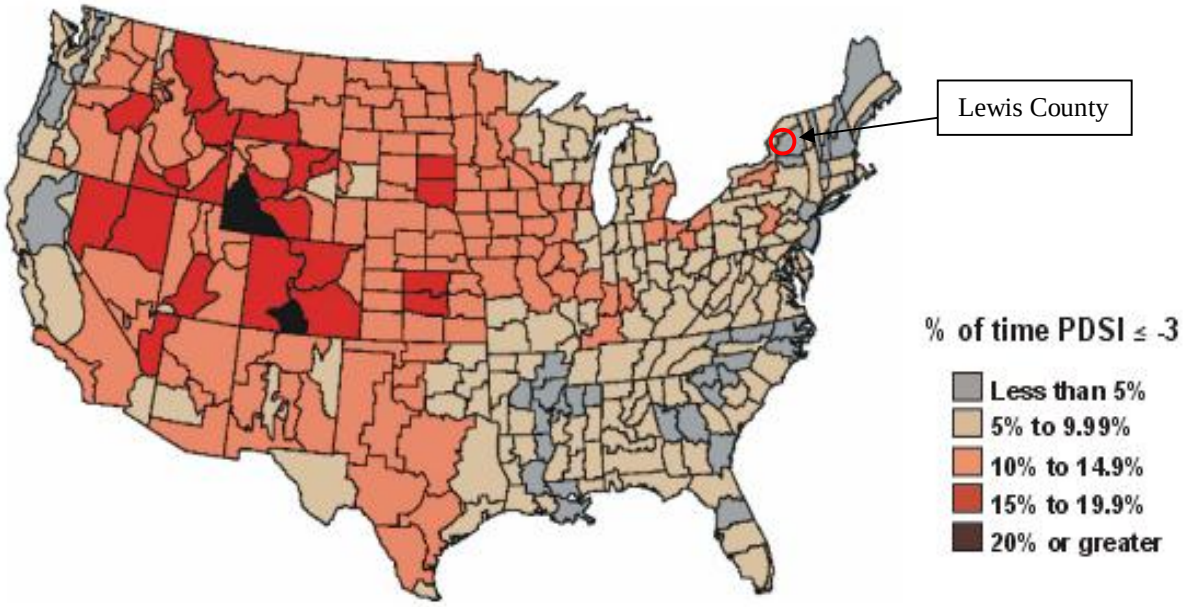
The severity of these impacts depends not only on the duration, intensity, and geographic extent of a specific drought event, but also on the demands made by human activities and vegetation on regional water supplies.

Location and Extent – Drought

Droughts occur in all parts of the country and at any time of year, depending on temperature and precipitation over time. Arid regions are more susceptible to long-term or extreme drought conditions, while other areas (including Lewis County) tend to be more susceptible to short-term, less severe droughts.

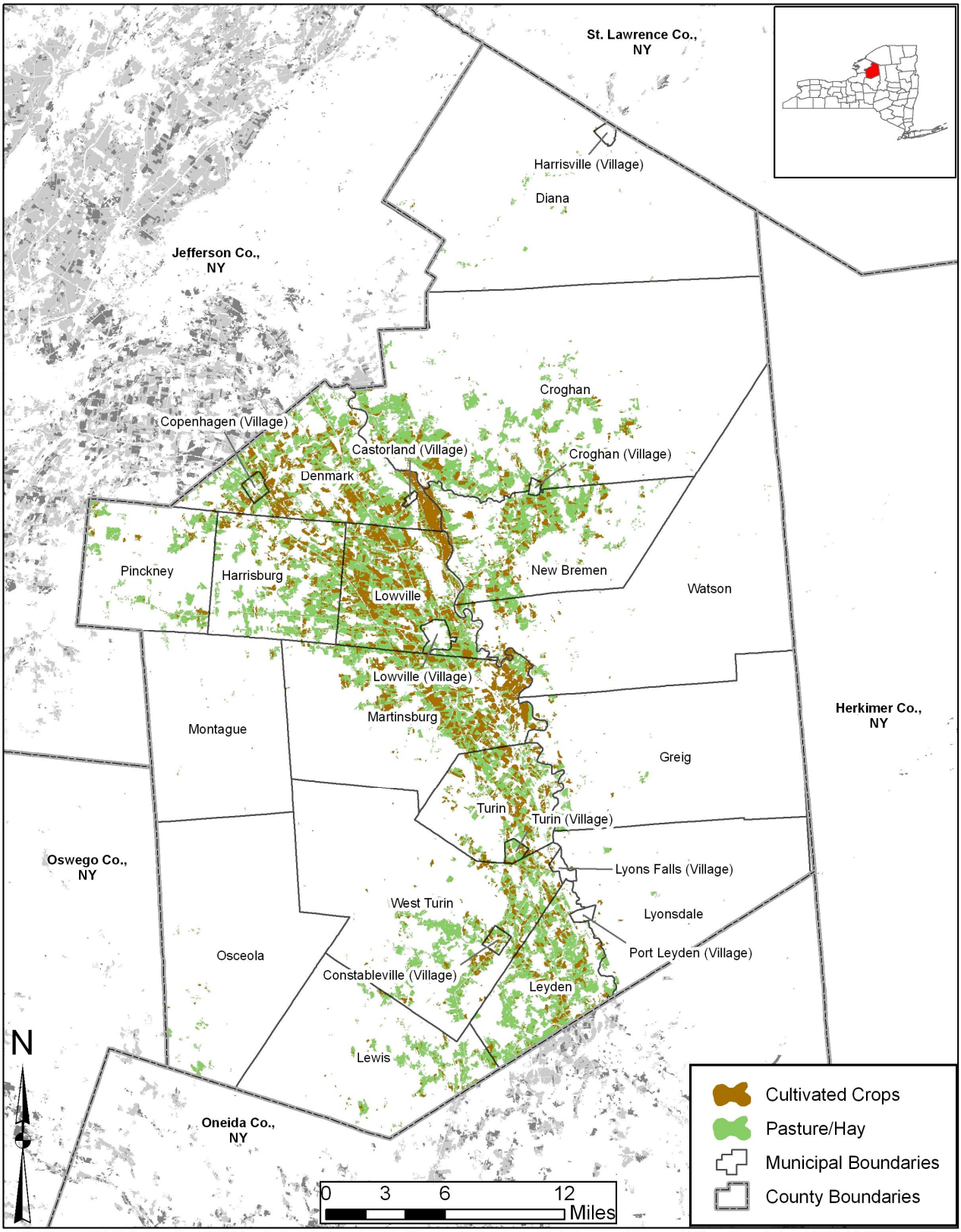
Figure 3a.9 shows the Palmer Drought Severity Index (PDSI) Summary Map for the United States from 1895 to 1995. PDSI drought classifications are based on observed drought conditions and will range from -0.5 (incipient dry spell) to -4.0 (extreme drought). According to the PDSI map, Lewis County is in an area experiencing severe drought conditions less than 5% of the period 1885 to 1985. It can therefore be assumed that severe drought conditions are a relatively low risk for Lewis County. However, short term droughts of less severity are more common and may occur several times in a decade.

Figure 3a.9: Palmer Drought Severity Index Summary Map for the United States



While the extent of drought impacts for Lewis County may include all of the issues listed above, some of the most immediately quantifiable effects of drought in the County are likely to be experienced by farmers, who can suffer heavy financial losses due to crop damage or loss. Figure 3a.10 shows the extent, location and distribution of agricultural land across Lewis County, and Table 3a.9 presents a breakdown of agricultural land by municipality, based on land cover GIS data. It is evident from the figure that a significant proportion of municipality areas are devoted to agriculture in some form. According to the USDA Agricultural Census of 2007, there are 616 farms in Lewis County, with a market production value of more than $112 million. More than 85% of this value is accounted for by milk and other dairy products, with total crop sales accounting for only 6%. The most significant recorded categories of produce other than hay and feed crops is vegetables, melons and potatoes, and grains, oilseeds, beans and peas which in 2007 both contributed approximately $1.4 million to the total market production value. The Countyôs 616 farms occupy approximately 167,000 acres (20% of the County area), of which 92,000 acres are classified as cropland by the USDA Agricultural Census.

Figure 3a.10: Lewis County Agricultural Land



SOURCES: ESRI, U.S. Counties, 2005; Lewis County Department of Economic Development & Planning, Town and Village Boundaries; USGS NLCD Zone 65 Land Conver Layer, 2003

Table 3a.9
Distribution of Agricultural Land in Lewis County
USGS NLCD Land Cover 2003, Lamont-Doherty Earth Observatory (Crop/Pastureland Areas)

Municipality	Total Area (Acres)	Cultivated Cropland (Acres)	Cultivated Cropland (%)	Pasture Land (Acres)	Pasture Land (%)
Castorland, Village of	183	44	24.1%	12	6.5%
Constableville, Village of	723	131	18.1%	228	31.6%
Copenhagen, Village of	*756*	*147*	*19.4%*	*311*	*41.1%*
Croghan, Town of	116,142	2,546	2.2%	10,930	9.4%
Croghan, Village of	274	22	8.0%	73	26.9%
Denmark, Town of	31,760	6,323	19.9%	9,287	29.2%
Diana, Town of	90,049	40	0.0%	364	0.4%
Greig, Town of	59,864	282	0.5%	774	1.3%
Harrisburg, Town of	25,455	2,198	8.6%	6,510	25.6%
Harrisville, Village of	*513*	*7*	*1.4%*	*4*	*0.8%*
Lewis, Town of	41,572	396	1.0%	2,937	7.1%
Leyden, Town of	21,234	2,016	9.5%	8,254	38.9%
Lowville, Town of	23,141	6,983	30.2%	8,425	36.4%
Lowville, Village of	1,249	60	4.8%	285	22.8%
Lyons Falls, Village of	657	26	4.0%	7	1.1%
Lyonsdale, Town of	43,974	98	0.2%	268	0.6%
Martinsburg, Town of	48,459	6,544	13.5%	8,100	16.7%
Montague, Town of	40,975	29	0.1%	178	0.4%
New Bremen, Town of	*35,738*	*2,571*	*7.2%*	*6,568*	*18.4%*
Osceola, Town of	56,678	28	0.0%	391	0.7%
Pinckney, Town of	26,336	412	1.6%	2,852	10.8%
Port Leyden, Village of	453	7	1.5%	1	0.2%
Turin, Town of	*19,445*	*2,655*	*13.7%*	*3,873*	*19.9%*
Turin, Village of	*658*	*144*	*22.0%*	*341*	*51.8%*
Watson, Town of	*74,818*	*608*	*0.8%*	*1,086*	*1.5%*
West Turin, Town of	64,525	2,118	3.3%	7,071	11.0%
Lewis County Total	**825,630**	**36,436**	**4.4%**	**79,132**	**9.6%**

Note: Some hay- or forage-producing pastureland is classified as cropland by the USDA Agricultural Census

Figure 3a.10 and Table 3a.14 indicate that the impact of drought would be experienced most significantly for municipalities in the center of the County, along the Black River Valley, where several municipalities have around 20% or more of their land areas given over to cultivated cropland, and some have 30-40% of their land areas given over to pastureland. A publication entitled ñLewis County Soilsò issued by the Cornell Cooperative Extension mentions that the soils of the Black River Valley have low water-holding capacity, so productivity can be severely affected by long periods of drought.

Previous Occurrences – Drought

Historical occurrences of drought in Lewis County have been identified using the NOAA NCDC database. The NCDC database records one significant drought event which specifically mentions Lewis County as an affected area since August 1993, the point at which NCDC drought records begin in New York State:

August – December, 1993:
A prolonged period of drought starting in the summer of 1993 decimated much of the agriculture in southern and eastern New York State. Estimates of feed grain losses in affected counties were well over 40 percent and in some cases nearly 100 percent. Especially hard hit were hay and corn crops as well as fruits and vegetables. Total crop damages were estimated at $50 million across the affected area.

The New York State Hazard Mitigation Plan also makes reference to a ñStatewideò drought event in October 1994, although no further details are given other than that this month equaled the driest month on record at Albany.

Probability of Occurrence – Drought

Based on NCDC records, Lewis County has directly experienced 1 significant drought during the 15 year period from 1993 through 2008, or an average of 0.07 drought events per year. This is consistent with Figure 3a.15 which suggests Lewis County is less prone to drought conditions than other parts of the region. However, Lewis County may experience an increase in the frequency of drought conditions in the foreseeable future if some of the current predictions regarding climate change prove to be accurate.

Floods

Description – Floods

FEMAôs National Flood Insurance Program (NFIP) defines the term ñfloodingò as ña general and temporary condition of partial or complete inundationé from overflow of inland or tidal waters, unusual and rapid accumulation or runoff of surface waters from any source, or a mudflow.ò According to FEMAôs *NFIP Floodplain Management Requirements: a Study Guide and Desk Reference for Local Officials* (FEMA-480), most floods fall into the following three categories:

- **Riverine Flooding – Flooding that occurs along a channel** (where a ñchannelò is defined as a feature on the ground that carries water through and out of a watershed, whether natural channels such as rivers and streams, or man-made channels such as drainage ditches).
    - Overbank flooding occurs along a channel as excess flows overflow channel banks. Overbank flooding occurs when downstream channels receive more rain or snowmelt from their watershed than normal, or a channel is blocked by an ice jam or debris.
    - Flash floods are a type of riverine flooding typically caused when a significant amount of rainfall occurs in a very short duration. Flash flooding is characterized by a rapid rise in water level and high velocity flows. Flash floods can also be caused by ice jams (ice jam flooding, which can be upstream of an intact jam or downstream of a jam that has broken upstream) or dam breaks.
- **Coastal Flooding – Flooding that occurs along the coasts of oceans, the Gulf of Mexico, and large lakes** (i.e., the Great Lakes). Hurricanes and severe storms cause most coastal flooding, including ñNorôeastersò which are severe storms that occur in the Atlantic basin that are extratropical in nature with winds out of the northeast.
    - Storm surge is one characteristic of coastal flooding caused as persistent high winds and changes in air pressure work to push water on shore, often on the order of several feet.
- **Shallow Flooding – Flooding that occurs in flat areas where a lack of channels means water cannot drain away easily.**
    - Sheet flow occurs when there are inadequate or no defined channels and floodwaters spread out over a large area at a somewhat uniform depth. Sheet flow occurs after intense or prolonged rainfalls during which rain cannot soak into the ground.
    - Ponding occurs when runoff collects in a depression and cannot drain out. Ponding floodwaters do not move or flow away; they will remain until the water infiltrates into the soil, evaporates, or is pumped away.
    - Urban drainage flooding occurs when the capacity of an urban drainage system is exceeded. An urban drainage system comprises the ditches, storm sewers, retention ponds and other facilities constructed to store runoff or carry it to a receiving stream, lake or the ocean. Urban drainage flooding can also occur in areas protected by levees, as water collects on the protected side of the levee when pump capacities are exceeded during severe storms.

Floods are considered hazards when people and property are affected. Historically, development in floodplains was often a necessity, as water bodies provided a means of transportation, electricity, water supply, and often supported the livelihood of local residents (i.e., fishing, farming, etc.). Today, development in floodplains is more often spurred by the aesthetic and recreational value of the floodplain. Flooding is widely regarded as the most common major natural hazard in New York State.

The **National Flood Insurance Program (NFIP)** was established by Congress with the passage of the National Flood Insurance Reform Act of 1968. Through this program, Federally-backed flood insurance is made available to homeowners, renters, and businesses in a community if that community adopts and enforces a floodplain management ordinance to reduce future flood damages within its floodplains. This includes not only preventative measures for new development, but also corrective measures for existing development. FEMA also administers the Community Rating System (CRS), a program under which communities choosing to implement floodplain management actions that go beyond the minimum requirements of the NFIP become eligible for discounts on flood insurance premiums for properties within that community. At present, every individual municipality in Lewis County is an active member of the NFIP except for the Town of Montague (See Table 3a.17), although none have so far become eligible for the CRS.

In addition to providing flood insurance, the NFIP also studies and maps the nationôs floodplains, preparing its findings in Flood Insurance Rate Maps (FIRMs) and Flood Insurance Studies (FISs). FEMA also prepares digital Q3 Flood Data files, which contain digital flood hazard mapping. Digital Q3 data (or more detailed digital flood insurance rate maps known as DFIRMs) is not currently available for Lewis County, and at the time of writing Lewis County was not included in the FEMA Risk Mapping, Assessment, and Planning Program (RiskMAP) which is responsible for developing DFIRMs. In order to map and assess the risk from flooding the hard copy FIRMs for each NFIP-participating municipality were manually digitized and converted into a GIS shape file. Using GIS, these digitized maps can be overlaid upon a communityôs existing GIS base map to form the basis of the analysis of the flood hazard for Lewis County, as presented in Figure 3a.11 below. The age and quality of the hard copy FIRMs is extremely variable (the current effective FIRMs date from 1977 to 2000) and the process used to hand-digitize them does not reflect analytical processes used by FEMA to generate Q3 files or DFIRMs. Consequently the mapped flood risk areas presented in this section should be viewed as approximate and are not intended for uses other than hazard mitigation planning within the context of this plan.

Location and Extent – Floods

Flooding in Lewis County is caused by riverine flooding, shallow flooding resulting from urban drainage issues, and occasional ice jams.

The extent of flooding associated with a 1 percent probability of occurrence ï the ñ100-year floodò or ñbase floodò ï is used as regulatory boundaries by a number of federal, state and local agencies. Also referred to as the ñspecial flood hazard areaò, this boundary is a convenient tool for assessing vulnerability and risk in flood prone areas. According to the digitized floodplain mapping as described above, high flood risk zones have been identified in 21 out of 26 Lewis County municipalities. Figure 3a.11 illustrates the mapped flood risk using FEMA zone designations, which are explained in more detail below:

High Risk Areas Zones A, AE, V, and VE: These are areas with a 1% chance of being flooded in any given year (the ñ100-yearò floodplain). AE zones are those areas where the Base Flood Elevation (BFE ï the ñ100-year flood) has been determined analytically. A Zones are areas where the base floodplain has been mapped by approximate methods and the BFE has not been determined. V/VE Zones are coastal areas with a 1% annual chance of being flooded which are also susceptible to a velocity hazard (i.e. wave action). Since Lewis County has no ocean or great lakes shoreline there are no V Zones in the County.

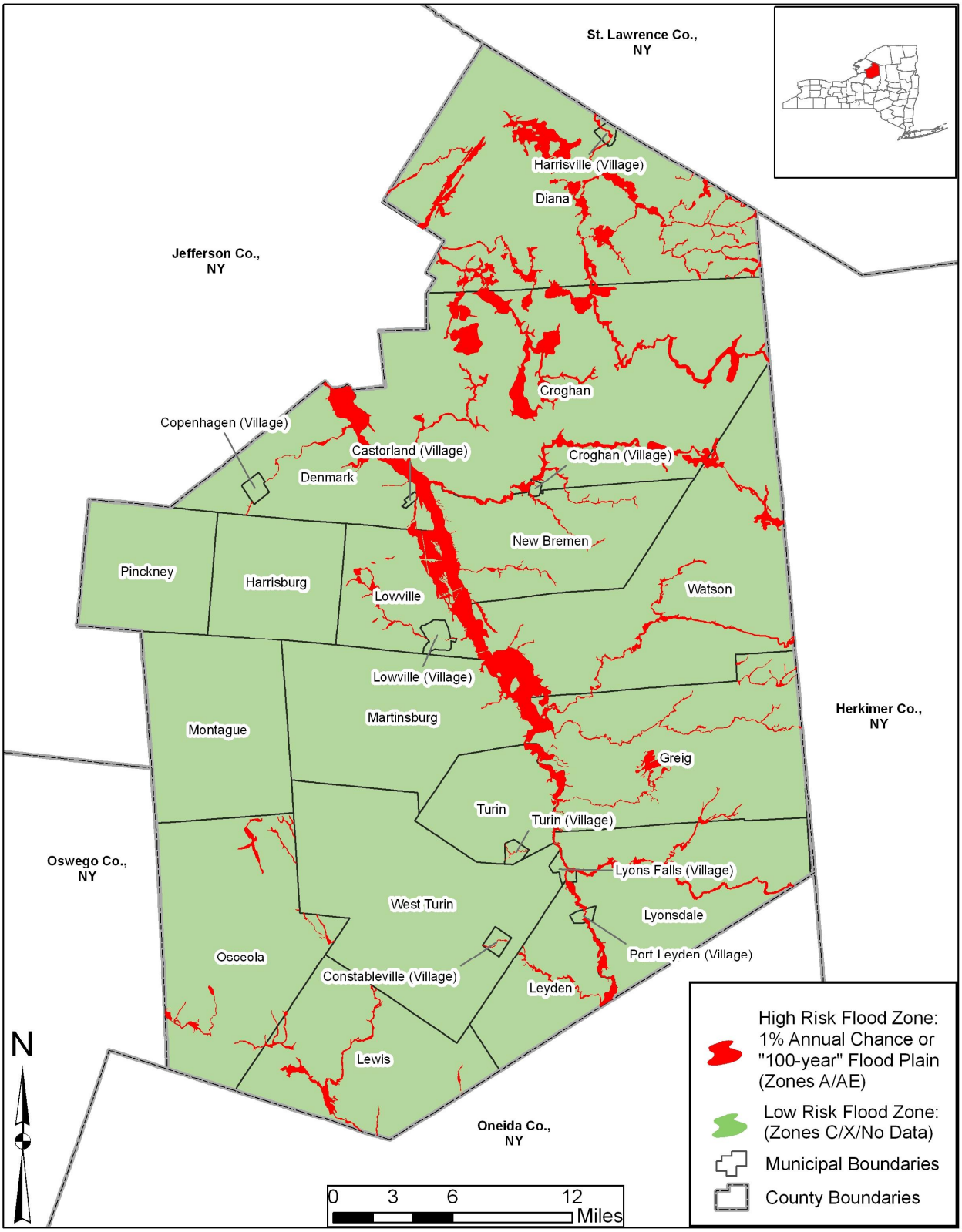
Moderate Risk Areas	Zone X500 (Zone B on older maps): These are areas lying between the ñ100-yearò and ñ500-yearò (0.2% annual chance of flooding) floodplain limits and are also known as Shaded Zone X. They also include areas of shallow flooding with average depths of less than one foot, or drainage areas less than one square mile. Since detailed mapping has not been completed for most Lewis County municipalities, only a very few small moderate risk areas in undeveloped areas have been identified. For clarity and consistency, only high risk areas have been digitized and analyzed across the County.
Low Risk Areas	Zone X (Zone C on older maps): These are areas outside of the 500-year floodplain, where the flood hazard is minimal. They may include areas of ponding or with local drainage problems not significant enough to warrant detailed study or designation as base floodplain.
Possible Risk Areas	Zone D: Areas where there are possible but undetermined flood hazards.

The digitized flood mapping created for this plan includes only Zones A and X/C, since these zones were mapped on all current hard copy FIRMs for Lewis County. The few Zone X500/B areas that were identified were negligible in size, and none of the current FIRMs included Zone D areas. As mentioned above, the digitized flood data is not exact, but while limitations in the data should be recognized, this represents the most appropriate existing information that could be obtained within the timeframe of the planning process and is generally deemed suitable for mitigation planning purposes.

The digitized flood mapping was overlaid upon the Lewis County GIS parcel mapping to identify the flood risk areas for all municipalities in Lewis County, and the collated data is presented in Table 3a.10. In the absence of size and location GIS data for individual structures, impacted improved property values were calculated by adjusting the structure values according to the percentage of the improved parcel intersected by the flood risk zone. For example, if half the area of one particular parcel overlapped with the digitized A Zone, 50% of the improved value of that parcel was taken to be at risk from the base flood. In the absence of GIS shape files mapping the exact position of structures, this approach incorporates the probability that structures can be located anywhere within their host parcel, and that more than one structure may be located on an improved parcel.

In total only 6% of the County area lies within a high flood risk zone, but this impacted area contains 21% of the improved property in the County. The Town of Lowville contains the highest portion of land area within the flood risk zone (19%) while seven other municipalities have more than 10% of their land area in the high flood risk zone. In terms of potential impact to improved property, the Town of Croghan appears to be at the greatest risk, with more than 50% of improved property in the high risk flood zone. The Town Lyonsdale has more than 30% of its improved property intersected by the high risk flood zone, and a further four municipalities have more than 10% potentially impacted.

Figure 3a.11: Lewis County Flood Hazard Areas



SOURCES: ESRI, U.S. Counties; Lewis County Department of Economic Development & Planning, Town and Village Boundaries; Flood polygons derived from FEMA FIRM maps georeferenced and digitized by URS

Table 3a.10
Areas and Improved Property Values in Approximate High Flood Risk Areas

Municipality	Total Area (Acres)	Total Improved Property Value	Area in High Flood Risk Area (Acres)	%	Improved Property in High Flood Risk Area	%
Castorland, Village of	183	$4,051,601	0	0.0%	$0	0.0%
Constableville, Village of	723	$10,939,719	43	6.0%	$470,931	4.3%
Copenhagen, Village of	*756*	*$25,876,310*	*0*	*0.0%*	$0	0.0%
Croghan, Town of	116,142	$240,302,735	14,142	12.2%	$121,818,187	50.7%
Croghan, Village of	274	$48,524,225	38	14.0%	$2,595,831	5.3%
Denmark, Town of	31,760	$43,917,282	3,475	10.9%	$2,876,564	6.5%
Diana, Town of	90,049	$29,808,074	10,251	11.4%	$4,568,841	15.3%
Greig, Town of	59,864	$46,824,943	3,536	5.9%	$9,347,578	20.0%
Harrisburg, Town of	25,455	$13,496,355	0	0.0%	$0	0.0%
Harrisville, Village of	*513*	*$12,967,001*	*75*	*14.6%*	$741,824	5.7%
Lewis, Town of	41,572	$27,190,757	1,573	3.8%	$5,915,886	21.8%
Leyden, Town of	21,234	$25,439,385	1,035	4.9%	$2,116,961	8.3%
Lowville, Town of	23,141	$28,836,993	4,367	18.9%	$1,048,111	3.6%
Lowville, Village of	1,249	$73,218,605	24	2.0%	$319,234	0.4%
Lyons Falls, Village of	657	$32,199,666	90	13.8%	$2,630,123	8.2%
Lyonsdale, Town of	43,974	$39,646,201	1,986	4.5%	$12,625,399	31.8%
Martinsburg, Town of	48,459	$2,055,970	2,820	5.8%	$189,792	9.2%
Montague, Town of	40,975	$3,726,603	0	0.0%	$0	0.0%
New Bremen, Town of	*35,738*	*$7,111,498*	*1,962*	*5.5%*	$520,232	7.3%
Osceola, Town of	56,678	$9,444,244	1,195	2.1%	$191,996	2.0%
Pinckney, Town of	26,336	$12,107,958	0	0.0%	$0	0.0%
Port Leyden, Village of	453	$11,103,000	60	13.2%	$740,014	6.7%
Turin, Town of	*19,445*	*$27,287,274*	*707*	*3.6%*	$252,898	0.9%
Turin, Village of	*658*	*$4,525,600*	*46*	*7.0%*	$430,066	9.5%
Watson, Town of	*74,818*	*$5,451,415*	*4,311*	*5.8%*	$717,798	13.2%
West Turin, Town of	64,525	$26,267,792	0	0.0%	$0	0.0%
Lewis County Totals	**825,630**	**$812,321,205**	**51,739**	**6.3%**	**$170,118,266**	**20.9%**

Note: While the five municipalities with no current FIRMs are listed as having no land or improved property within high flood risk areas, interpolation/extrapolation of the surrounding digitized A Zone boundaries suggests that some land and property may actually be at risk in these municipalities. This conjecture may be confirmed when FEMA publishes DFIRMs for the County some time in the future. Future updates of this plan should revise this section to incorporate all revised and updated flood risk mapping in Q3 or DFIRM formats.

Previous Occurrences – Floods

Floods have occurred in Lewis County communities in the past, and will continue to do so in the future. Lewis County and its component municipalities have generally been impacted by riverine flooding and shallow flooding. A picture of the flooding history of Lewis County in terms of damage to private property over the last three decades or so can be derived from the recorded flood losses and payments data from the NFIP. This data is presented in Table 3a.11, along with the total number of current policies, the total coverage values, and key dates associated with the municipalitiesô participation in the NFIP. The policy and loss data presented in Table 3a.11 is accurate as of December 31, 2009. At the time of writing, none of the municipalities in Lewis County were eligible for participation in FEMAôs Community Rating

System (CRS), under which municipalities implementing and enforcing floodplain management measures above and beyond the NFIP minimum requirements are rewarded with discounted flood insurance premiums. Table 3a.11 also includes the title or position of the person designated by each municipality to administer their floodplain management ordinance. Local floodplain administrators contributed to several aspects of the plan development process and in some cases were members of the planning committee and local Jurisdictional Assessment Teams (See Section 1).

The only municipal jurisdiction in Lewis County not currently participating in the NFIP is the Town of Montague. Montague is also the smallest jurisdiction in the County by population, with only 108 inhabitants in 45 households at the 2000 Census. The Town is high on the Tug Hill Plateau with no significant watercourses, and apart from small isolated local drainage issues there are no known flood hazards in the town. Hence while participation in the NFIP is not actively discouraged for any municipality, the Town of Montague is not expected to make joining the NFIP a high priority in this initial version of the plan.

The table shows that Lewis County NFIP insured flood losses have totaled more than $400,000 since the 1970s, or almost $11,500 per year. Actual property flood losses community-wide are likely to be higher, since this value only includes NFIP payouts and does not include losses incurred on properties the owners of which do not participate in the NFIP, losses for which a claim was not submitted, or losses for which payment on a claim was denied. FEMA records also include a further 12 flood damage claims against the NFIP in Lewis County for which no payment was made.

The average individual paid NFIP loss for the County overall was approximately $12,000 per event, with an average coverage of more than $161,000 per policy ($15.3 million in total across the County). The municipalities with the greatest number of paid losses are the Towns of Denmark and Greig. Of the 25 municipalities in the County which currently participate in the NFIP, five do not have mapped High Flood Risk Areas within their boundaries, and 11 have not experienced any flood damage resulting in NFIP payments.

Notes to accompany Table 3a.11:
* I.e. Initial Firm identified
+ Initial FHBM identified (no FIRM)
NSFHA: No Special Flood Hazard Area ï all Zone C (determined to be outside the 500-year floodplain)

Table 3a.11
FEMA NFIP Policy and Claim Information for Lewis County Jurisdictions
Source: www.fema.gov/cis/NY and www.bsa.nfipstat.com, as of 11/3/2009

NFIP Participating Communities in Lewis County, NY	Community Number	Date Entered NFIP*	Current Effective FIRM Date	Position/Title of Floodplain Administrator	NFIP Policies In Force	Insurance in Force ($)	Total Number of Paid Losses	Total Payments ($)
Castorland, Village of	360359	+3/26/1976	NSFHA	Superintendent of Public Works	0	$0	2	$20,040
Constableville, Village of	360360	5/28/1976	7/16/1982	Code Enforcement Officer	0	$0	0	$0
Copenhagen, Village of	*360361*	*+5/10/1974*	*NSFHA*	*Village Mayor*	*0*	*$0*	*0*	*$0*
Croghan, Town of	360362	7/25/1975	5/15/1985	Town Supervisor	15	$2,170,000	1	$3,442
Croghan, Village of	361068	5/31/1974	5/15/1985	Village Mayor	5	$783,200	0	$0
Denmark, Town of	360363	6/28/1974	5/15/1985	Zoning Officer	9	$1,572,900	7	$93,750
Diana, Town of	360364	9/13/1974	9/24/1984	Deputy Supervisor	13	$1,625,800	3	$17,106
Greig, Town of	360365	6/28/1974	5/15/1985	Code Enforcement Officer	15	$1,394,300	6	$34,877
Harrisburg, Town of	360366	+8/30/1974	NSFHA	Town Supervisor	0	$0	0	$0
Harrisville, Village of	*351451*	*11/15/1974*	*9/24/1984*	*Floodplain Administrator*	*0*	*$0*	*0*	*$0*
Lewis, Town of	360368	6/28/1974	9/29/1996	Town Supervisor	7	$2,116,200	2	$56,394
Leyden, Town of	360369	7/19/1974	6/19/1985	Code Enforcement Officer	2	$411,000	4	$12,385
Lowville, Town of	361558	1/31/1975	6/20/2000	Code Enforcement Officer	8	$790,000	0	$0
Lowville, Village of	360370	6/28/1974	6/20/2000	Code Enforcement Officer	0	$0	1	$3,945
Lyons Falls, Village of	361065	11/1/1974	6/19/1985	Village Mayor	0	$0	1	$82,721
Lyonsdale, Town of	360371	6/19/1985	6/19/1985	Building Inspector	3	$1,257,600	0	$0
Martinsburg, Town of	360372	6/28/1974	6/19/1985	Town Supervisor	5	$703,600	0	$0
Montague, Town of	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
New Bremen, Town of	*360373*	*11/1/1974*	*5/4/2000*	*Zoning Officer*	*5*	*$799,700*	*0*	*$0*
Osceola, Town of	360374	8/16/1974	6/30/1976	Code Enforcement Officer	0	$0	0	$0
Pinckney, Town of	360375	+9/6/1974	NSFHA	Town Supervisor	0	$0	0	$0
Port Leyden, Village of	361064	7/11/1975	6/19/1985	Village Mayor	1	$50,000	2	$3,835
Turin, Town of	*360376*	*6/7/1974*	*8/2/1994*	*Code Enforcement Officer*	*2*	*$88,000*	*1*	*$26,603*
Turin, Village of	*361355*	*11/29/1974*	*7/1/1977*	*Code Enforcement Officer*	*0*	*$0*	*0*	*$0*
Watson, Town of	*360377*	*11/1/1974*	*7/19/2000*	*Code Enforcement Officer*	*8*	*$995,600*	*4*	*$45,599*
West Turin, Town of	360378	+9/13/1974	NSFHA	Code Enforcement Officer	0	$0	0	$0
Lewis County Totals					**98**	**$14,757,900**	**34**	**$400,697**

Repetitive Losses

FEMA defines a Repetitive Loss (RL) property as any insurable building for which two or more claims of more than $1,000 were paid by the NFIP within any rolling 10-year period, since 1978. A repetitive loss property may or may not be currently insured by the NFIP. Currently there are over 122,000 repetitive loss properties nationwide and approximately 7,000 in New York State.

According to FEMAôs repetitive loss property records, there were three ñnon-mitigatedò repetitive loss properties located in Lewis County as of February 28, 2009. These properties are associated with a total of 6 individual losses and more than $54,000 in claims payments under the NFIP since September 1978 (the earliest recorded date of loss).

The distribution of RL properties throughout the County is presented in Figure 3a.12, while the approximate locations of individual RL properties are plotted in Figures 3a.13 and 3a.14. Data for RL properties supplied by FEMA included one additional property in the Town of Leyden which is recorded as having been already mitigated to minimize further losses. Of the three recorded unmitigated RL properties, two are single family residential structures and one is non-residential. More details regarding these properties are presented in Table 3a.12.

More specific data regarding the exact locations of these structures is subject to the 1974 Privacy Act. This legislation prohibits the public release of any information regarding individual NFIP claims or information which may lead to the identification of associated individual addresses and property owners. However, while this information is not available to the general public, municipal authorities may obtain comprehensive RL property data directly from FEMA Region 2 for the purposes of targeted mitigation of RL areas or individual RL structures, on the condition that all such data is treated as strictly confidential and the required privacy procedures are strictly followed.

Table 3a.12
NFIP Repetitive Loss Properties in Lewis County
(Source: FEMA Region 2)

Municipality		Property Type	Flood Hazard Zone	Paid Losses	Total Paid Losses	Average Paid Loss
Castorland	Village	Non-Residential	A	2	$20,040	$10,020
Denmark	Town	Single-Family Residential	A	2	$9,539	$4,770
Greig	Town	Single-Family Residential	C	2	$24,718	$12,359
Totals				*6*	*$54,298*	*$9,050*

None of the three identified Repetitive Loss Properties in Lewis County have been identified as ñSevereò Repetitive Loss Properties, where a Severe RLP is defined by FEMA as a residential property

(a) That has at least four NFIP claim payments (including building and contents) over $5,000 each, and the cumulative amount of such claims payments exceeds $20,000; or

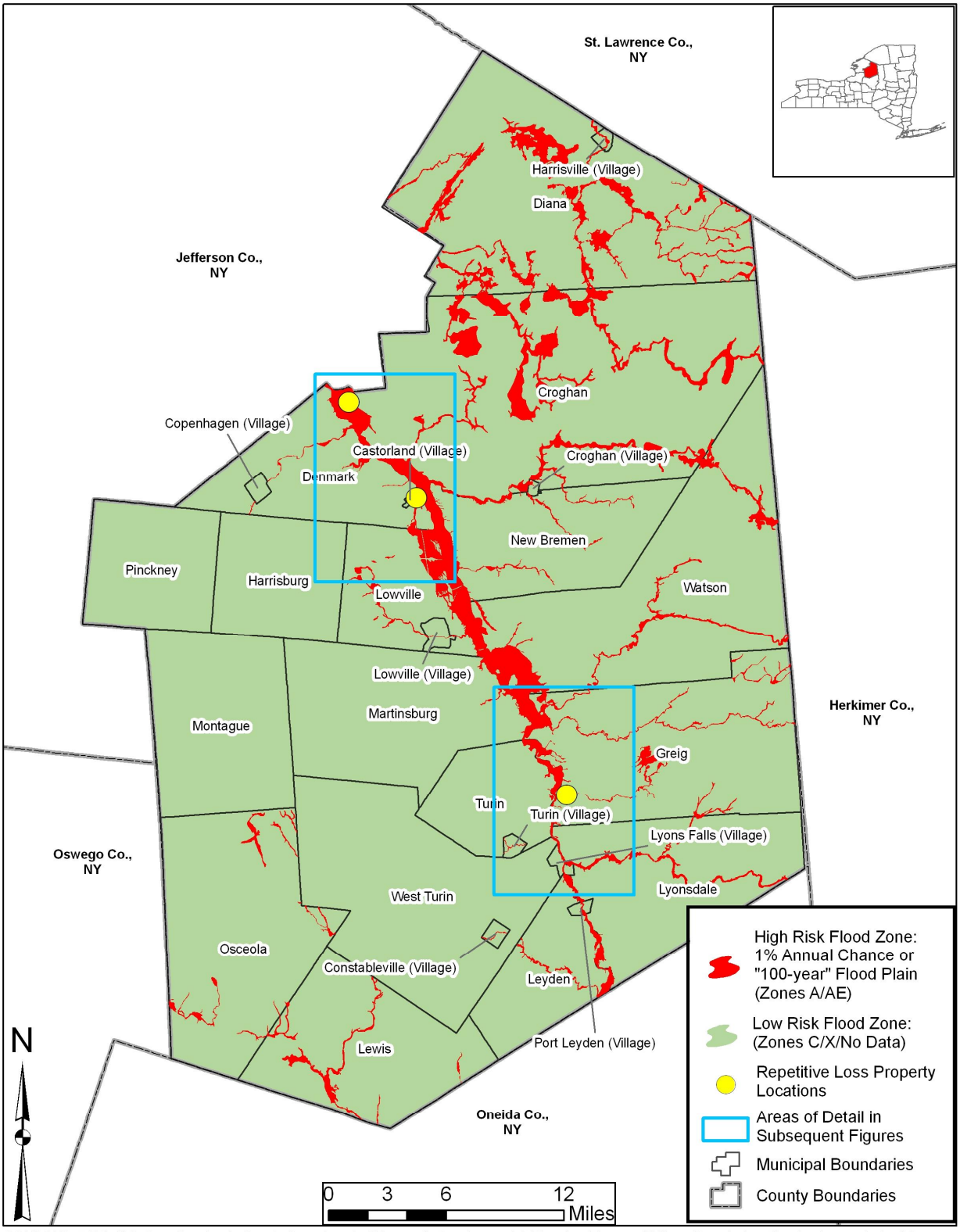
(b) For which at least two separate claims payments (building payments only) have been made with the cumulative amount of the building portion of such claims exceeding the market value of the building.

For both (a) and (b) above, at least two of the referenced claims must have occurred within any ten-year period, and must be greater than 10 days apart.

The repetitive loss properties in Lewis County have each experienced 2 loss events, with an average paid claim of just over $9,000 for each event. To summarize the analysis of Repetitive Loss Properties, the data suggests that 13% of all the NFIP payments in Lewis County may be attributable to just 1.5% of insured properties in the County (depending on how many of these properties remain insured by the NFIP).

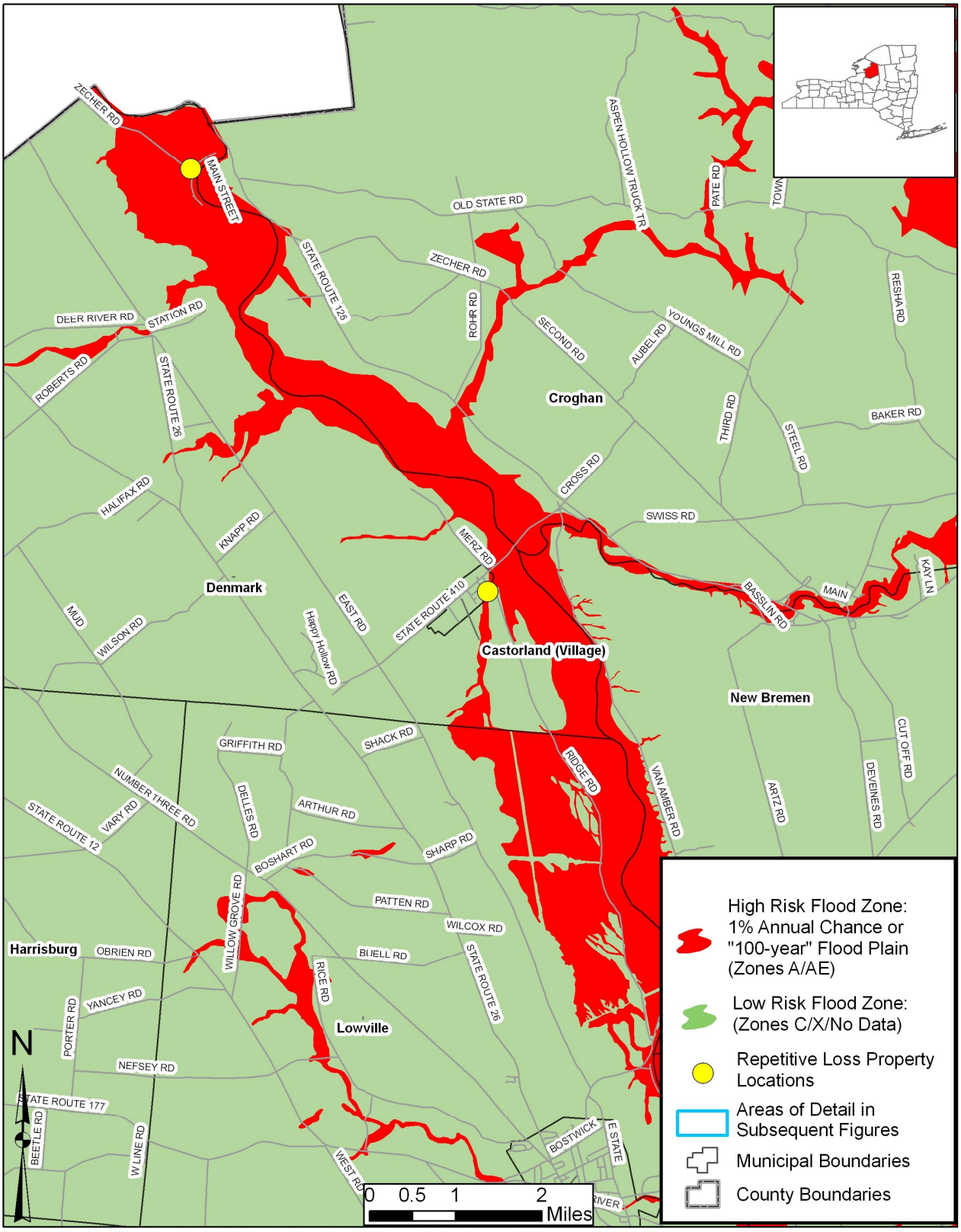
Figures 3a.13 and 3a.14 are intended to illustrate the general extent of areas in which RL properties are particularly concentrated, to act as pointers to areas where flooding of structures may be the most severe. It is possible that in these areas there also exist other properties that suffer significantly from flooding but, for a variety of possible reasons do not meet RL criteria or have not participated in the NFIP, and which may also benefit from mitigation actions.

Figure 3a.12: Lewis County NFIP Repetitive Loss Properties



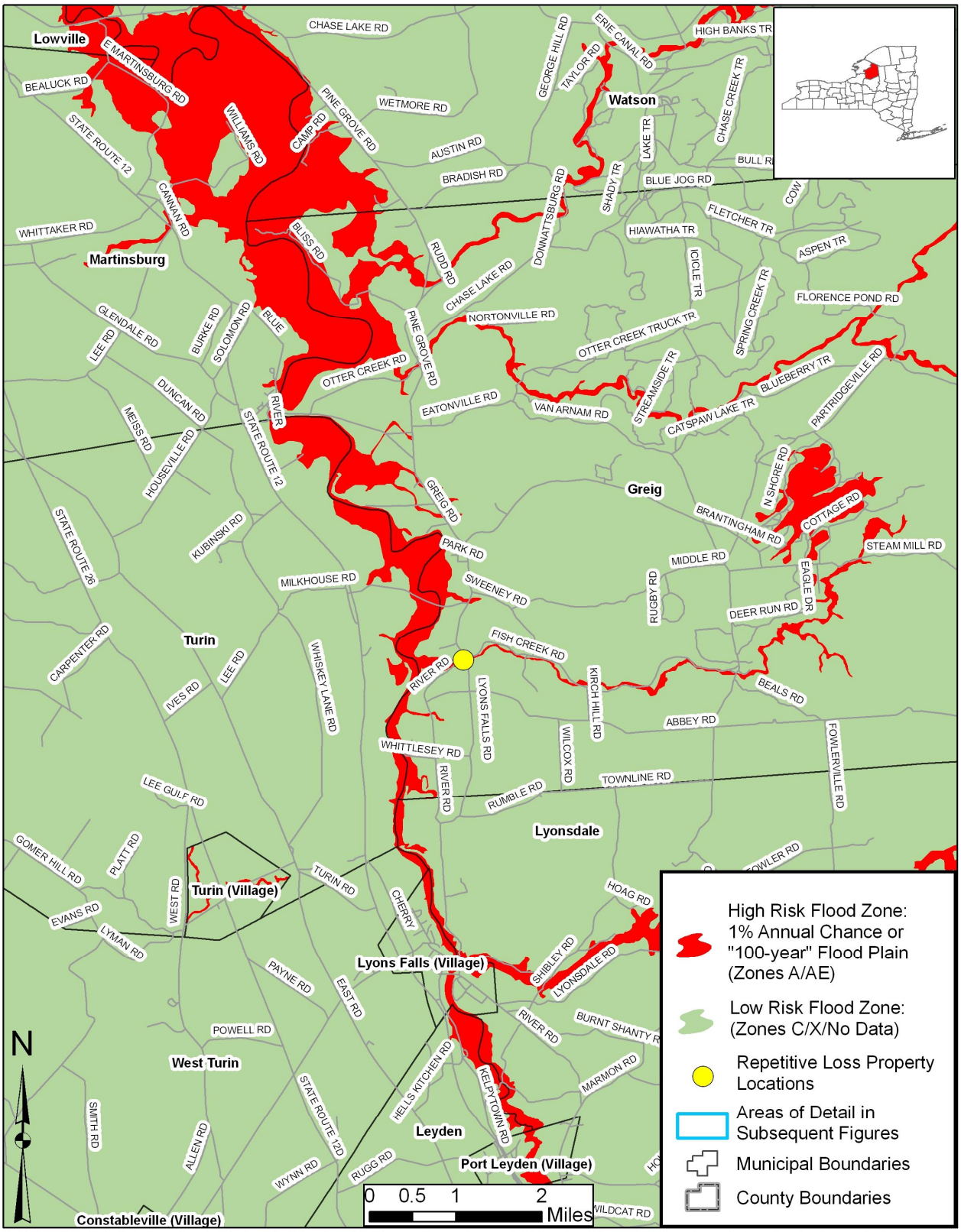
SOURCES: ESRI, U.S. Counties; Lewis County Department of Economic Development & Planning, Town and Village Boundaries; Flood polygons derived from FEMA FIRM maps georeferenced and digitized by URS

Figure 3a.13: NFIP Repetitive Loss Property Location ï Town of Denmark/Village of Castorland



SOURCES: ESRI, U.S. Counties; Lewis County Department of Economic Development & Planning, Town and Village Boundaries; Flood polygons derived from FEMA FIRM maps georeferenced and digitized by URS

Figure 3a.14: NFIP Repetitive Loss Property Location ï Town of Greig



SOURCES: ESRI, U.S. Counties; Lewis County Department of Economic Development & Planning, Town and Village Boundaries; Flood polygons derived from FEMA FIRM maps georeferenced and digitized by URS

Flood Disaster and Emergency Declarations

The New York State Emergency Management Office reports Lewis County as having been affected by four Presidential Disaster Declarations related to flooding from 1953 to March 2009. Lewis County is not listed by FEMA or the New York State Office of Emergency Management as having been affected by any Emergency Declarations involving flooding over the same period.

Through the Public Assistance (PA) Program, FEMA provides supplemental Federal disaster grant assistance for debris removal, emergency protective measures, and the repair, replacement, or restoration of disaster-damaged, publicly owned facilities and the facilities of certain Private Non-Profit (PNP) organizations. The Individual Assistance Program (IA) provides money or direct assistance to individuals, families and businesses in an area whose property has been damaged or destroyed and whose losses are not covered by insurance. It is meant to assist with critical expenses that cannot be covered in other ways, rather than to restore damaged property to its condition before the disaster.

Table 3a.13
Major Flood Disaster Declarations Affecting Lewis County
(Source: NYSEMO)

Disaster #	Description	Declared Date (and Incident Period)	Eligible Assistance for Lewis County
DR-1335	Storms and Flooding	7/21/2000 (5/3/2000 ï 8/12/2000)	PA
DR-1148	Storms and Flooding	12/9/1996 (11/8/1996 ï 11/15/1996)	PA
DR-1095	Flooding of January 1996	1/24/1996 (1/19/1996 ï 1/30/1996)	PA
DR-0733	Flooding ï Northern NY	3/21/1985 (period not recorded)	PA

The NCDC database records flood events in Lewis County from April 1994 (when detailed NCDC records begin in this area) to December 2008, and there have been 21 significant recorded flood events affecting the County in this period, causing reported damages totaling more than $4.2 million, including some damages incurred outside Lewis County. Table 3a.14 presents selected significant flood events recorded for the County in the NCDC database for which some detailed information was available, supplemented with information from Flood Insurance Studies for individual municipalities and information from local sources.

Table 3a.14
Selected Recent Flood Events in Lewis County
(Source: NOAA NCDC / FISs/ Local sources)

Date	Areas Affected	Description	Reported Damage*
9/25/1975	South Black River Valley	Almost five inches of rain fell on the region over a three-day period. Roads were closed due to flooding in the Black River Valley in the Towns of Leyden, Lyonsdale, Greig, and Martinsburg	Not recorded
12/1984	Lewis, Jefferson, and neighboring Counties	Heavy precipitation combined with unseasonably warm temperatures and rapidly melting snow. Flood damage to roads, bridges, and property exceeded $5 million across several counties in the area.	$5,000,000
4/16/1994	Countywide	Spring rains and snowmelt combined to raise the Black River above flood stage in Lewis and Jefferson Counties.	$5,000

Table 3a.14
Selected Recent Flood Events in Lewis County
(Source: NOAA NCDC / FISs/ Local sources)

Date	Areas Affected	Description	Reported Damage*
		Several roads were closed, but most flooding occurred over agricultural land.	
10/22/1995	Central Lewis County	Heavy rains fell across the Eastern Lake Ontario Counties causing the Black and Moose Rivers to overflow their banks. There was also some road and lowland flooding along the flats area of the Black River in central Lewis County.	$35,000
1/22/1996	Countywide	Rapid snowmelt of two to three feet of snow combined with heavy rainfall to produce significant flooding on area creeks and streams and the Black River. Damage (primarily to roads and bridges) in Lewis County was estimated at $213,000 by local officials. Lewis County became eligible for FEMA Public Assistance funds under federal disaster declaration DR-1095.	$213,000
4/23/1996	Castorland	Persistent rains of two to three inches fell on already saturated ground, resulting in urban and small stream flooding. Many roads were closed throughout the area.	$8,000
11/9/1996	West Turin, Watson, New Bremen	A slow moving system brought heavy rains to the area. Up to 4.5 inches of rain fell in 24 hours causing flooding along the Black River. Portions of roads were washed out in West Turin, Watson, and New Bremen.	$25,000
7/18/1997	Croghan	Thunderstorms developed ahead of a strong cold front and brought high winds and heavy rain to the region, resulting in minor urban flooding.	$8,000
1/8/1998	Countywide	One to two inches of rain fell on saturated ground across all of the North Country and eastern Lake Ontario counties. Lewis County government declared a state of emergency as floodwaters approached record levels. Hundreds of residents along the Black River Valley were evacuated by emergency services, and power outages were also reported. Up to 1,000 cattle were also removed from farms between Lowville and Castorland. Sandbag walls were constructed to prevent homes being flooded in Lyons Falls, many basements were flooded in Copenhagen, and a small dam on the east branch of the Mohawk River in West Leyden was partially washed out.	$50,000
3/30/1998	Castorland	Unseasonably warm weather resulted in rapid melt of the snowpack on the Tug Hill plateau. The snowmelt combined with additional rainfall caused the Black River to rise over its banks and flood lowland areas around Castorland.	$50,000
1/23/1999	Lyonsdale	Warm temperatures melted the snowpack from record snowfall in late December and early January. Nearly two feet of ripe snowpack dissolved to just a few inches remaining. The runoff caused flooding in poor drainage and low lying regions across the area with roads closed in some locations for a couple of days. Flooding was reported in Lewis County along the Moose River due to a massive jam.	$460,000

Table 3a.14
Selected Recent Flood Events in Lewis County
(Source: NOAA NCDC / FISs/ Local sources)

Date	Areas Affected	Description	Reported Damage*
5/10/2000	Lowville	Thunderstorms rolled in off the Great Lakes producing large hail and damaging winds. In addition, the thunderstorms produced localized heavy rains which resulted in poor drainage flooding. Two to four inches of rain fell on Lowville, forcing the closure of some roads.	$15,000
4/13/2001	Lowville, Greig	Melting snow from spring thaws caused the Black River to exceed flood stage for 81 hours. Several roads were closed in Lowville and Grieg.	$50,000
6/22/2001	Lowville	Thunderstorms produced damaging winds which downed power lines in Alexandria Bay, Jefferson County. The strong storms also produced downpours of one to two inches per hour across Lewis County. Some areas received over four inches of rain in less than three hours. In Lowville, street flooding occurred and roads were closed by the flood waters.	$22,000
9/25/2001	Lowville, Martinsburg, Lyons Falls	Thunderstorms with heavy downpours during the evening hours of the 24th and the early morning hours of the 25th dropped over six inches of rain over parts of Lewis County. The heavy rains produced flash flooding in Lyons Falls, Martinsburg, and Lowville during the morning of the 25th. Several roads were closed or washed out by the flood waters.	$33,000
4/15/2002	Martinsburg	Runoff from heavy rains and snowmelt caused the Black River to rise to bankfull condition. In Lewis County, agricultural lands were flooded in Martinsburg. Reported damages included $10,000 in property damage and $15,000 in crop damage.	$25,000
8/5/2003	Turin	Thunderstorms during the late morning and early afternoon hours produced downburst winds to 60 mph. The thunderstorms were accompanied by heavy rains of up to three inches which resulted in roads flooded and closed in Turin.	$25,000
8/12/2003	New Bremen	Thunderstorms dropped heavy rain onto already saturated ground. In the Town of New Bremen, the flash flood waters washed out the road at the intersection of Number Four Road and Erie Canal Road.	$100,000
4/2/2005	Lowville	Deep low pressure over Pennsylvania brought copious amounts of precipitation to western and central New York. Rainfalls totals generally ranged from two to three inches. The rain, combined with snowmelt, produced flooding. Roads were closed in Lowville. Reported damages across the region totaled more than $600,000.	$600,000
7/14/2005	Turin	Thunderstorms developed in an unseasonably hot and humid airmass during the late afternoon and early evening hours. In Turin, the flood waters washed out a portion of Fish Creek Road.	$25,000
7/18/2005	Constableville	Slow moving thunderstorms produced heavy rains that flooded roads and basements in the Constableville Area.	$10,000

*May include damage incurred outside Lewis County

Probability of Occurrence – Floods

The probability of occurrence of a flood at a given location (the odds of being flooded) is expressed in percentages as the chance of a flood of a specific magnitude occurring in any given year. The so-called ñ100-year floodò has a 1% chance of occurring in any given year. The 100-year flood is often also referred to as the ñbase floodò. This probability of occurrence might imply that a 100-year flood would reoccur only once every 100 years; in reality, this is not the case. A 100-year flood can happen multiple times in a single year, or not at all for more than 100 years. Properties located in FEMA-mapped A Zones are within the footprint of the 100-year floodplain. FEMA A-Zones represent the 100-year floodplain.

For all floodplains, there is an associated water surface elevation. This elevation is unique to any given location on the map (in other words, 100-year flood levels vary from one community to the next throughout Lewis County, and also within individual communities). While A Zones have been mapped and digitized for the 20 municipalities as per Table 3a.10, base flood elevations have only been estimated and included on FIRMs for the Village of Lowville and parts of the Towns of Lewis, Lowville, New Bremen, and Watson.

Within the 100-year floodplain, flooding can occur at less than the 100-year flood level, and also more than the 100-year flood level. The 100-year flood represents a flood of high magnitude ï it is a deep and widespread event. The 500-year flood is of a greater magnitude, and would be deeper and more widespread than a 100-year event. However, it is not as likely to occur. Smaller floods, with magnitudes of 10-years or 50-years for example, are also possible within the 100-year floodplain. These are not as deep or as widespread as a 100-year flood would be, however, they are much more likely to occur.

The term ñ100-year floodò can often be confusing to someone not intimately familiar with flooding or statistics. FEMAôs *NFIP Floodplain Management Requirements: a Study Guide and Desk Reference for Local Officials* (FEMA-480), suggests that another way to look at flood risk is to think of the odds that a 100-year flood will happen some time during the life of a 30-year mortgage of a home in the floodplain. Figure 3a.15 illustrates these odds, over various time periods for different size floods. In any given year, a property in the 100-year floodplain has a 10 percent chance of being flooded by a 10-year flood, and a 1 percent chance of being flooded by a 100-year flood. This may not sound particularly risky at first glance. However, over a 30ï year period, that same location has a 96 percent chance of being flooded by a 10-year flood and a 26 percent chance of being flooded by a 100-year flood.

Figure 3a.15: Odds of Being Flooded

WHAT ARE THE ODDS OF BEING FLOODED?

The term "100-year flood" has caused much confusion for people not familiar with statistics. Another way to look at flood risk is to think of the odds that a 100-year flood will happen sometime during the life of a 30-year mortgage—a 26% chance for a structure located in the SFHA.

Chance of Flooding over a Period of Years

Time Period	Flood Size 10-year	25-year	50-year	100-year
1 year	10%	4%	2%	1%
10 years	65%	34%	18%	10%
20 years	88%	56%	33%	18%
30 years	96%	71%	45%	26%
50 years	99%	87%	64%	39%

Even these numbers do not convey the true flood risk because they focus on the larger, less frequent, floods. If a house is low enough, it may be subject to the 10- or 25-year flood. During a 30-year mortgage, it may have a 26% chance of being hit by the 100-year flood, but the odds are 96% (nearly guaranteed) that it will be hit by a 10-year flood. Compare those odds to the only 1-2% chance that the house will catch fire during the same 30-year mortgage.

Ice Jams

Description

Ice jams form when ice floating downstream in a river stalls and begins to build into a jam, forming a dam. The ñreservoirò behind the dam quickly fills with water until out-of-bank flooding occurs. The observed effect can be very similar to flash flooding, and sudden flooding downstream may be caused by the sudden failure or release of the ice jam. Ice jams generally form at locations where the ice transport downstream is reduced by an obstruction or a significant hydrologic change. Natural obstructions in the river can include bends, intact sheet ice cover, or a decrease in channel slope. Man-made obstructions can include bridges, existing dams, waterline crossings, and other constructions in the channel.

Ice jams and resulting floods can occur during fall freeze-up from the formation of frazil ice (a collection of loose, randomly oriented needle-shaped ice crystals) during midwinter periods when stream channels freeze solid forming anchor ice, and during spring breakup when rising water levels from snowmelt or rainfall break existing ice cover into large floating masses that lodge at bridges or other constructions. Damage from ice jam flooding may exceed that caused by open water flooding ï flood elevations are usually higher than predicted for free-flow conditions and water levels may change rapidly. During cold weather, there is a reduction in evapotranspiration, infiltration (due to frozen ground) and surface storage, (due to the filling of ground depressions with snow and ice), which result in more water being delivered to the channel. Therefore, for equal amounts of total available water during cold and warm seasons, the amount of excess water available for runoff will be greater during the cold season. Additional damage may be caused by the force of floating ice colliding with buildings, other structures, and automobiles.

Location – and Extent: Ice Jams

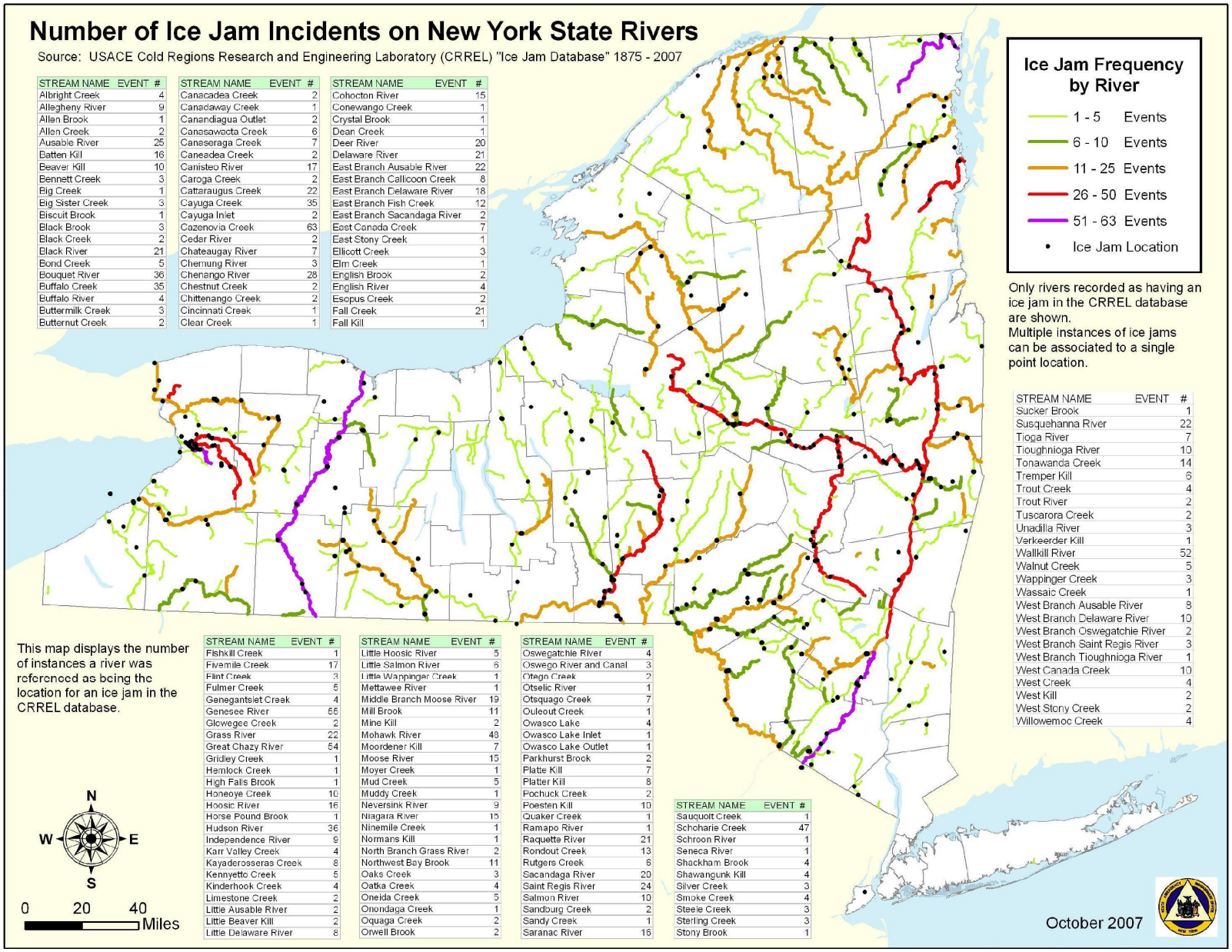
The identification of particular areas prone to ice jam flooding is difficult since the hazard can be extremely localized. However, available research and historic data suggests that ice jam flood hazard is most common in areas of flat terrain where the climate included extended periods of temperature below zero. Ice jams are very common in the northeast United States, and according to data from the U.S. Army Corps of Engineers Cold Region Research and Engineering Laboratory (USACE CRREL), 1,442 ice jam events have been recorded in New York State between 1867 and 2008, a number exceeded only by the State of Montana.

Figure 3a.16 shows the locations of ice jam incidents that have been recorded by the CRREL in New York State from 1875 to 2007. Multiple instances of ice jams may be associated with a single point location. This figure identifies at least seven locations in Lewis County where ice jams have been recorded.

Previous Occurrences – Ice Jams

The USACE CRREL ice jam database records limited details for 31 ice jams that have occurred in Lewis County since the 1920s. Entries for Lewis County ice jams include the dates, locations, and watercourses affected, but do not include descriptions of any flooding that resulted. A summary of ice jam occurrences in Lewis County extracted form the CRREL database is presented in Table 3a.15.

Figure 3a.16: Ice Jam Incidents in New York State



STREAM NAME	EVENT #
Albright Creek	4
Allegheny River	9
Allen Brook	1
Allen Creek	2
Ausable River	25
Batten Kill	16
Beaver Kill	10
Bennett Creek	3
Big Creek	1
Big Sister Creek	3
Biscuit Brook	1
Black Brook	3
Black Creek	2
Black River	21
Bond Creek	5
Bouquet River	36
Buffalo Creek	35
Buffalo River	4
Buttermilk Creek	3
Butternut Creek	2

STREAM NAME	EVENT #
Canacadea Creek	2
Canadaway Creek	1
Canandiagua Outlet	2
Canasawacta Creek	6
Canaseraga Creek	7
Caneadea Creek	2
Canisteo River	17
Caroga Creek	2
Cattaraugus Creek	22
Cayuga Creek	35
Cayuga Inlet	2
Cazenovia Creek	63
Cedar River	2
Chateaugay River	7
Chemung River	3
Chenango River	28
Chestnut Creek	2
Chittenango Creek	2
Cincinnati Creek	1
Clear Creek	1

STREAM NAME	EVENT #
Cohocton River	15
Conewango Creek	1
Crystal Brook	1
Dean Creek	1
Deer River	20
Delaware River	21
East Branch Ausable River	22
East Branch Callicoon Creek	8
East Branch Delaware River	18
East Branch Fish Creek	12
East Branch Sacandaga River	2
East Canada Creek	7
East Stony Creek	1
Ellicott Creek	3
Elm Creek	1
English Brook	2
English River	4
Escpus Creek	2
Fall Creek	21
Fall Kill	1

STREAM NAME	EVENT #
Sucker Brook	1
Susquehanna River	22
Tioga River	7
Tioughnioga River	10
Tonawanda Creek	14
Tremper Kill	6
Trout Creek	4
Trout River	2
Tuscarora Creek	2
Unadilla River	3
Verkeerder Kill	1
Wallkill River	52
Walnut Creek	5
Wappinger Creek	3
Wassaic Creek	1
West Branch Ausable River	8
West Branch Delaware River	10
West Branch Oswegatchie River	2
West Branch Saint Regis River	3
West Branch Tioughnioga River	1
West Canada Creek	10
West Creek	4
West Kill	2
West Stony Creek	2
Willowemoc Creek	4

STREAM NAME	EVENT #
Fishkill Creek	1
Fivemile Creek	17
Flint Creek	3
Fulmer Creek	5
Genegantslet Creek	4
Genesee River	55
Glowegee Creek	2
Grass River	22
Great Chazy River	54
Gridley Creek	1
Hemlock Creek	1
High Falls Brook	1
Honeoye Creek	10
Hoosic River	16
Horse Pound Brook	1
Hudson River	36
Independence River	9
Karr Valley Creek	4
Kayaderosseras Creek	8
Kennyetto Creek	5
Kinderhook Creek	4
Limestone Creek	2
Little Ausable River	2
Little Beaver Kill	2
Little Delaware River	8

STREAM NAME	EVENT #
Little Hoosic River	5
Little Salmon River	6
Little Wappinger Creek	1
Mettawee River	1
Middle Branch Moose River	19
Mill Brook	11
Mine Kill	2
Mohawk River	48
Moordener Kill	7
Moose River	15
Moyer Creek	1
Mud Creek	5
Muddy Creek	1
Neversink River	9
Niagara River	15
Ninemile Creek	1
Normans Kill	1
North Branch Grass River	2
Northwest Bay Brook	11
Oaks Creek	3
Oatka Creek	4
Oneida Creek	5
Onondaga Creek	1
Oquaga Creek	2
Orwell Brook	2

STREAM NAME	EVENT #
Oswegatchie River	4
Oswego River and Canal	3
Otego Creek	2
Otselic River	1
Otsquago Creek	7
Ouleout Creek	1
Owasco Lake	4
Owasco Lake Inlet	1
Owasco Lake Outlet	1
Parkhurst Brook	2
Platte Kill	7
Platter Kill	8
Pochuck Creek	2
Poesten Kill	10
Quaker Creek	1
Ramapo River	1
Raquette River	21
Rondout Creek	13
Rutgers Creek	6
Sacandaga River	20
Saint Regis River	24
Salmon River	10
Sandburg Creek	2
Sandy Creek	1
Saranac River	16

STREAM NAME	EVENT #
Sauquoit Creek	1
Schoharie Creek	47
Schroon River	1
Seneca River	1
Shackham Brook	4
Shawangunk Kill	4
Silver Creek	3
Smoke Creek	4
Steele Creek	3
Sterling Creek	3
Stony Brook	1

Table 3a.15
Ice Jam Occurrences in Lewis County
(Source: USACE CRREL Database)

Date	Watercourse	Location	Municipality
2/24/1925	East Branch Fish Creek	Constableville	West Turin
4/22/1926	East Branch Fish Creek	Constableville	West Turin
3/19/1927	East Branch Fish Creek	Constableville	West Turin
4/6/1928	East Branch Fish Creek	Constableville	West Turin
1/19/1929	East Branch Fish Creek	Constableville	West Turin
1/8/1930	East Branch Fish Creek	Constableville	West Turin
12/13/1931	East Branch Fish Creek	Constableville	West Turin
4/2/1933	Deer River	Copenhagen	Copenhagen
12/1/1933	Independence River	Sperryville	Watson
1/1/1934	Deer River	Copenhagen	Copenhagen
3/12/1936	Deer River	Copenhagen	Copenhagen
2/7/1938	Deer River	Copenhagen	Copenhagen
12/24/1941	Deer River	Copenhagen	Copenhagen
1/2/1943	Independence River	Donnattsburg	Watson
1/6/1946	Deer River	Copenhagen	Copenhagen
1/31/1947	Deer River	Copenhagen	Copenhagen
3/19/1948	Deer River	Copenhagen	Copenhagen
1/1/1952	Deer River	Copenhagen	Copenhagen
1/16/1953	Deer River	Copenhagen	Copenhagen
2/16/1954	Deer River	Copenhagen	Copenhagen
2/18/1954	Independence River	Donnattsburg	Watson
1/23/1957	Deer River	Deer River	Denmark
1/24/1957	Independence River	Donnattsburg	Watson
1/25/1959	Independence River	Donnattsburg	Watson
2/11/1960	Deer River	Deer River	Denmark
1/10/1978	Independence River	Donnattsburg	Watson
1/17/1979	Independence River	Donnattsburg	Watson
1/23/1979	Independence River	Donnattsburg	Watson
2/22/1981	Independence River	Donnattsburg	Watson
1/19/1996	Black River	Castorland	Denmark

In addition to the incidents listed by the CRREL database, one of the flooding incident descriptions from the NCDC database mentions that ñflooding was reported in Lewis County along the Moose River [in the Town of Lyonsdale] due to a massive jamò around the 23rd to 28th of January 1999. No further details or descriptions of damage have been found. Local sources in the Village of Lowville also report that areas of the village adjacent to Mill Creek have suffered flooding due to ice jams.

Probability of Occurrence – Ice Jams

Due to the nature of the terrain and the climate in Lewis County, ice jam events are essentially certain to occur in the future, although whether or not such events will cause significant damage is less easy to predict, since detailed records of actual damage caused by ice jams are scarce. The available data also does not easily allow for a robust average number of occurrences per year or estimated damages to be computed. Based on the known occurrences detailed above, a simplistic determination of annual occurrence would suggest that an ice jam occurs in Lewis County approximately once every 2.5 years.

Earthquakes

Description – Earthquakes

FEMA defines the term ñearthquakeò as a sudden, rapid shaking of the earth caused by the breaking and shifting of rock beneath the earthôs surface. This movement of vast sections of the earthôs surface (known as tectonic plates) forces the gradual buildup and accumulation of energy. Eventually, strain becomes so great that the energy is abruptly released, causing the shaking at the earthôs surface which we know as an earthquake. According to the USGS Earthquake Hazards Program, most earthquakes (approximately 90%) occur at the boundaries where the plates meet, although it is possible for earthquakes to occur entirely within plates. Lewis County is significantly distant from any plate boundaries. Regardless of where they are centered, earthquakes can impact locations at ï and well beyond ï their point of origin. They are often accompanied by ñaftershocksò ï secondary quakes in the earthquake sequence. Aftershocks are typically smaller than the main shock, and can continue over a period of weeks, months, or years from the main shock. In addition to the effects of ground shaking, earthquakes can also cause landslides and liquefaction under certain conditions. Liquefaction occurs when unconsolidated, saturated soils exhibit fluid-like properties due to intense shaking and vibrations experienced during an earthquake. Together, ground shaking, landslides, and liquefaction can damage or destroy buildings, disrupt utilities (i.e., gas, electric, phone, water), and sometimes trigger fires.

Location and Extent– Earthquakes

Earthquakes are possible within any of Lewis Countyôs communities. Figures 3a.17 and 3a 18 show the earthquake hazard maps for the conterminous United States and also New York State, which are prepared by the USGS Earthquake Hazards Program. They show that the earthquake hazard in New York State is low relative to some other parts of the country (for example, the west coast of the USA), but the possibility for noticeable earthquakes does exist in the State.

Figure 3a.17: Earthquake Hazard Map of the Conterminous United States

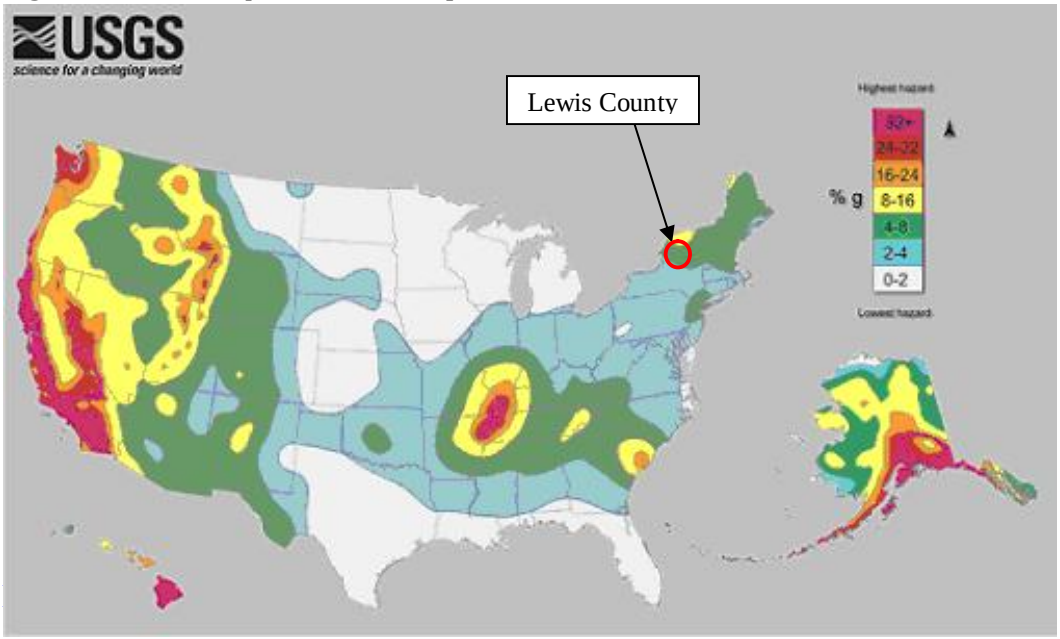
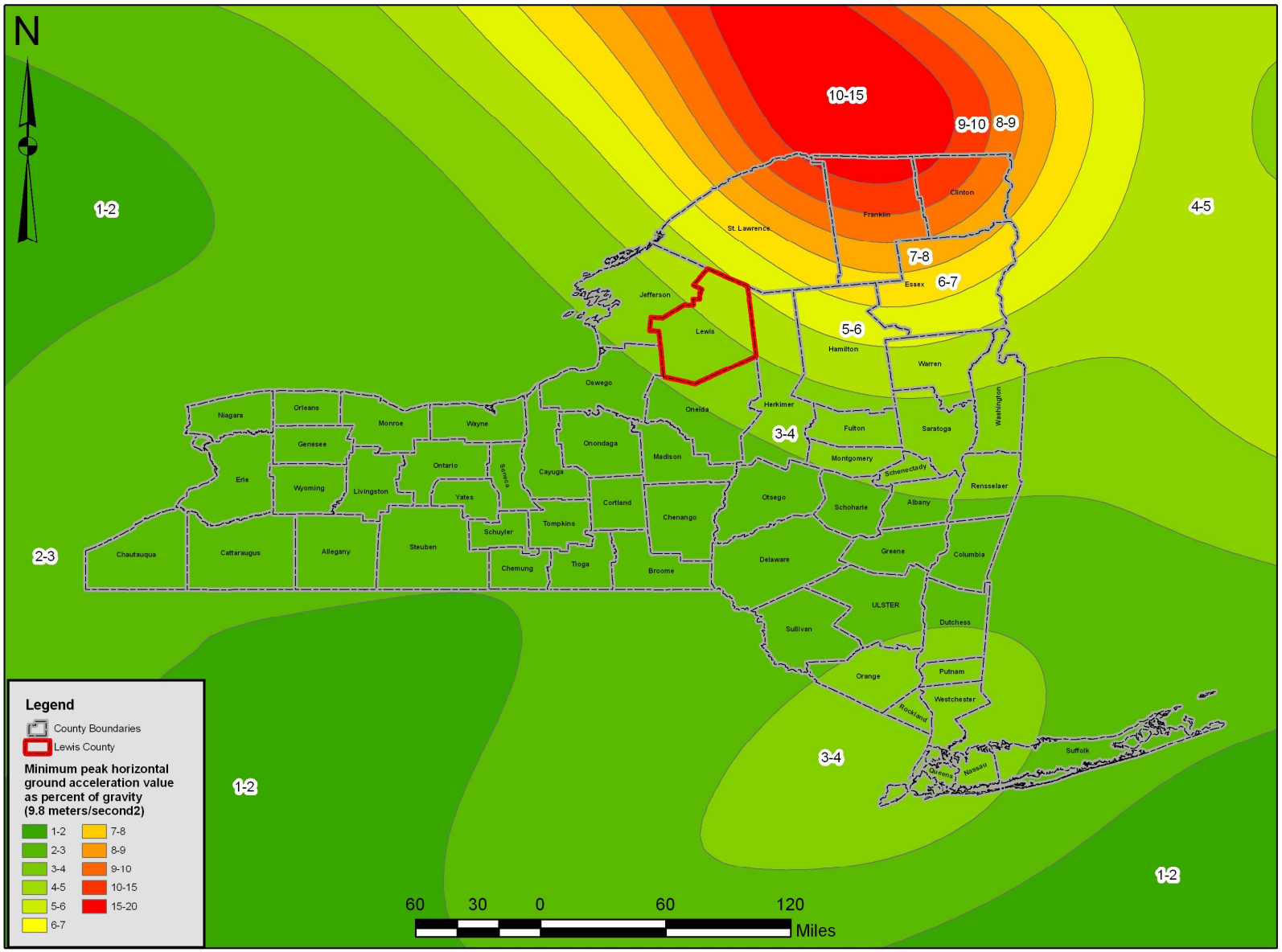


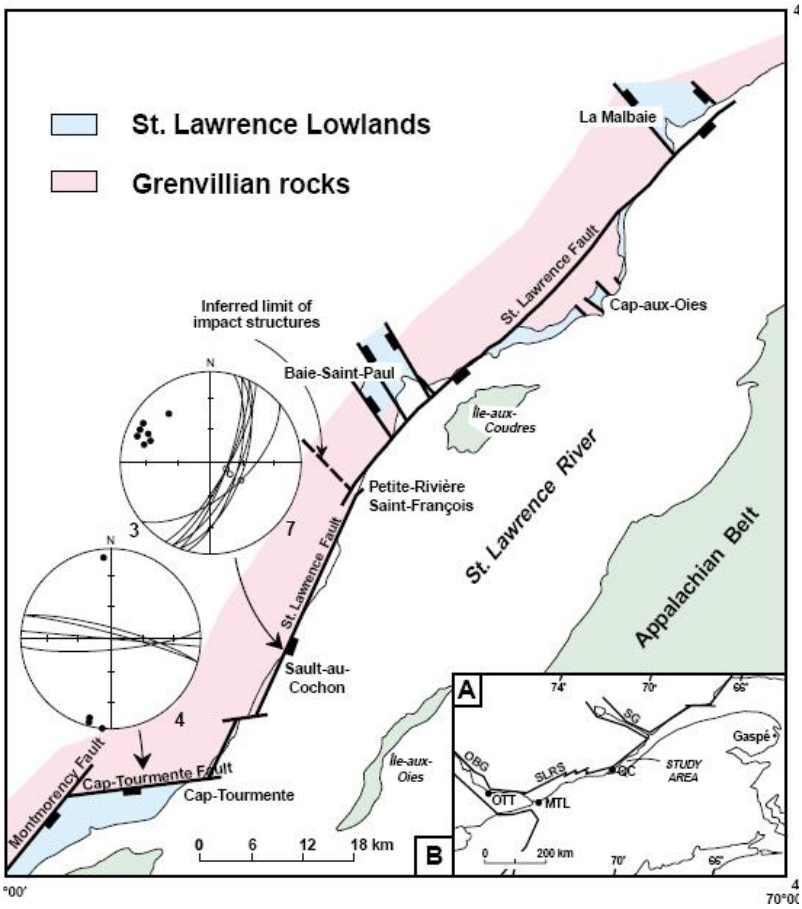
Figure 3a.18: Earthquake Hazard Map of New York State



Source: U.S.G.S. National Seismic Hazard Maps. 2008; ESRI, US Counties, 2005.

Of particular interest to this hazard mitigation plan is the St. Lawrence Rift System, which has been mapped from northern New York State into Canada and beyond. These faults were particularly active during the Late Proterozoic-Early Paleozoic periods. These faults are attributed to the opening of the Iapetus Ocean, the precursor of the Atlantic Ocean. The rift system runs parallel to the St. Lawrence River for approximately 620 miles. The epicenters of earthquakes recorded between 1627 and 2003 have generally tended to be clustered around rift zone.

Figure 3a.19: The St Lawrence Rift Zone



The severity of an earthquake at a given location depends on the amount of energy released at the epicenter, the depth of the epicenter, and the affected locationôs distance from the epicenter. The terms ñmagnitudeò and ñintensityò are two terms used to describe the severity of an earthquake. An earthquakeôs ñmagnitudeò is a measurement of the total amount of energy released while its ñintensityò is a measure of the effects of an earthquake at a particular place. Another way to express an earthquakeôs severity is to compare its acceleration to the normal acceleration due to gravity. Peak Ground Acceleration (PGA) measures the rate of change in motion of the earthôs surface and expresses it as a percent of the established rate of acceleration due to gravity (9.8 m/sec^2). Figure 3a.19 shows that, for the northeastern third of Lewis County, PGA values of between 4 and 5% of gravity have a 10 percent chance of being exceeded over 50 years. A small and essentially uninhabited area at the northeastern tip of the County has a slightly higher exposure to earthquake risk (see Figure 3a.20), but generally the remainder of Lewis County has a slightly lesser degree of exposure to the earthquake hazard.

An approximate relationship between PGA, magnitude, and intensity is shown in Table 3a.16. Using Table 3a.23 one can approximate that for an earthquake of expected severity for Lewis County and its participating jurisdictions (PGA values of 3 to 5%g), perceived shaking would be light to moderate (depending upon the distance from the epicenter) and potential damage could range from none to very light (also depending upon the distance from the epicenter).

Table 3a.16
Earthquake Magnitude/Intensity Comparison

PGA	Magnitude	Intensity	Perceived Shaking	Potential Damage
< 0.17	1.0 - 3.0	I	Not Felt	None
0.17 ï 1.4	3.0 ï 3.9	II - III	Weak	None
1.4 – 9.2	**4.0 – 4.9**	**IV – V**	**IV. Light** **V. Moderate**	**IV. None** **V. Very Light**
9.2 - 34	5.0 ï 5.9	VI ï VII	VI. Strong VII. Very Strong	VI. Light VII. Moderate
34 - 124	6.0 ï 6.9	VIII - IX	VIII. Severe IX. Violent	VIII. Moderate/Heavy IX. Heavy
> 124	7.0 and higher	X and higher	Extreme	Very Heavy

Sources: (1) FEMA Mitigation Planning "How-To" Guide 386-2 (as reported in the New York State Hazard Mitigation Plan 2005; (2) Wald, D., et al., 1999, Relationship between Peak Ground Acceleration, Peak Ground Motion, and Modified Mercalli Intensity in California", Earthquake Spectra, V. 15, p. 557-564; (3) Community Internet Intensity, USGS Modified Mercalli Intensity, and Instrumental Intensity. 1999. http://www-socal.wr.usgs.gov/ciim/pubs/ciim/node5.html (July 27, 2003).

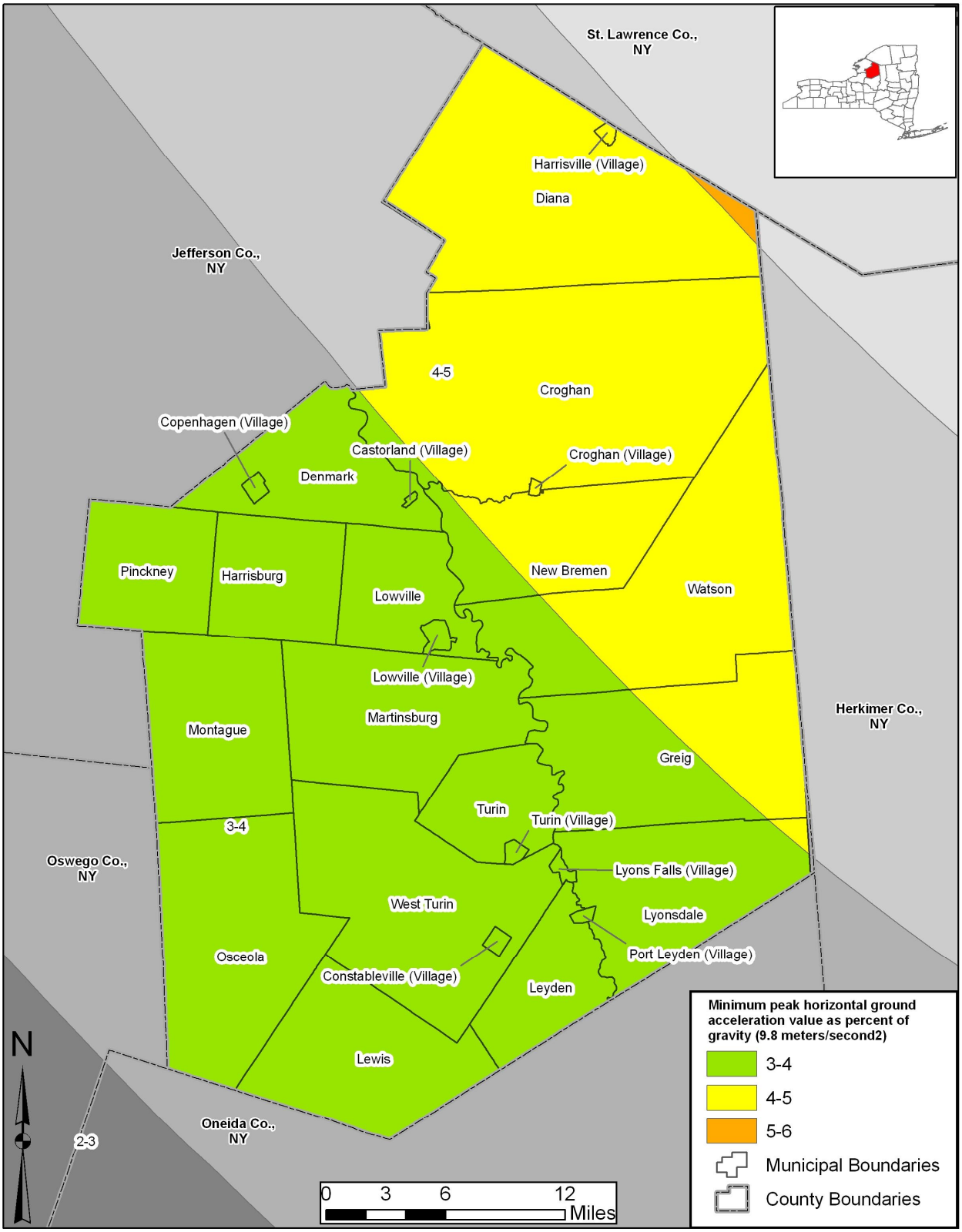
An earthquake with a 10 percent chance of exceedance over 50 years in Lewis County would have a PGA of 3 to 5%g and an intensity ranging from only IV to V, which would result in light to moderate perceived shaking, and damages ranging from none to very light. For comparison purposes, an earthquake of intensity IV on the Modified Mercalli Scale would most likely cause vibrations similar to heavy trucks driving over roads, or the sensation of a jolt. Hanging objects would swing; standing cars would rock; windows, dishes and doors would rattle; and, in the upper ranges of intensity IV, wooden walls and frames would creak. An earthquake of intensity V on the Modified Mercalli Scale would be felt outdoors, awaken sleepers, disturb or spill liquids, displace small unstable objects, swing doors, and cause shutters and pictures to move.

As noted in the New York State Hazard Mitigation Plan, soil type can have an impact on the severity of an earthquake at a given location. For example, soft soils (i.e., fill, sand) are more likely to amplify ground motion during an earthquake. Liquefaction is also more likely to occur in areas of soft soils. In contrast, harder soils (i.e., granite) tend to reduce ground motion during an earthquake. Figure 3a.21 shows soil types in five basic categories with varying degrees of likelihood of amplifying the affects of an earthquake, with Category A being far less likely to amplify the seismic motion than Category E. The soil types and surficial materials have been combined with the baselines seismic hazards by NYSEMO/NYSGS in Figure 3a.22 (taken from the State Hazard Mitigation Plan) to provide an adjusted, more refined picture of the earthquake hazard in terms of earthquake spectral acceleration, which is a better indicator of damage to buildings. While PGA (Peak Ground Acceleration) is what is experienced by a particle on the ground, SA (Spectral Acceleration) is an approximation of what is experienced by a building, as modeled by a particle on a massless vertical rod having the same natural period of vibration as the building, according to the USGS definition.

In some areas of the state this combined analysis results in a significantly higher earthquake hazard than is evident from the simple USGS mapping of baseline seismic risk in Figure 3a.18. Table 3a.17 presents the areas of earthquake hazard risk in each municipality by the adjusted spectral acceleration (SA) with a 2% probability of occurrence in 50 years. Table 3a.18 presents the values of improved property within those hazard areas for each municipality. For clarity and conciseness Tables 3a.18 and 3a.18 have omitted the acreages and improved values in areas of the two lowest risk hazard bands included in Figure 3a.22.

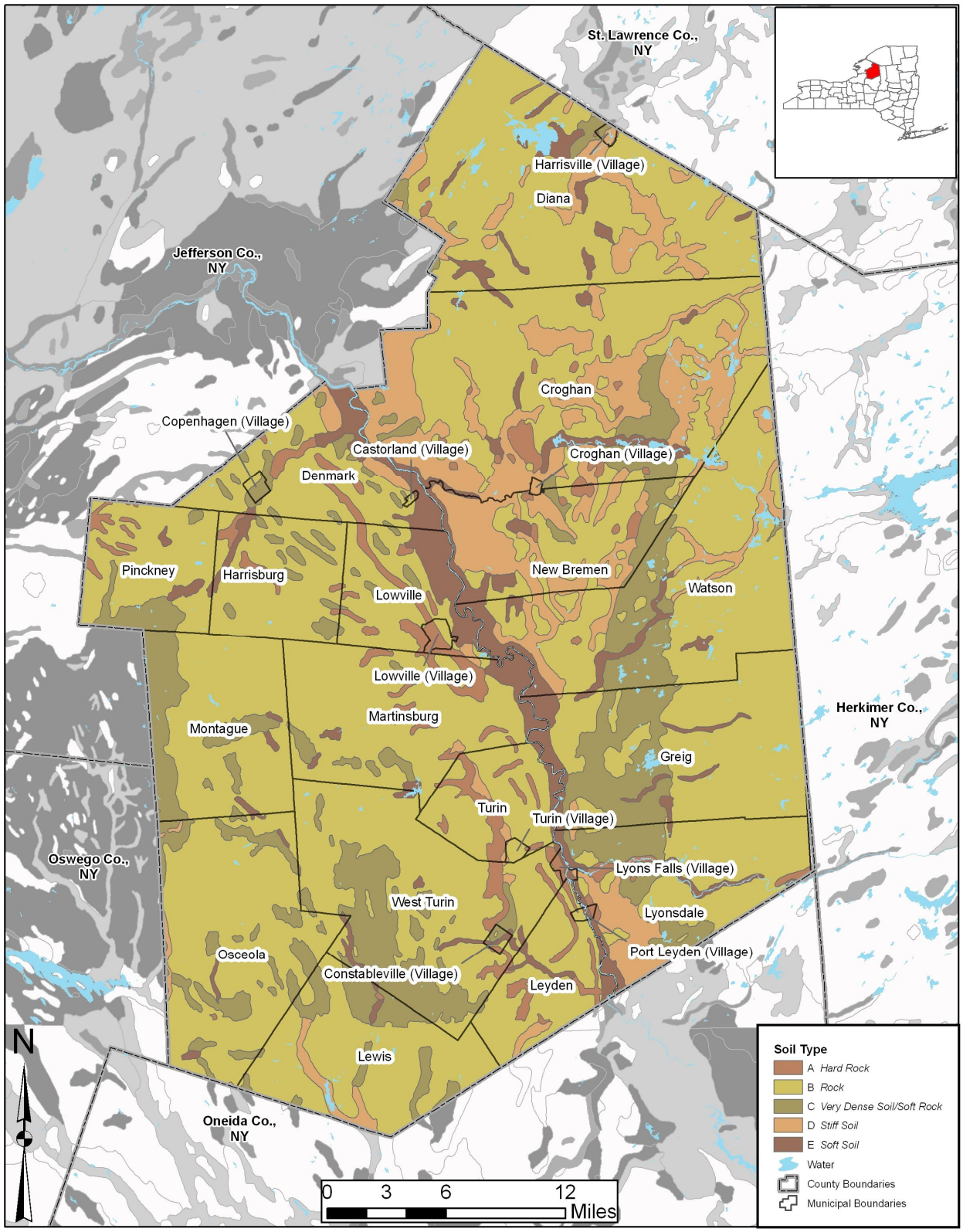
Figure 3a.22 shows that the areas in Lewis County with the highest earthquake risk (in terms of adjusted SA) are generally located along the valleys of the Black River and its main tributaries, especially to the east. Table 3a.18 also shows that only the Towns of Croghan and Diana have improved property values located in the areas of highest adjusted SA values, with nine and 23 percent of their improved property values located in areas of adjusted SA 75 to 95% of gravity respectively. All except six of the 26 municipalities in the County have some improved property located in the second highest adjusted SA band (65 to 75% of gravity), with the Villages of Castorland and Lyons Falls having the highest proportions, at 38 and 48 percent respectively. Overall, 13% of the improved property in the County is estimated to be located within the three highest adjusted SA bands mapped in Figure 3a.22, and 50% of all improved property in the County is located in the two lowest risk bands from Figure 3a.22.

Figure 3a.20: Lewis County Earthquake Hazard Zones



SOURCES: ESRI, U.S. Counties, 2005; Lewis County Department of Economic Development & Planning, Town and Village Boundaries; USGS, National Seismic Hazard Maps, 2008

Figure 3a.21: Lewis County Geological Soil Classification



SOURCES: ESRI, U.S. Counties, 2005; Lewis County Department of Economic Development & Planning, Town and Village Boundaries; U.S. Census Bureau, Herkimer, Oswego, Oneida, Lewis, Jefferson, St. Lawrence Counties, Area Hydrography, 2007; NYS Geological Survey, NEHRP Soil Class Data

Figure 3a.22: Lewis County Earthquake Hazard: Combined Seismic Risk/Soils Type

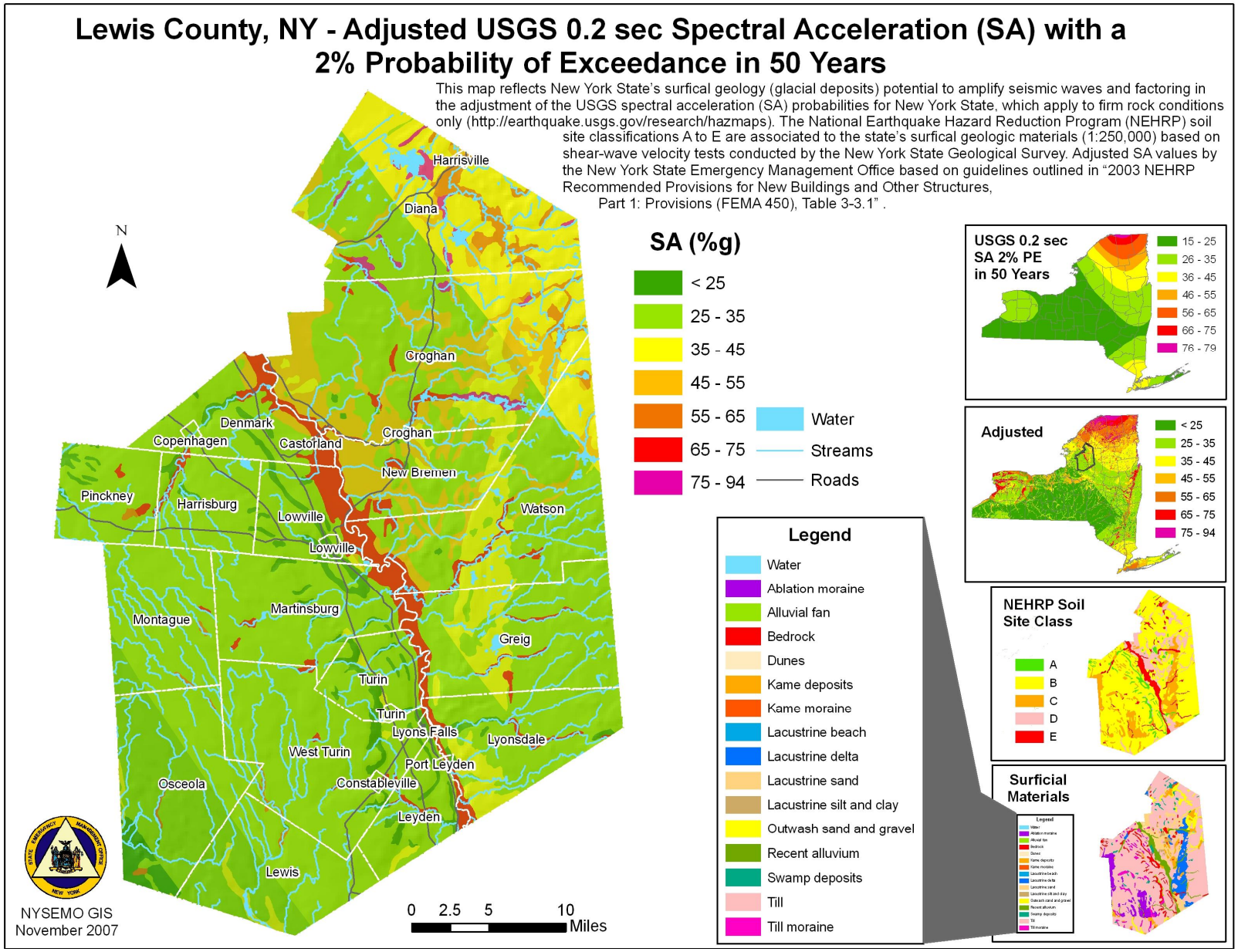


Table 3a.17
Lewis County Earthquake Hazard: Adjusted USGS 0.2 Sec Spectral Acceleration With a 2% Probability of Exceedance over 50 Years - Acreages
Source: NYSEMO/NYS Geological Survey

Municipality	Total Acres	SA (%g) 35-45		SA (%g) 45-55		SA (%g) 55-65		SA (%g) 65-75		SA (%g) 75-94	
		Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
Castorland, Village of	183	0	0%	0	0%	0	0%	49	27%	0	0%
Constableville, Village of	723	0	0%	0	0%	0	0%	201	28%	0	0%
Copenhagen, Village of	*756*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*
Croghan, Town of	116,142	25,967	22%	36,910	32%	2,522	2%	3,354	3%	2,463	2%
Croghan, Village of	274	12	4%	255	93%	0	0%	0	0%	0	0%
Denmark, Town of	31,760	0	0%	2,065	7%	0	0%	5,311	17%	0	0%
Diana, Town of	90,049	46,061	51%	5,166	6%	7,416	8%	347	0%	4,521	5%
Greig, Town of	59,864	10,956	18%	61	0%	0	0%	4,587	8%	0	0%
Harrisburg, Town of	25,455	0	0%	0	0%	0	0%	1,082	4%	0	0%
Harrisville, Village of	*513*	*18*	*4%*	*181*	*35%*	*303*	*59%*	*0*	*0%*	*0*	*0%*
Lewis, Town of	41,572	2,631	6%	0	0%	350	1%	0	0%	0	0%
Leyden, Town of	21,234	688	3%	0	0%	0	0%	1,607	8%	0	0%
Lowville, Town of	23,141	165	1%	93	0%	0	0%	5,297	23%	0	0%
Lowville, Village of	1,249	0	0%	0	0%	0	0%	28	2%	0	0%
Lyons Falls, Village of	657	54	8%	0	0%	0	0%	282	43%	0	0%
Lyonsdale, Town of	43,974	7,421	17%	0	0%	0	0%	3,131	7%	0	0%
Martinsburg, Town of	48,459	290	1%	37	0%	0	0%	3,537	7%	0	0%
Montague, Town of	40,975	13	0%	0	0%	476	1%	131	0%	0	0%
New Bremen, Town of	*35,738*	*3,715*	*10%*	*14,773*	*41%*	*0*	*0%*	*2,911*	*8%*	*0*	*0%*
Osceola, Town of	56,678	834	1%	0	0%	793	1%	0	0%	0	0%
Pinckney, Town of	26,336	0	0%	0	0%	320	1%	620	2%	0	0%
Port Leyden, Village of	453	1	0%	0	0%	0	0%	131	29%	0	0%
Turin, Town of	*19,445*	*764*	*4%*	*0*	*0%*	*0*	*0%*	*1,024*	*5%*	*0*	*0%*
Turin, Village of	*658*	*42*	*6%*	*0*	*0%*	*0*	*0%*	*0*	*0%*	*0*	*0%*
Watson, Town of	*74,818*	*18,731*	*25%*	*8,205*	*11%*	*460*	*1%*	*5,710*	*8%*	*0*	*0%*
West Turin, Town of	64,525	190	0%	0	0%	591	1%	1,131	2%	0	0%
County Totals	**825,630**	**118,554**	**14%**	**67,746**	**8%**	**13,230**	**2%**	**40,469**	**5%**	**6,984**	**1%**

Table 3a.18
Lewis County Earthquake Hazard: Adjusted UGS 0.2 Sec Spectral Acceleration With a 2% Probability of Exceedance over 50 Years – Improved Values
Source: NYSEMO/NYS Geological Survey

Municipality	Total Improved Property Value	SA (%g) 35-45		SA (%g) 45-55		SA (%g) 55-65		SA (%g) 65-75		SA (%g) 75-94	
		Improved Value	%	Improved Value	%	Improved Value	%	Improved Value	%	Improved Value	%
Castorland, Village of	$4,051,601	$0	0%	$0	0%	$0	0%	$1,559,671	38%	$0	0%
Constableville, Village of	$10,939,719	$0	0%	$0	0%	$0	0%	$2,297,539	21%	$0	0%
Copenhagen, Village of	*$25,876,310*	*$0*	*0%*	*$0*	*0%*	*$0*	*0%*	*$0*	*0%*	*$0*	*0%*
Croghan, Town of	$240,302,735	$6,450,970	3%	$155,815,032	65%	$605,557	0%	$15,564,298	6%	$21,384,278	9%
Croghan, Village of	$48,524,225	$275,721	1%	$48,247,782	99%	$0	0%	$0	0%	$0	0%
Denmark, Town of	$43,917,282	$0	0%	$3,449,262	8%	$0	0%	$6,535,943	15%	$0	0%
Diana, Town of	$29,808,074	$13,010,007	44%	$3,452,828	12%	$3,775,581	13%	$146,120	0%	$6,937,527	23%
Greig, Town of	$46,824,943	$32,744,514	70%	$83,380	0%	$0	0%	$3,288,739	7%	$0	0%
Harrisburg, Town of	$13,496,355	$0	0%	$0	0%	$0	0%	$333,452	2%	$0	0%
Harrisville, Village of	*$12,967,001*	*$335,942*	*3%*	*$4,375,261*	*34%*	*$8,100,924*	*62%*	*$0*	*0%*	*$0*	*0%*
Lewis, Town of	$27,190,757	$9,789,444	36%	$0	0%	$13,155	0%	$0	0%	$0	0%
Leyden, Town of	$25,439,385	$522,573	2%	$0	0%	$0	0%	$2,387,819	9%	$0	0%
Lowville, Town of	$28,836,993	$248,439	1%	$43,812	0%	$0	0%	$4,702,617	16%	$0	0%
Lowville, Village of	$73,218,605	$0	0%	$0	0%	$0	0%	$266,641	0%	$0	0%
Lyons Falls, Village of	$32,199,666	$8,892,442	28%	$0	0%	$0	0%	$15,440,961	48%	$0	0%
Lyonsdale, Town of	$39,646,201	$4,345,819	11%	$0	0%	$0	0%	$7,484,661	19%	$0	0%
Martinsburg, Town of	$2,055,970	$12,756	1%	$1,499	0%	$0	0%	$189,879	9%	$0	0%
Montague, Town of	$3,726,603	$423	0%	$0	0%	$0	0%	$5,324	0%	$0	0%
New Bremen, Town of	*$7,111,498*	*$383,852*	*5%*	*$4,389,924*	*62%*	*$0*	*0%*	*$468,107*	*7%*	*$0*	*0%*
Osceola, Town of	$9,444,244	$119,168	1%	$0	0%	$219,937	2%	$0	0%	$0	0%
Pinckney, Town of	$12,107,958	$0	0%	$0	0%	$24,082	0%	$47,578	0%	$0	0%
Port Leyden, Village of	$11,103,000	$23,282	0%	$0	0%	$0	0%	$2,111,142	19%	$0	0%
Turin, Town of	*$27,287,274*	*$2,297,837*	*8%*	*$0*	*0%*	*$0*	*0%*	*$229,578*	*1%*	*$0*	*0%*
Turin, Village of	*$4,525,600*	*$287,187*	*6%*	*$0*	*0%*	*$0*	*0%*	*$0*	*0%*	*$0*	*0%*
Watson, Town of	*$5,451,415*	*$1,013,720*	*19%*	*$1,086,379*	*20%*	*$0*	*0%*	*$1,214,604*	*22%*	*$0*	*0%*
West Turin, Town of	$26,267,792	$456,898	2%	$0	0%	$103,166	0%	$612,298	2%	$0	0%
County Totals	**$812,321,205**	**$81,210,997**	**10%**	**$220,945,158**	**27%**	**$12,842,403**	**2%**	**$64,886,970**	**8%**	**$28,321,805**	**3%**

Previous Occurrences - Earthquakes

As noted in the New York State Mitigation Plan, although the probability of damaging earthquakes in New York State is low, earthquakes do occur on a regular basis in New York. Figure 3a.23 illustrates the location of earthquake epicenters in New York, as obtained from the New York State Hazard Mitigation Plan, for earthquakes that occurred between 1737 and May 1986. Table 3a.19 presents details for earthquakes recorded in New York State since 1737 that were recorded in the 2006 NYS statistical yearbook. The list records three significant seismic events in the vicinity of Lewis County (in bold in Table 3a.26): The first was an event of reported magnitude 4.7 ï 5.0 (depending on the source) centered in the adjacent St. Lawrence County in December 1867, and the second was an earthquake of Intensity VI in the vicinity of Blue Mountain Lake in the Adirondack Park Preserve in October 1983, approximately 60 miles east of Lewis County. Light damage occurred in several towns in the region. The most common effects include cracked chimneys, broken dishes and glassware, overturned/falling objects. Although only causing minor damage, it was felt over 12 states and 2 provinces in Canada.

Figure 3a.23: Significant Earthquake Epicenters in New York State (1737-1986)

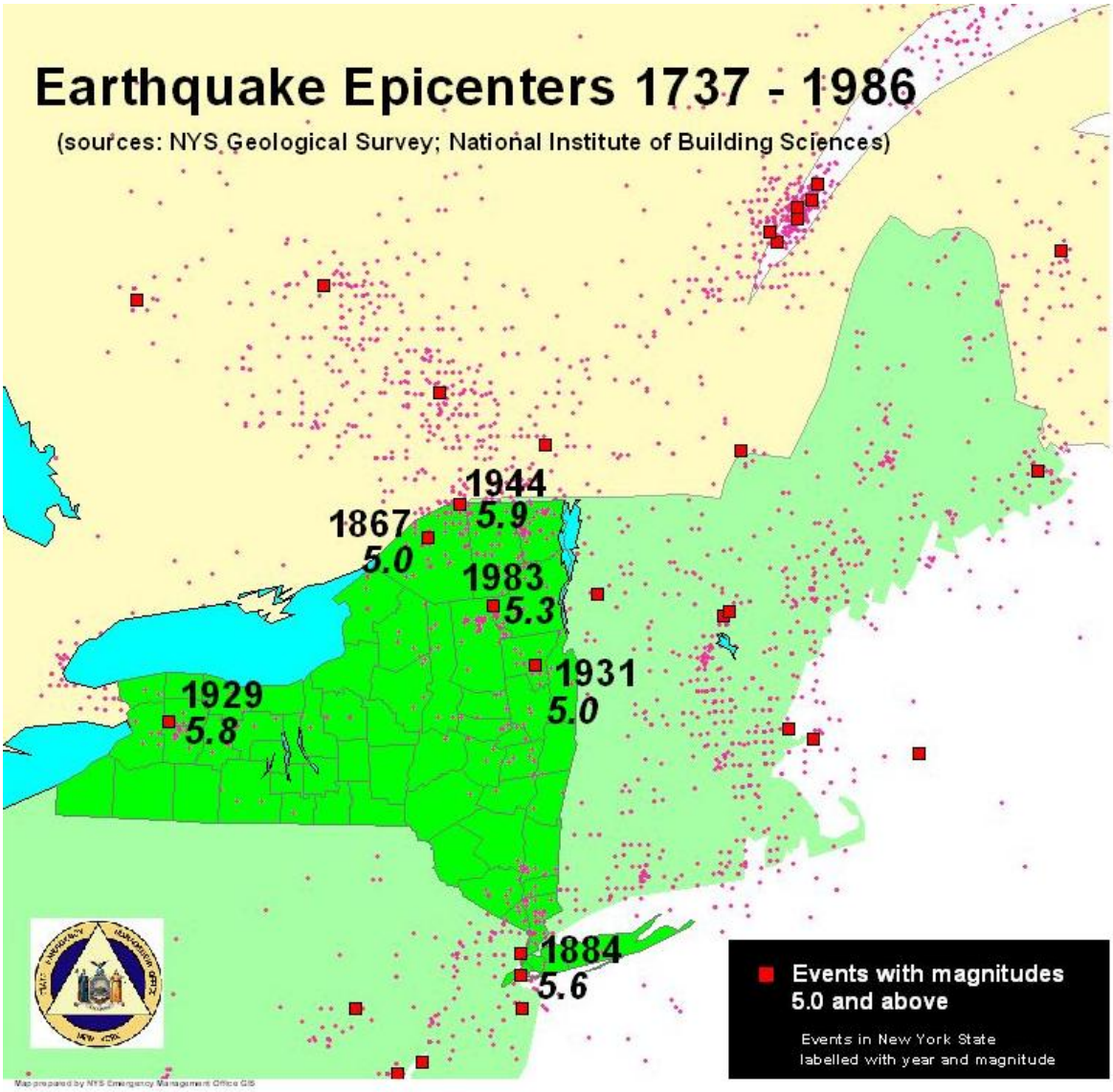


Figure 3a.23 indicates that five to six additional minor earthquakes have been epicentered in Lewis County since 1737, although details of these events were not readily available.

There has been one Federally-declared disaster in New York State due to an earthquake, following an event of Magnitude 3.1 that occurred in the far north eastern part of the state in April 2002 (with aftershocks in May 2002). Lewis County was not recorded as being affected by this event.

Table 3a.19
Earthquake History Throughout New York State (1737 – 2005)
Source: NYSEMO / NYS Statistical Yearbook 2006

Date	Location	Size	Damage Description
December 18, 1737	New York City	5.2	Bells rang, several chimneys fell
January 16, 1840	Herkimer	3.7	No reference and/or No damage reported
September 2, 1847	Offshore NYC	3.5	No reference and/or No damage reported
September 9, 1848	Rockland Lake	V	Felt by many
March 12, 1853	**Lowville**	**VI**	**Machinery knocked over**
February 7, 1855	Saugerties	VI	Cryoseism
October 23, 1857	Buffalo (Lockport)	4.0	Bells rang, crocks fell from shelves
December 18, 1867	**Canton, St. Lawrence County**	**4.7**	**Sleepers awakened**
December 11, 1874	Tarrytown*	3.4	No reference and/or No damage reported
November 4, 1877	Lyon Mountain	VII	Chimneys down, walls cracked, window damaged, crocks overturned
August 10, 1884	New York Bight (NYC)	5.2	Chimneys and bricks fell, walls cracked
May 28, 1897	Dannemora	4.5	No reference and/or No damage reported
February 3, 1916	Schenectady	3.8	Broke windows, people thrown out of bed
March 18, 1928	Saranac Lake	4.0	No reference and/or No damage reported
August 12, 1929	Attica	5.2	250 chimneys fell, brick buildings damaged, Attica prison walls, wells went dry
April 20, 1931	Warrensburg	4.8	Chimneys fell, church spire twisted
April 15, 1934	Dannemora	3.9	House shifted
July 9, 1937	Brooklyn	3.5	No reference and/or No damage reported
September 5, 1944	Corwall, Ontario/Massena, NY	5.8	Nearly all chimneys fell, buildings damaged, $2 million damage
September 5, 1944	Corwall, Ontario/Massena, NY	4.5	Chimneys destroyed, houses damaged
September 3, 1951	Rockland County	3.6	No reference and/or No damage reported
January 1, 1966	Attica	4.7	Chimneys and walls damaged
June 13, 1967	Attica	3.9	Chimneys and walls damaged
May 23, 1971	Blue Mountain Lake	4.1	No reference and/or No damage reported

Table 3a.19 Earthquake History Throughout New York State (1737 – 2005) *Source: NYSEMO / NYS Statistical Yearbook 2006*			
Date	**Location**	**Size**	**Damage Description**
May 23, 1971	Blue Mountain Lake	3.5	No reference and/or No damage reported
June 7, 1974	Wappingers Falls	3.0	Windows broken
June 9, 1975	Plattsburgh (Altona)	3.5	Chimneys and fireplaces cracked
November 3, 1975	Raquette Lake	4.0	No reference and/or No damage reported
February 2, 1983	Scarsdale-Lagrangeville	3.0	Chimneys cracked
October 7, 1983	**Goodnow, Adirondack Mountains**	**5.1**	**Tombstones rotated, some cracked chimneys, windows broken, walls damaged**
October 19, 1985	Ardsley	4.0	Windows broken, walls damaged
June 17, 1991	Richmondville	4.0	No reference and/or No damage reported
March 10, 1992	East Hampton, Suffolk County	4.1	No reference and/or No damage reported
April 20, 2000	Newcomb	3.8	No damage reported
April 20, 2002	Au Sable Forks	5.1	Cracked walls, chimneys fell, road collapsed, power outages. Federal Disaster DR-1415 was declared as a result.
May 24, 2002	Au Sable Forks	3.1	Aftershock of the April 20, 2002 event, no damage reported

In addition to the events mentioned in Table 3a.19, a history of Lewis County published in 1860 records noticeable earthquakes that were felt in Lewis County in 1832, 1836, 1838, and 1839. The same account records that the March 1853 event was violent enough to rattle windows, stoves, and crockery, to bring down one chimney in Lowville, and to ring the bells in the stone church and the academy.

Probability of Occurrence – Earthquakes

Earthquakes cannot be predicted. They strike without warning, at any time of the year, and at any time of the day or night. Earthquake hazard maps ï sometimes referred to as ñPGA mapsò ï are used as a tool to project the likelihood of a various intensity quake being exceed at a certain location over a given period of time. They depict the Peak Ground Acceleration (PGA), expressed as a percentage of the force of gravity that can be expected to be exceeded at a given location for a particular probability of exceedance over a specific time frame. Figure 3a.18 is an example of an earthquake hazard map as prepared by the USGS Earthquake Hazards Program. It shows PGA values that have a 10 percent chance of being exceeded over 50 years.

As Figure 3a.18 shows, the basic earthquake hazard is relatively low but increases north to south across the County. Therefore, according to the currently available earthquake hazard mapping of New York State, there is a 10 percent chance over 50 years that an earthquake with a minimum PGA of 3%g to 5%g will be centered within Lewis County and its component jurisdictions. This earthquake, if it did occur, would likely have associated with it light to moderate perceived shaking and little to no significant damage. While earthquakes causing greater damage within Lewis County are still possible, they have a less than 10% probability of occurrence in any 50-year period.

Landslides

Description - Landslides

According to the USGS National Landslide Information Center (NLIC), the term ñlandslideò is defined as the movement of a mass of rock, debris, or earth down a slope. The force of gravity acting upon a steep (or sometimes, even a moderately steep) slope is the primary cause of a landslide. Slope failure occurs when the force of gravity pulling the slope downward exceeds the strength of the earth materials that comprise the slope to hold it in place. In addition to the force of gravity, other contributing factors to landslides can include rainfall and/or rapid snowmelt, earthquakes, volcanic activity, changes in groundwater, and human-induced modifications to existing slopes.

The potential for a landslide to occur exists in every state in the country wherever very weak or fractured materials are resting on a moderate to steep slope (typically, a slope steep enough to make walking difficult). However, not all moderate to steep slopes are prone to landslides. As slope stability increases, the susceptibility to landslides decreases. Key factors in slope stability are:

- Soil Type. Certain types of soil are more stable on slopes than others. For example, as noted in the New York State Hazard Mitigation Plan, glacial till is one type of soil that tends to stand up well to the landslide tendency while glacial lake clay soils tend to have a higher risk for landslides.
- Terrain. The degree of the slope and the height from top of the slope to its toe also affect slope stability. The New York State Hazard Mitigation Plan indicates that the steeper the slope the higher the risk for landslides to occur (all other things being equal). It notes that minor landslides called ñslumpsò can occur with very minor slopes, and that landslides are most likely on slopes greater than or equal to 10 degrees. In terms of the height of the slope, the State Plan notes that relief greater than 40 feet is generally accepted to be the threshold where the potential becomes more significant.
- Vegetative Cover. Slopes with little or no vegetative cover are more prone to landslides than other more vegetated slopes.
- Soil Water Content. As soil water content increases, slope stability decreases. Periods of sustained above-average precipitation, short duration rainfall events with significant precipitation, and snowmelt events can all add to soil water content and increase susceptibility to landslides.

Landslides can be triggered by natural events or by humans. Natural events include erosion, decreases in vegetative cover due to natural causes and/or seasonal changes, and ground shaking from earthquakes. Human caused triggers include altering the slope gradient, increasing the soil water content, and removal of vegetative cover.

Location and Extent - Landslides

Areas that are commonly considered to be safe from landslides include areas that have not experienced landslides in the past, areas of minimal slope, and areas set back from the tops of slopes. Conversely, areas that are commonly considered to be more prone to landslides tend to be areas where a landslide has occurred in the past, bases of steep slopes or drainage channels, and developed hillsides where leach field septic systems are used.

The potential for landslides exists across the whole of New York State, although according to USGS and NYGS the vast majority of the state (80%) has a low susceptibility to landslide hazard. Landslide hazard mapping has been completed for New York State. In general, the highest potential for landslides can be found along major river and lake valleys that were formerly occupied by glacial lakes resulting in glacial lake deposits (glacial lake clays) and usually associated with steeper slopes, such as the Lake Ontario Region. USGS landslide susceptibility mapping uses three basic classifications to communicate the risk, in conjunction with three further classifications to communicate the combinations of susceptibility and incidence:

- High incidence (Greater than 15 % of the area involved)
- Moderate incidence (1.5% - 15% of the area involved)
- Low incidence (Less than 1.5% of the area involved)
- High susceptibility/moderate incidence
- High susceptibility/low incidence
- Moderate susceptibility/low incidence

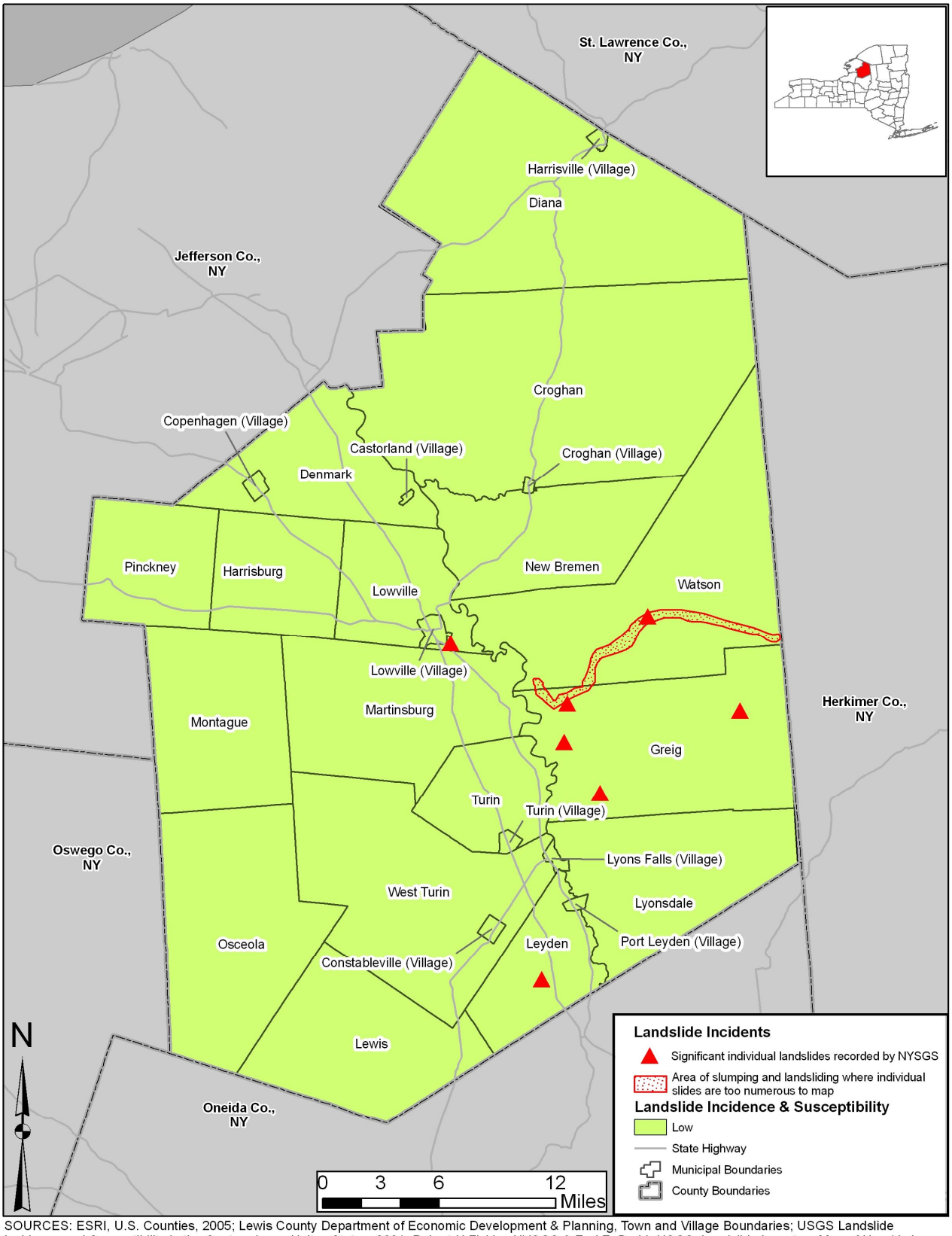
The USGS provides the following supporting narrative for the landslide hazard classifications:

> *"Susceptibility not indicated where same or lower than incidence. Susceptibility to land sliding was defined as the probably degree of response of [the areal] rocks and soils to natural or artificial cutting or loading of slopes, or to anomalously high precipitation. High, moderate, and low susceptibility are delimited by the same percentages used in classifying the incidence of land sliding. Some generalization was necessary at this scale, and several small areas of high incidence and susceptibility were slightly exaggerated."*

USGS landslide susceptibility mapping and a map of the landslide inventory of New York State developed by the New York State Geological Survey (NYSGS) was combined to create the landslide hazard map for Lewis County presented in Figure 3a.24. Of the six categories of incidence and susceptibility listed above, only one has been identified in Lewis County: The map shows that while the County as a whole is classified as ñLow Landslide Incidenceò, there have been a number of significant landslide events recorded by NYSGS, and an area around the Independence River in the Towns of Watson and Greig has been identified as an ñArea of slumping and landsliding where individual slides are two numerous to mapò. This may refer to a series of landslides that occurred along the banks of the Independence River during the December 1984 and may not be indicative of a wider area of enhanced landslide risk away from the immediate vicinity of the river banks.

The severity of a landslide depends in large part on the degree of development in the area in which it occurs and the geographic area of the slide itself. Generally speaking, landslides often result in devastating consequences, but only in very localized areas. A landslide occurring in an undeveloped area would be less severe because lives and property would not be affected; the only impacts would be to land, vegetation, and possibly some wildlife. On the contrary, a landslide occurring in a developed area could have devastating affects, ranging from structure and infrastructure damage to injury and/or loss of life. Structures or infrastructure built on susceptible land would likely collapse as their footings slide downhill, while those below the land failure would likely be crushed. Landslides in the area of roadways could have the potential to fall and damage or destroy vehicles, and force other drivers to have accidents.

Figure 3a.24: Landslide Incidence in Lewis County



SOURCES: ESRI, U.S. Counties, 2005; Lewis County Department of Economic Development & Planning, Town and Village Boundaries; USGS Landslide Incidence and Susceptibility in the Conterminous Unites States, 2001; Robert H Fickies NYSGS & Earl E. Brabb USGS, Landslide Inventory Map of New York, 1989, digitized by URS

Previous Occurrences - Landslides

The New York State Geological Survey records a total of 329 significant individual landslide events that have occurred in New York State between 1837 and 2007, of which seven are recorded as having occurred in Lewis County, as mapped in Figure 3a.24. The New York State Hazard Mitigation plan additionally lists 13 landslides during the same period in which fatalities occurred, but none were recorded in Lewis County. The available details for each of the seven Lewis County landslide events recorded by NYSGS are presented in Table 3a.20.

Table 3a.20
Details of Recorded Landslide Events in Lewis County
(Source: NYSGS)

Municipality	Location	Description	Date
Lowville (Village)	Between Rural Avenue and Jefferson Street, continuing nearly to Cascade Avenue	Natural soil slump	Not recorded
Greig/Watson	Along Independence River banks West of Pine Grove	Natural Soil Slump	12/28/1984
Greig	Donnetburg Road	Natural Soil Slump	Not recorded
Greig	Eatonville Road ï across the bridge: stream erosion washed out road	Natural Soil Slump	Not recorded
Greig	Fish Creek Road, erosion along stream bank	Natural Soil Slump	Not recorded
Greig	Partridgeville Road	Natural Soil Slump	Not recorded
Leyden	Not Recorded	Not recorded	Not recorded

In addition to the events recorded by NYSGS, local sources report that a situation of concern developed in the Village of Lyons Falls in approximately 1999, during which emergency stabilization and reinforcement measures were required to prevent a possible landslide in the Route 12/McAlpine Street area.

Probability of Occurrence – Landslides

While it is certainly possible for future landslides to occur within Lewis County, the current readily available data regarding historic occurrences does not permit any estimation of the frequency of future occurrences. While the overall probability of future occurrence is assumed to be low for most of the County, there is at least one significant portion (including some developed areas) along the Independence River Valley in the Towns of Watson and Greig that has historically been much more prone to landslides than the majority of the County.

Based on overall landslide susceptibility, the number of local historic events and the number of vulnerable structures, Lewis County is ranked in the New York State Hazard Mitigation Plan as the 55th most threatened by landslides out of the 62 counties in the state.

Wildfires

Description – Wildfires

A wildfire is an uncontrolled fire burning in an area of vegetative fuels such as grasslands, brush, or woodlands. Wildfires can occur in areas essentially void of development, or in areas where development intermingles with these natural areas (known as the ñurban-wildland interfaceò). Many wildfires occur in locations that abound in dense forests, grasslands and shrubs. Heavier fuels with high continuity, steep slopes, high temperatures, low humidity, low rainfall, and high winds all work to increase risk.

Wildfires can occur at any time of the year, but will usually occur during warmer and dryer months. Wildfires are most commonly caused by people (i.e., arson, debris burns, and carelessness). Lightning is the next most common cause of wildfires. As reported by the Wildland Fire Assessment System (WFAS) wildfires resulting from a lightning strike largely depend on the duration of the current and the kind of fuel the lightning hits. Spread of the wildfire after ignition usually depends primarily on fuel moisture.

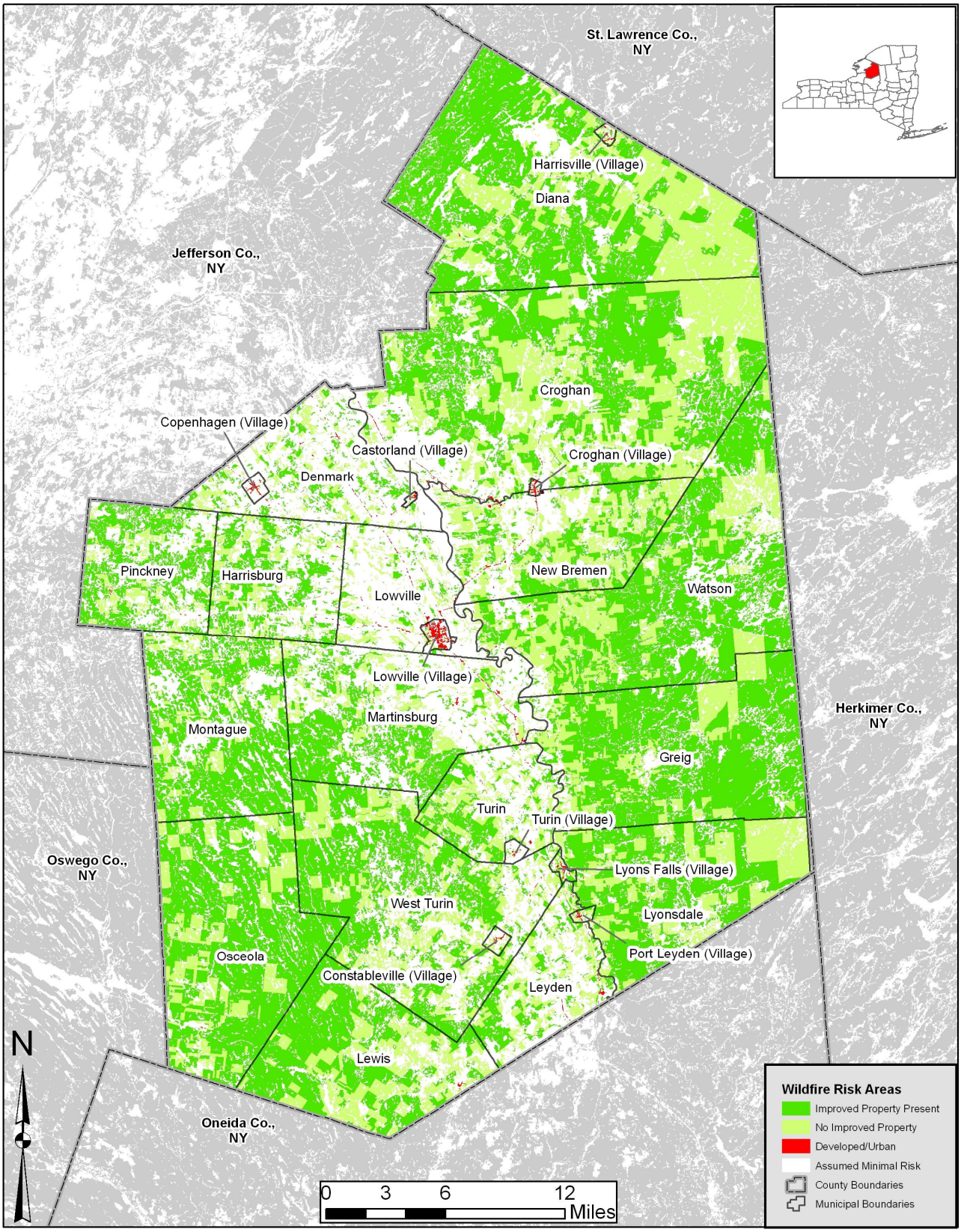
Location and Extent – Wildfires

Areas that are typically considered to be safe from wildfires include highly urbanized, developed areas that are not contiguous with large areas of wild lands. Areas typically considered to be prone to wildfires include large tracts of wild lands containing heavier fuels with high continuity, at steeper slopes.

Wildfires are a significant hazard in Lewis County, particularly in the forested areas which cover large tracts of the County. Many of the areas at risk from wildfires are also popular with hunters, hikers and campers. Several locally important transportation routes touch on or traverse potentially vulnerable areas, leaving them vulnerable to closure during forest fire due to smoke conditions. Important infrastructure and utility assets such as power lines and the Iroquois Gas pipeline also traverse areas vulnerable to wildfires. Areas in Lewis County where the magnitude and severity of the hazard are the greatest tend to exhibit the lowest population densities in the County; as a result, the exposure of people living and working in the highest hazard areas is often relatively low.

Figure 3a.25 shows the areas of Lewis County that are considered to be at risk from wildfire colored green and urban/developed areas colored red. Areas considered to be at risk areas include deciduous, evergreen, and mixed forest, shrub land, and grassland. The vast majority of the wildfire risk areas consist of forested land (approximately 60% of the County land area and 87% of the wildfire risk area) while shrub and uncultivated grassland areas are not present in significant quantities (together they make up approximately 9% of the County land area and 13% of the wildfire risk area). Agricultural land (including cropland and pastureland) and vegetated developed open space such as golf courses and sports fields are not considered to be at significant risk from wildfire for the purposes of this plan and its component risk assessment. For the purposes of this plan, it is estimated that approximately 68% of the County area lies within a wildfire hazard zone.

Figure 3a.25: Wildfire Risk Areas in Lewis County



SOURCES: ESRI, U.S. Counties, 2005; Lewis County Department of Economic Development & Planning, Town and Village Boundaries; U.S. Census Bureau, Herkimer, Oswego, Oneida, Lewis, Jefferson, Oswego, St. Lawrence Counties, Area Hydrography, 2007; NYS Geological Survey, NEHRP Soil Class Data

The wildfire risk areas in Figure 3a.25 have been color-coded as follows:

- Dark green: those areas in which the component parcels include some improved value; i.e. structures are present.
- Light green: those areas for which no improved value and hence no structures are associated with the component parcels.

This allows a general determination to be made regarding those areas at risk from wildfire in which there is a higher likelihood that such fires could also pose a threat to lives and structures, in addition to developed areas which have a direct interface with the wildfire risk areas.

The wildfire risk for the individual municipalities within Lewis County has been quantified by measuring the length of the developed-wildland interface and the total value of improved property located in hazard areas within the county, and these estimations are presented in Table 3a.21. The developed-wildland interface measurements were estimated incorporating a 200 ft buffer extending from the urban/developed areas into the wildfire risk areas, to account for the likelihood that structures in the urban area are at risk of combustion before a wildfire reaches the exact interface.

The Towns of Diana, Grieg, Lewis, Lyonsdale, and Osceola all have more than 75% of their land area within identified wildfire hazard zones, with the Towns of Greig and Osceola also exhibiting more than 75% of their improved property within wildfire hazard zones. However, the municipality with the greatest dollar amount of improved property in the hazard zone is the Town of Croghan. In terms of the urban-wildland interface, the Town of Leyden exhibits the biggest vulnerability to wildfires, with an interface more than 5 miles in length. Four other towns (Croghan, Lowville, Martinsburg and New Bremen) have interfaces of three to five miles in length.

Previous Occurrences – Wildfires

While neither the NCDC database or the New York State Hazard Mitigation Plan report in detail any specific historical instances of wildfires in Lewis County, some historical examples of wildfires in Lewis County have been found in the course of general internet research;

- A history of Lewis County published in 1860 mentions forest fires in the Town of Croghan in May 1831 and in the Town of Watson in July 1849.
- The New York State Power Authority reports that fire departments from Lowville, Beaver Falls, and Croghan were involved in extinguishing a major fire on and around a power transmission line right-of-way near Harrisville on August 14th, 2002.
- The *New York State Conservationist* of October 1st, 2007 mentions a significant fire in the Town of Watson started by wind blowing burning debris from a residential burn barrel.

Table 3a.21
Exposure to Wildfire Risk in Lewis County

Municipality	Developed -Wildland Interface (feet)	Wildfire Risk Area – No Improved Property (Acres)	Wildfire Risk Area – With Improved Property (Acres)	Total Municipal Area (Acres)	Total Area Within Wildfire Risk Zones %	Total Value of Improvements in Municipal Areas	Improved Value Within Wildfire Risk Zones	Improved Value Within Wildfire Risk Zones %
Castorland, Village of	2,144	20	49	183	38%	$4,051,601	$1,474,491	36%
Constableville, Village of	4,318	59	205	723	37%	$10,939,719	$4,031,098	37%
Copenhagen, Village of	*2,666*	*6*	*65*	*756*	*10%*	*$25,876,310*	*$2,673,939*	*10%*
Croghan, Town of	17,180	45,970	37,880	116,142	73%	$240,302,735	$100,214,297	42%
Croghan, Village of	2,612	11	25	274	14%	$48,524,225	$6,661,202	14%
Denmark, Town of	10,344	4,324	4,961	31,760	29%	$43,917,282	$8,216,413	19%
Diana, Town of	10,315	46,141	26,405	90,049	81%	$29,808,074	$19,344,788	65%
Greig, Town of	2,801	38,690	10,933	59,864	84%	$46,824,943	$37,152,334	79%
Harrisburg, Town of	3,336	8,188	4,544	25,455	50%	$13,496,355	$4,986,725	37%
Harrisville, Village of	*13,943*	*76*	*193*	*513*	*55%*	*$12,967,001*	*$4,870,684*	*38%*
Lewis, Town of	2,463	20,817	12,315	41,572	80%	$27,190,757	$14,282,513	53%
Leyden, Town of	29,635	4,191	5,130	21,234	45%	$25,439,385	$8,721,629	34%
Lowville, Town of	16,603	1,578	3,219	23,141	21%	$28,836,993	$6,038,388	21%
Lowville, Village of	11,900	34	130	1,249	13%	$73,218,605	$6,763,379	9%
Lyons Falls, Village of	14,753	191	169	657	57%	$32,199,666	$14,667,986	46%
Lyonsdale, Town of	5,216	21,697	14,450	43,974	83%	$39,646,201	$22,436,993	57%
Martinsburg, Town of	22,108	15,679	7,317	48,459	48%	$2,055,970	$529,855	26%
Montague, Town of	1,184	22,237	4,937	40,975	67%	$3,726,603	$2,483,308	67%
New Bremen, Town of	*18,102*	*9,405*	*12,252*	*35,738*	*61%*	*$7,111,498*	*$3,067,706*	*43%*
Osceola, Town of	3,900	35,444	11,584	56,678	83%	$9,444,244	$7,348,707	78%
Pinckney, Town of	7,638	11,500	3,701	26,336	58%	$12,107,958	$6,642,220	55%
Port Leyden, Village of	7,936	74	185	453	58%	$11,103,000	$3,574,881	32%
Turin, Town of	*7,737*	*5,165*	*5,798*	*19,445*	*57%*	*$27,287,274*	*$14,640,495*	*54%*
Turin, Village of	*2,496*	*58*	*52*	*658*	*17%*	*$4,525,600*	*$1,024,652*	*23%*
Watson, Town of	*13,212*	*39,709*	*16,843*	*74,818*	*76%*	*$5,451,415*	*$4,068,434*	*75%*
West Turin, Town of	5,475	5,239	14,882	64,525	67%	$26,267,792	$11,685,918	44%
County Totals	**240,018**	**359,223**	**198,224**	**825,630**	**68%**	**$812,321,205**	**$317,603,033**	**39%**

Probability of Occurrence - Wildfires

Wildfire events will remain at least an occasional occurrence in Lewis County, and the probability of future occurrences in the County is certain, particularly if drought conditions become more prevalent in the future. The likelihood of increased future development (particularly residential) can only result in an increase in the length of the urban-wildland interface, an increase in the improved value of property within wildfire hazard zones, and a greater risk of property damage and danger to the public in future years. However, most wildfire events in the County are typically contained and extinguished rather quickly and those events causing major property damage or life/safety threats are much less likely to occur.

A Distinction Between "Hazards" and "Events"

This section of the plan speaks to hurricanes and tropical storms, tornadoes, and winter storms/ice storms. These are severe weather events (not hazards themselves). Severe weather events have specific hazards associated with them. The unique hazards associated with the severe weather events discussed in this section are addressed specifically elsewhere in the plan; they are summarized briefly here. While HAZARDS are fully identified and profiled, with vulnerability assessments completed, EVENTS are merely summarized here for information only. EVENTS are not fully profiled and a vulnerability assessment has not been completed. The reader is, however, directed to the HAZARDS associated with these EVENTS (for profile/vulnerability assessment/etc.).

SECTION 3b - RISK ASSESSMENT: IDENTIFICATION AND CHARACTERIZATION OF ASSETS

Overview

An inventory of geo-referenced assets in Lewis County has been created in order to identify and characterize property and persons potentially at risk from the identified hazards. Understanding the type and number of hazards that exist in relation to known hazard areas is an important step in the process of formulating the risk assessment and quantifying the vulnerability of the municipalities that make up Lewis County. For this plan, six key categories of assets have been mapped and analyzed using GIS data provided by Lewis County, with some additional data drawn from other public sources:

1. Improved property: This category includes all developed properties according to parcel data provided by Lewis County and equalization rates from the New York State Office of Real Property Services. Impacts to improved properties are presented as a percentage of each communityôs total value of improvements that may be exposed to the identified hazards.
2. Emergency facilities: This category covers all facilities dedicated to the management and response of emergency or disaster situations, and includes emergency operations centers (EOCs), fire stations, police stations, ambulance stations, and hospitals. Impacts to these assets are presented by tabulating the facilities present in delineated hazard areas.
3. Critical infrastructure and utilities: This category covers facilities and structures vital to the maintenance of basic living conditions in the county, and includes power generating stations, potable water treatment plants, wastewater treatment plants, significant public works buildings, airports, and ferry ports. Impacts to these assets are presented by tabulating the facilities present in delineated hazard areas.
4. Other key facilities: This category covers facilities which may be capable of providing refuge and limited medical care and hence may be utilized as emergency shelters, and those which routinely house more vulnerable sectors of the county population, making them potentially more vulnerable to identified hazards. Included in this category are schools and senior care facilities and impacts to these assets are presented by tabulating the facilities present in delineated hazard areas.
5. Historic and cultural resources: This category includes those historic structures, landmarks and sites that are included in the New York State or National Register of Historic Places. Impacts to these assets are presented by tabulating the number of each type of facility present in areas exposed to each identified hazard. Any other structure, landmark or asset identified during the course of general research for this section that has been judged to be potentially of local historical or cultural significance has also been included in this category.
6. Population: This category covers the number of people residing in Lewis County as measured by the 2000 U.S. Census. Municipal populations are broken down by age categories to identify communities in which more vulnerable sectors of the population are concentrated.

Improved Property

Improved property covers all development in the form of structures for residential, commercial, industrial, municipal, recreational, and utility uses. The total value of property improvements in the 26 Lewis County jurisdictions has been estimated at just over $812,000,000 based on total assessed values converted to 2008 market values using State equalization rates supplied for each jurisdiction by the New York State Office of Real Property Services (where the assessed value of improvements was calculated by subtracting the assessed value of the land from the total assessed value of the parcel). While this methodology does not provide an estimation of the actual replacement cost of buildings in the Countyôs municipalities, the consistent application of this calculation for all municipalities provides a figure to be used for comparison of exposure across the different municipalities and for different hazards within each municipality. The estimated value of improved property in hazard areas in any municipality is intended as a tool to aid in conceptualizing and prioritizing risk for mitigation planning purposes. It is in no way binding, it is not presented on a property-by-property basis, and it will not be used by FEMA to calculate or influence payments for future disaster losses under such programs as the National Flood Insurance Program (NFIP), Public Assistance or Individual Assistance Programs.

Table 3b.1 summarizes the improved properties in each jurisdiction, in terms of total parcels, percentage of improved parcels, and the total value of improvements in each, based on GIS data provided by the Lewis County Department of Planning.

Table 3b.2 presents a summary of the estimated improved property values within each delineated hazard area by jurisdiction, expressed as a percentage of the total improved property value in each jurisdiction.

ñDelineatedò hazards are those which only affect specific identifiable areas as opposed to those assumed to have a uniform risk across the entire planning area; i.e. hurricanes, norôeasters and all other extreme wind events, winter storms, extreme temperatures, and lightning. While droughts are considered to affect only specific delineable areas, they are assumed not to impact improved property (i.e. structures) and drought are therefore not included in Table 3b.2. Detailed tables presenting the improved property values broken down by land use and development type within delineated hazard areas are included in Appendix A.

Table 3b.1
Improved Property by Jurisdiction

Jurisdiction	Total Number of Parcels	Number of Improved Parcels	Percentage of Improved Parcels	Total Value of Improvements*
Castorland, Village of	130	114	88%	$4,051,601
Constableville, Village of	197	163	83%	$10,939,719
Copenhagen, Village of	*270*	*233*	*86%*	*$25,876,310*
Croghan, Town of	2372	1431	60%	$240,302,735
Croghan, Village of	294	245	83%	$48,524,225
Denmark, Town of	1129	701	62%	$43,917,282
Diana, Town of	1836	1116	61%	$29,808,074
Greig, Town of	2011	1159	58%	$46,824,943
Harrisburg, Town of	613	258	42%	$13,496,355
Harrisville, Village of	*351*	*293*	*83%*	*$12,967,001*
Lewis, Town of	892	482	54%	$27,190,757
Leyden, Town of	1003	678	68%	$25,439,385
Lowville, Town of	809	520	64%	$28,836,993
Lowville, Village of	1347	1248	93%	$73,218,605
Lyons Falls, Village of	380	282	74%	$32,199,666
Lyonsdale, Town of	1062	574	54%	$39,646,201
Martinsburg, Town of	1230	698	57%	$2,055,970
Montague, Town of	561	260	46%	$3,726,603
New Bremen, Town of	*1512*	*1041*	*69%*	*$7,111,498*
Osceola, Town of	858	420	49%	$9,444,244
Pinckney, Town of	613	277	45%	$12,107,958
Port Leyden, Village of	321	268	83%	$11,103,000
Turin, Town of	*622*	*367*	*59%*	*$27,287,274*
Turin, Village of	*167*	*131*	*78%*	*$4,525,600*
Watson, Town of	*2451*	*1423*	*58%*	*$5,451,415*
West Turin, Town of	1308	668	51%	$26,267,792
County Total	**24339**	**15050**	**62%**	**$812,321,205**

*Not including some public buildings and other tax-exempt structures.

Table 3b.2
Percentage of Improved Property in Delineated Hazard Areas

Municipality	Total Value of Improvements	High Flood Risk (A/AE Zones)	Wildfire	Earthquake (SA 65-94% g)
Castorland, Village of	$4,051,601	0.0%	36%	27%
Constableville, Village of	$10,939,719	4.3%	37%	28%
Copenhagen, Village of	*$25,876,310*	*0.0%*	*10%*	*0%*
Croghan, Town of	$240,302,735	50.7%	42%	5%
Croghan, Village of	$48,524,225	5.3%	14%	0%
Denmark, Town of	$43,917,282	6.5%	19%	17%
Diana, Town of	$29,808,074	15.3%	65%	5%
Greig, Town of	$46,824,943	20.0%	79%	8%
Harrisburg, Town of	$13,496,355	0.0%	37%	4%
Harrisville, Village of	*$12,967,001*	*5.7%*	*38%*	*0%*
Lewis, Town of	$27,190,757	21.8%	53%	0%
Leyden, Town of	$25,439,385	8.3%	34%	8%
Lowville, Town of	$28,836,993	3.6%	21%	23%
Lowville, Village of	$73,218,605	0.4%	9%	2%
Lyons Falls, Village of	$32,199,666	8.2%	46%	43%
Lyonsdale, Town of	$39,646,201	31.8%	57%	7%
Martinsburg, Town of	$2,055,970	9.2%	26%	7%
Montague, Town of	$3,726,603	0.0%	67%	0%
New Bremen, Town of	*$7,111,498*	*7.3%*	*43%*	*8%*
Osceola, Town of	$9,444,244	2.0%	78%	0%
Pinckney, Town of	$12,107,958	0.0%	55%	2%
Port Leyden, Village of	$11,103,000	6.7%	32%	29%
Turin, Town of	*$27,287,274*	*0.9%*	*54%*	*5%*
Turin, Village of	*$4,525,600*	*9.5%*	*23%*	*0%*
Watson, Town of	*$5,451,415*	*13.2%*	*75%*	*8%*
West Turin, Town of	$26,267,792	0.0%	44%	2%
County Total	**$812,321,205**	**20.9%**	**39%**	**6%**

Emergency Facilities

Emergency facilities were included in the asset identification and characterization to determine jurisdictions with particularly high numbers of key facilities located in hazard areas, which may guide the focus of individual mitigation activities in the mitigation goals and strategy stage of the plan. Emergency facilities by jurisdiction are presented in Table 3b.3. According to County GIS data and other county records, and databases embedded in HAZUS-MH (a risk-assessment tool made available by FEMA), there are a total of 19 geo-referenced emergency facilities in the 26 municipalities that comprise Lewis County. According to the available records, there is at least one type of emergency facility located in 15 of the 26 municipalities.

Table 3b.3
Emergency Facilities by Jurisdiction

Jurisdiction	Fire Stations	Police Stations	EMS / Ambulance Stations	Hospitals
Castorland, Village of	1			
Constableville, Village of	1			
Copenhagen, Village of	*1*			
Croghan, Town of	1			
Croghan, Village of	1			
Denmark, Town of				
Diana, Town of				
Greig, Town of	1			
Harrisburg, Town of				
Harrisville, Village of	*1*			
Lewis, Town of	1			
Leyden, Town of				
Lowville, Town of				
Lowville, Village of	1	2	1	1
Lyons Falls, Village of	1			
Lyonsdale, Town of				
Martinsburg, Town of	1			
Montague, Town of				
New Bremen, Town of	*1*			
Osceola, Town of				
Pinckney, Town of				
Port Leyden, Village of	1			
Turin, Town of	*1*			
Turin, Village of	*1*			
Watson, Town of				
West Turin, Town of				
County Total	**15**	**2**	**1**	**1**

Critical Infrastructure and Utilities

Critical infrastructure and utilities were included in the asset identification and characterization to determine jurisdictions with particularly high numbers of key facilities located in hazard areas, which may guide the focus of individual mitigation activities in the mitigation goals and strategy stage of the plan. Critical infrastructure and utilities by jurisdiction are presented in Table 3b.4. According to County GIS records, the Lewis County Comprehensive Plan, information from New York State Department of Environmental Conservation, and databases embedded in HAZUS-MH, there are a total of 75 identified critical infrastructure and utility facilities in the planning area, plus the Iroquois Gas Pipeline, which runs through eight municipalities in the County, with a feeder line to one more. There are also 12 community water supply systems in the County, primarily using a number of wells and springs which have not yet been georeferenced.

Public works facilities include buildings for the storage and maintenance of vehicles and other equipment used to respond to emergency situations, apart from police, fire and ambulance stations, such as municipal highway departments and town garages.

The power substations category includes 19 hydropower facilities and 9 non-hydropower facilities in Lewis County.

Airports has been taken to mean substantial airfields with paved runways operating scheduled services or suitable for the operation of fixed-wing aircraft for the transporting of emergency response personnel and equipment.

Communications facilities are transmitting stations for emergency services or for radio and/or television stations licensed by the Federal Communications Commission. Also included under communications facilities is the National Weather Service Doppler Radar Tower in the town of Montague (marked * in Table 3b.4) which is used to forecast and track lake-effect snowfalls.

The exposure of identified emergency services, critical facilities, and infrastructure assets to hazards with discrete delineable impact areas is presented in Table 3b.6. Table 3b.6 does not include those assets which are only vulnerable to the county-wide/uniform assumed risk hazards such as wind, winter storms, and extreme temperatures.

Table 3b.4
Critical Infrastructure and Utilities by Jurisdiction

Municipality	Community Water Supply Systems	Waste Water Facilities	Power Substations	Gas Pipeline	Public Works Facilities	Airports	Communications Facilities
Castorland, Village of	1	1					
Constableville, Village of	1	1			1		
Copenhagen, Village of	*1*	*1*	*1*				
Croghan, Town of		1	8	1	1		
Croghan, Village of	1	1		1	1		
Denmark, Town of			1		1		2
Diana, Town of				1			
Greig, Town of				1	1		
Harrisburg, Town of					1		
Harrisville, Village of	*1*				*1*		
Lewis, Town of					1		
Leyden, Town of			4	1	1		1
Lowville, Town of			1		1		
Lowville, Village of	1	1			1		
Lyons Falls, Village of	1	1	1				
Lyonsdale, Town of			3		1		
Martinsburg, Town of	2	1	1		1		1
Montague, Town of					1		1*
New Bremen, Town of			*3*	*1*	*1*	*1*	
Osceola, Town of	1				1		
Pinckney, Town of					1		2
Port Leyden, Village of	1	1	2				
Turin, Town of				*1*			
Turin, Village of	*1*				*1*		
Watson, Town of			*2*	*1*			
West Turin, Town of			1	1			
County Total	**12**	**9**	**28**	**9**	**18**	**1**	**7**

Other Key Facilities

Other key facilities were included in the asset identification and characterization to determine jurisdictions with particularly high numbers of such facilities located in hazard areas, which may guide the focus of individual mitigation activities in the mitigation goals and strategy stage of the plan. Schools and residential senior care facilities by jurisdiction are presented in Table 3b.5.

Table 3b.5
Other Key Facilities by Jurisdiction

Jurisdiction	Schools	Residential Senior Care Facilities*
Castorland, Village of	1	1
Constableville, Village of	1	0
Copenhagen, Village of	*1*	*1*
Croghan, Town of	1	0
Croghan, Village of	0	1
Denmark, Town of	0	0
Diana, Town of	0	0
Greig, Town of	0	0
Harrisburg, Town of	0	0
Harrisville, Village of	*2*	*1*
Lewis, Town of	1	0
Leyden, Town of	0	0
Lowville, Town of	0	1
Lowville, Village of	4	4
Lyons Falls, Village of	0	1
Lyonsdale, Town of	0	0
Martinsburg, Town of	1	0
Montague, Town of	0	0
New Bremen, Town of	*3*	*0*
Osceola, Town of	0	0
Pinckney, Town of	0	0
Port Leyden, Village of	1	2
Turin, Town of	*2*	*0*
Turin, Village of	*0*	*0*
Watson, Town of	*0*	*0*
West Turin, Town of	0	0
County Total	**18**	**12**

*Not confirmed or georeferenced

According to County GIS records and databases embedded in HAZUS-MH, there are a total of 30 such key facilities in the planning area. The exposure of georeferenced identified emergency services, critical facilities, and infrastructure assets to profiled hazards with discrete delineable impact areas is presented in Table 3b.6.

Table 3b.6
Critical Facilities and Infrastructure Exposed to Delineated Hazards

Municipality	Type	Name	Location/Address	Earthquake (Soils Type D & E)	Wildfire	Flood (A/AE Zone)
Castorland	Fire Station	Castorland Fire Company	5187 State Route 410	✓		
Castorland	School	Crystal Light Mennonite School	Highland Avenue Po Box 146	✓		
Constableville	Highway Garage	West Turin Town Garage	6462 James Street	✓		
Constableville	Waste Water Facility	Constableville Village Sewage Treatment Plant	Route 26	✓		✓
Croghan (Town)	Fire Station	Beaver Falls Fire Department	9583 Main Street	✓		
Croghan (Town)	Power Substation	No Information Available	No Information Available	✓	✓	✓
Croghan (Town)	Power Substation	No Information Available	No Information Available	✓	✓	✓
Croghan (Town)	Power Substation	No Information Available	No Information Available	✓	✓	✓
Croghan (Town)	Power Substation	No Information Available	No Information Available	✓		✓
Croghan (Town)	Power Substation	No Information Available	No Information Available	✓		✓
Croghan (Town)	Power Substation	No Information Available	No Information Available	✓		
Croghan (Town)	Power Substation	No Information Available	No Information Available	✓		
Croghan (Town)	Waste Water Facility	Croghan Town Waste Water Treatment Facility	No Information Available	✓		✓
Croghan (Town)	Natural Gas Pipeline	Iroquois Pipeline	No Information Available	✓	✓	✓
Croghan (Village)	Public Works Facility	Croghan Village Garage	9578 Park Drive	✓		
Croghan (Village)	Natural Gas Pipeline	Iroquois Pipeline	No Information Available	✓	✓	✓
Denmark	Communications Facility	WBDI Ch 294	No Information Available	✓		
Denmark	Highway Garage	Denmark Town Garage	3707 Roberts Road	✓		
Denmark	Power Substation	No Information Available	No Information Available		✓	✓
Denmark	Waste Water Facility	Castorland Village Waste Water Treatment Facility	Po Box 104, State Route 410	✓		✓
Diana	Natural Gas	Iroquois Pipeline	No Information Available	✓	✓	✓

Table 3b.6
Critical Facilities and Infrastructure Exposed to Delineated Hazards

Municipality	Type	Name	Location/Address	Earthquake (Soils Type D & E)	Wildfire	Flood (A/AE Zone)
	Pipeline					
Greig	Natural Gas Pipeline	Iroquois Pipeline	No Information Available	y	y	y
Harrisville	Fire Station	Harrisville Fire Department	14226 Church Street	y		
Harrisville	Highway Garage	Diana Town Garage	5952 Old State Street Extension	y		
Leyden	Power Substation	No Information Available	No Information Available	y	y	y
Leyden	Power Substation	No Information Available	No Information Available	y	y	y
Leyden	Natural Gas Pipeline	Iroquois Pipeline	No Information Available		y	y
Lowville (Town)	Power Substation	No Information Available	No Information Available			y
Lyons Falls	Power Substation	No Information Available	No Information Available	y		
Lyons Falls	Waste Water Facility	Lyons Falls Waste Water Treatment Facility	Po Box 142 Off Continental Circle	y		
Lyonsdale	Highway Garage	Lyonsdale Town Highway Garage	3408 River Road	y		
Lyonsdale	Power Substation	No Information Available	No Information Available		y	
Lyonsdale	Power Substation	No Information Available	No Information Available		y	
Lyonsdale	Power Substation	No Information Available	No Information Available			y
Martinsburg	Power Substation	No Information Available	No Information Available		y	
Martinsburg	Waste Water Facility	Glenfield Sewer District Sewage Treatment Plant	Outer Blue Street	y		y
Montague	Weather Station	NWS Doppler Radar Tower	Sears Pond Road		y	
New Bremen	*Airport*	*Duflo Airport*	*North of Route 812*	■		
New Bremen	*Fire Station*	*New Bremen Fire Department*	*8154 Route 812*	■		
New Bremen	*Highway Garage*	*New Bremen Town Garage*	*8420 Route 812*	■		
New Bremen	*School*	*Beaver River Elementary School*	*9508 Artz Road*	■		

Table 3b.6
Critical Facilities and Infrastructure Exposed to Delineated Hazards

Municipality	Type	Name	Location/Address	Earthquake (Soils Type D & E)	Wildfire	Flood (A/AE Zone)
New Bremen	*School*	*Beaver River Middle School*	*9508 Artz Road*	■		
New Bremen	*School*	*Beaver River Senior High School*	*9508 Artz Road*	■		
New Bremen	*Power Substation*	*No Information Available*	*No Information Available*	■	■	■
New Bremen	*Power Substation*	*No Information Available*	*No Information Available*	■		■
New Bremen	*Power Substation*	*No Information Available*	*No Information Available*	■		
New Bremen	*Natural Gas Pipeline*	*Iroquois Pipeline*	*No Information Available*	■	■	■
Port Leyden	Power Substation	No Information Available	No Information Available	■		■
Port Leyden	Power Substation	No Information Available	No Information Available	■	■	
Port Leyden	Waste Water Facility	Port Leyden Sewage Treatment Plant	Lincoln Street	■		
Turin (Town)	*Natural Gas Pipeline*	*Iroquois Pipeline*	*No Information Available*	■	■	■
Watson	*Power Substation*	*No Information Available*	*No Information Available*	■		■
Watson	*Power Substation*	*No Information Available*	*No Information Available*	■	■	
Watson	*Natural Gas Pipeline*	*Iroquois Pipeline*	*No Information Available*	■	■	
West Turin	Natural Gas Pipeline	Iroquois Pipeline	No Information Available		■	

All critical facilities and infrastructure assets are considered vulnerable to county-wide hazards such as temperature and wind, winter storms, and earthquakes. For the County overall there is a 10% chance of earthquakes with peak ground acceleration of *at least* 3% of gravity occurring in any 50-year period. There are no known delineations for the areas affected specifically by flooding caused by ice jams, and droughts are assumed not to physically affect structures. Mapping which clearly shows dam failure inundation areas for high hazard dams in the county was not readily available at the time of writing.

Historical and Cultural Resources

Historical and cultural resources were included in the asset identification and characterization to determine jurisdictions with particularly high numbers of culturally or historically valuable assets located in hazard areas, which may influence the focus of individual mitigation activities in the mitigation goals and strategy stage of the plan. At the State and Federal levels, official listings of historic resources are established and maintained to foster the preservation of particular cultural resources. The State and National Registers of Historic Places are the official listings of buildings, structures, districts, objects, and sites significant in the history, architecture, archaeology, engineering, and culture of the State and the nation. Cultural and historic resources are defined as follows:

Cultural Resources: As defined by the National Park Service in its "Cultural Resources Management Guidelines," cultural resources are: ñ*Those tangible and intangible aspects of cultural systems, both living and dead, that are valued by or representative of a given culture or that contain information about a culture . . . and [they] include but are not limited to sites, structures, districts, objects and artifacts, and historic documents associated with or representative of peoples, cultures, and human activities and events, either in the present or in the past. Cultural resources also can include the primary written and verbal data for interpreting and understanding those tangible resources.*ò

Historic Resources: Historic resources are any cultural resource dating from the period between the onset of written records (which in southern New York State is typically placed around the time of first European contact in the sixteenth century) and 50 years ago.

In the State of New York, the State Historic Preservation Office (SHPO) ï within the New York State Office of Parks, Recreation and Historic Preservation (OPRHP) ï helps communities identify, evaluate, preserve, and revitalize their historic and cultural resources. New York SHPO maintains GIS databases of all historic and cultural assets listed on the State and National Registers. To identify the resources of this nature located in Lewis County, GIS files were obtained through a request to the NYS OPRHP. This data includes only those cultural and historic properties and sites that are included in the New York State or National Registers of Historic Places, or that have been determined eligible for inclusion through federal or state processes as administered by the New York SHPO. Inclusion in this data set does not preclude the existence of other historic properties or sites not within this category or as yet unidentified.

Historical and cultural assets located in Lewis County are presented in Table 3b.7. According to New York SHPO and National Register of Historic Places data there are 19 such assets georeferenced and registered in the planning area. According to the available records, State and Federally listed historical assets are located in 10 of the 26 municipalities covered by this hazard mitigation plan. The National Register of Historic Places also includes two archaeological districts (Alpina and Lewisburg, both in the Town of Diana) for which the exact locations are restricted since they lie inside the Fort Drum Military Reservation. In addition to those places on the National and State Registers, a number of other assets were identified by municipal representatives as having local historic and cultural significance, and these assets are also included in Table 3b.7. The exposure of identified historical and cultural resources to hazards with discrete delineable impact areas is presented in Table 3b.8.

Table 3b.7
Historic and Cultural Resources by Jurisdiction

Jurisdiction	Asset Name/Description	Location
Constableville, Village of	Constableville Village Historic District	Bounded by Sugar River, Main, North Main, West Main, Church, High, West and James Streets
Constableville, Village of	Constable Hall	Off NY 26
Croghan, Village of	Croghan Island Lumber Mill	Bridge Street
Croghan, Village of	American Maple Museum	9753 State Route 812
Croghan, Village of	Blacksmithôs Shop	Main Street
Croghan, Village of	Railway Historical Society of Northern New York	Main Street
Croghan, Village of	St. Stephenôs Church	Main Street
Leyden, Town of	Edmund Wilson House	S of Port Leyden off NY 12 on Talcottville Road
Lowville, Village of	Franklin B. Hough House	Collins Street
Lowville, Village of	Bateman Hotel	7574 S. State Street
Lowville, Village of	Lewis County Fairgrounds	Bostwick Street
Lowville, Village of	Lewis County Soldiers' and Sailors' Monument	Village Green, NY26 and Bostwick Street
Lowville, Village of	Lowville Presbyterian Church	7707 North State Street
Lowville, Village of	Lowville Masonic Temple	7552 South State Street
Lyons Falls, Village of	Gould Mansion Complex	Main Street
Lyons Falls, Village of	Forest Presbyterian Church and Manse	4109 Center Street
Lyonsdale, Town of	"The Pines"	3998-4000 Lyons Falls Road
Martinsburg, Town of	Methodist Episcopal Church of West Martinsburg	West Martinsburg Road
Martinsburg, Town of	Martinsburg Town Hall	NY 12 D-NY 26
Martinsburg, Town of	General Walter Martin House	6575 Main Street (NY 26)
Osceola, Town of	Osceola Town Hall (Former Methodist Church)	Colvin Road
Port Leyden, Village of	Saint Mark's Church	West Main Street
Watson, Town of	*Pine Grove Community Church*	*Austin Road and Pine Grove Road*
West Turin, Town of	Jonathan C. Collins House and Cemetery	West Road

The Franklin B. Hough House in Lowville is a brick Italianate mansion built in 1863 for Franklin B. Hough, first chief of the United States Division of Forestry (predecessor of todayôs United States Forest Service), who is sometimes referred to as the ñFather of American Forestryò. In addition to being listed on the National Register of Historic Places, the house is also designated a National Historic Landmark.

Table 3b.8
Historical and Cultural Resources Exposed to Delineated Hazards

Jurisdiction	Asset Name/Description	Flood (Zone A/AE)	Earthquake (Soil Type E[1])	Wildfire
Constableville, Village of	Constableville Village Historic District	y	y	y
Croghan, Village of	Croghan Island Mill	y	y	
Croghan, Village of	Blacksmithôs Shop		y	
Croghan, Village of	American Maple Museum		y	
Croghan, Village of	Railway Historical Society		y	
Croghan, Village of	St. Stephenôs Church		y	
Leyden, Town of	Constable Hall		y	y
Leyden, Town of	Edmund Wilson House		y	
Lowville, Village of	Franklin B. Hough House			
Lowville, Village of	Bateman Hotel			
Lowville, Village of	Lewis County Fairgrounds			
Lowville, Village of	Lewis County Soldiersô and Sailorsô Monument			
Lowville, Village of	Lowville Presbyterian Church			
Lowville, Village of	Lowville Masonic Temple			
Lyons Falls, Village of	Gould Mansion Complex		y	
Lyons Falls, Village of	Forest Presbyterian Church and Manse		y	
Lyonsdale, Town of	"The Pines"		y	y
Martinsburg, Town of	Methodist Episcopal Church of West Martinsburg			y
Martinsburg, Town of	Martinsburg Town Hall			
Martinsburg, Town of	General Walter Martin House			
Osceola, Town of	Osceola Town Hall (Former Methodist Church)			
Port Leyden, Village of	Saint Mark's Church			y
Watson, Town of	*Pine Grove Community Church*			■
West Turin, Town of	Jonathan C. Collins House and Cemetery		y	

Note 1: No historical or cultural resources were found to be underlain by soil type D.

All historical and cultural resources are considered vulnerable to county-wide hazards such as temperature and wind, winter storms, and earthquakes. For the County overall there is a 10% chance of earthquakes with peak ground acceleration of *at least* 3% of gravity occurring in any 50-year period. There are no known delineations for the areas affected specifically by flooding caused by ice jams, and droughts are assumed not to physically affect structures.

Population

The countywide population as determined by the 2000 Census was 26,944 in 10,040 households and the U.S Census Bureau projected the 2008 population to be 26,176 - a decrease of just over two percent under the 2000 Census. More information regarding likely future population trends can be found in the discussion of Land Use and Development Trends in a later section of the Plan report. Table 3b.9 presents the breakdown of the county population and household totals in 2000 by participating jurisdiction.

Table 3b.9
Population and Households by Jurisdiction (2000 Census[1])

Jurisdiction	Population		Households	
	Total	Percent of County	Total	Percent of County
Castorland, Village of	306	1.1%	115	1.1%
Constableville, Village of	305	1.1%	125	1.2%
Copenhagen, Village of	*865*	*3.2%*	*318*	*3.2%*
Croghan, Town of[2]	2,784	10.3%	1,115	11.1%
Croghan, Village of	665	2.5%	284	2.8%
Denmark, Town of	1,576	5.8%	977	9.7%
Diana, Town of	1,008	3.7%	642	6.4%
Greig, Town of	1,365	5.1%	533	5.3%
Harrisburg, Town of	423	1.6%	139	1.4%
Harrisville, Village of	*653*	*2.4%*	*266*	*2.6%*
Lewis, Town of	857	3.2%	296	2.9%
Leyden, Town of[2]	1,320	4.9%	676	6.7%
Lowville, Town of	1,072	4.0%	1,796	17.9%
Lowville, Village of	3,476	12.9%	1,403	14.0%
Lyons Falls, Village of	591	2.2%	238	2.4%
Lyonsdale, Town of[2]	1,023	3.8%	468	4.7%
Martinsburg, Town of	1,249	4.6%	473	4.7%
Montague, Town of	108	0.4%	45	0.4%
New Bremen, Town of[2]	*2,434*	*9.0%*	*945*	*9.4%*
Osceola, Town of	265	1.0%	112	1.1%
Pinckney, Town of	319	1.2%	120	1.2%
Port Leyden, Village of	665	2.5%	257	2.6%
Turin, Town of	*530*	*2.0%*	*296*	*2.9%*
Turin, Village of	*263*	*1.0%*	*101*	*1.0%*
Watson, Town of[2]	*1,987*	*7.4%*	*775*	*7.7%*
West Turin, Town of	835	3.1%	635	6.3%
County Total	**26,944**	**100%**	**10,040**	**100%**

Note 1: Detailed breakdown data for years later than 2000 is not yet available for all municipalities.

Note 2: Household totals for these towns include households in villages whose municipal areas cover parts of more than one town and for which detailed household breakdowns are not available:

- Town of Croghan: Includes part of the Village of Croghan
- Town of New Bremen: Includes part of the Village of Croghan
- Town of West Turin: Includes part of the Village of Lyons Falls
- Town of Lyonsdale: Includes part of the Village of Lyons Falls and part of the Village of Port Leyden
- Town of Leyden: Includes part of the Village of Port Leyden

For the purposes of this plan, ñvulnerableò has been taken to mean residents of the county aged under five or over 65 years. Compared to the majority of the county population, people of these ages are assumed to require extra medical care and additional resources, particularly in the event of emergency evacuation. When viewed in combination with the data in Table 3b.5 and subsequent assessments of assets in individual hazard areas, this data may be used to highlight areas which may benefit from increased focus in the development of mitigation goals and strategies.

Table 3b.10 indicates that about 20 percent of the population of the planning area can be termed ñvulnerableò, and that the municipality with the highest proportion of vulnerable residents is the Village of Lowville, while the Town of Pinckney has the lowest. Within the vulnerable sector of the population, the percentage of seniors outnumbers that of small children in every municipality except the Village of Copenhagen, which is the only municipality in which small children account for more than 10% of the population. In every other municipality and in the County overall seniors outnumber small children by an average ratio of more than 2 to 1. On average, small children account for 6.1% of municipal populations, while seniors account for 14.3%.

Table 3b.10
Vulnerable Sectors of the Population by Jurisdiction (2000 Census[1])

Jurisdiction	Total Population	Under 5 Years	Percent of Municipal Total	65 Years and over	Percent of Municipal Total	Total Vulnerable Population	Percent of Municipal Total
Castorland, Village of	306	20	6.5%	46	15.0%	66	21.6%
Constableville, Village of	305	19	6.2%	48	15.7%	67	22.0%
Copenhagen, Village of	*865*	*100*	*11.6%*	*69*	*8.0%*	*169*	*19.5%*
Croghan, Town of[2]	2,784	185	5.9%	369	11.7%	554	17.5%
Croghan, Village of	665	33	5.0%	147	22.1%	180	27.1%
Denmark, Town of	1,576	214	7.8%	268	9.8%	482	17.5%
Diana, Town of	1,008	101	6.1%	208	12.5%	309	18.6%
Greig, Town of	1,365	75	5.5%	199	14.6%	274	20.1%
Harrisburg, Town of	423	27	6.4%	36	8.5%	63	14.9%
Harrisville, Village of	*653*	*40*	*6.1%*	*105*	*16.1%*	*145*	*22.2%*
Lewis, Town of	857	48	5.6%	95	11.1%	143	16.7%
Leyden, Town of[2]	1,320	101	5.6%	219	12.2%	320	17.9%
Lowville, Town of	1,072	252	5.5%	948	20.8%	1,200	26.4%
Lowville, Village of	3,476	200	5.8%	747	21.5%	947	27.2%
Lyons Falls, Village of	591	43	7.3%	99	16.8%	142	24.0%
Lyonsdale, Town of[2]	1,023	84	6.6%	165	13.0%	249	19.6%
Martinsburg, Town of	1,249	92	7.4%	158	12.7%	250	20.0%
Montague, Town of	108	6	5.6%	15	13.9%	21	19.4%
New Bremen, Town of[2]	*2,434*	*176*	*6.5%*	*308*	*11.3%*	*484*	*17.8%*
Osceola, Town of	265	14	5.3%	36	13.6%	50	18.9%
Pinckney, Town of	319	13	4.1%	32	10.0%	45	14.1%
Port Leyden, Village of	665	38	5.7%	127	19.1%	165	24.8%
Turin, Town of	*530*	*47*	*5.9%*	*122*	*15.4%*	*169*	*21.3%*
Turin, Village of	*263*	*10*	*3.8%*	*46*	*17.5%*	*56*	*21.3%*
Watson, Town of[2]	*1,987*	*105*	*5.3%*	*283*	*14.2%*	*388*	*19.5%*
West Turin, Town of	835	115	6.9%	249	14.9%	364	21.7%
County Total	**26,944**	**1,655**	**6.1%**	**3,710**	**13.8%**	**5,365**	**19.9%**

Note 1: Detailed breakdown data for years later than 2000 is not yet available for all municipalities.
Note 2: Vulnerable population totals for these towns include households in villages whose municipal areas cover parts of more than one town and for which detailed household breakdowns are not available (see Footnote 2 under Table 3b.7).

SECTION 3c - RISK ASSESSMENT: *ESTIMATED DAMAGES IN HAZARD AREAS*

44 CFR Part 201.6 (c)(2)(ii)(B) states, ñ[The plan should describe vulnerability in terms of an] estimate of the potential dollar losses to vulnerable structures identified in paragraph (c)(2)(i)(A) of this section and a description of the methodology used to prepare this estimateé ò This section of the Plan is intended to satisfy this requirement.

Methodology

This plan aims to assess vulnerability to various hazards within the limitations of the available data, where generally accepted measures of vulnerability are established. Parcel data included assessed values for land and total assessed values; assessed values for improvements were calculated by subtracting the land value from the total value, as described in Section 3b. Expanding upon the parcel data in the Countyôs GIS to include such information as building square footage, year built, type, foundation type, and condition, would allow for a more accurate assessment of vulnerability. Therefore, the Planning Committee has considered actions in this regard. Please see further sections of this plan for additional information on actions considered and ultimately selected.

To ensure that meaningful conclusions could be drawn across the range of susceptible hazards, the plan presents an estimation of annual damages for each hazard (as opposed to event damages or damages associated with a certain recurrence interval), in all cases where generally accepted methodologies exist for estimating potential dollar losses to vulnerable structures, and where sufficient data was readily available to employ these methodologies. FEMA guidance currently acknowledges that for some of the hazards in Lewis County, there are no standard methodologies suitable for application in the mitigation planning context. During future updates of this plan, additional efforts should be made to seek out sources of data and approved methodologies with which to estimate potential annualized dollar losses for those hazards that lack them in this current draft plan.

Atmospheric Hazards

Estimated Damages – Extreme Temperatures

While all of Lewis County is exposed to extreme temperatures, existing buildings, infrastructure and critical facilities are not considered significantly vulnerable to substantial damage caused by extreme heat or cold events. Therefore any estimated property losses associated with these hazards are anticipated to be minimal across the planning area. Extreme temperatures do, however, present a significant life and safety threat to the planning areaôs population.

Heat casualties are usually caused by lack of adequate air conditioning or heat exhaustion. The most vulnerable population to heat casualties are the elderly or infirmed, who frequently live on low fixed incomes and cannot afford to run air-conditioning on a regular basis. This population is sometimes isolated, with no immediate family or friends to look out for their well being.

Casualties resulting from extreme cold may result from a lack of adequate heat, carbon monoxide poisoning from unsafe heat sources and frostbite. The most vulnerable populations to cold casualties are the elderly or infirmed as well as low income households, as they may not be able to afford to operate a heat source on a regular basis and may not have immediate family or friends to look out for their well being.

Given the lack of specific historical data and limited likelihood for structural losses resulting from extreme heat or cold occurrences in the planning area, and that placing dollar damage amounts on non-structural costs, such as damages to human health, are beyond the scope of this study, annualized economic losses for each municipality in the county due to extreme temperatures are currently considered to be unquantifiable, but most likely negligible.

Estimated Damages – Extreme Winds

Data available at the time of the study was not sufficient to estimate detailed damages to structures due to extreme winds. At this time, overall vulnerability can be expressed as the value of improvements exposed to the hazard (as defined in the ñHazard Profilesò section). Because it cannot be predicted where extreme winds may occur, all existing and future buildings, facilities and populations in all municipalities in the county are considered to be exposed to this hazard and could potentially be impacted.

While FEMA methodologies do exist to estimate structure damages due to extreme wind, a great deal of specific information is required for buildings in order to employ these methodologies, such as type of construction and details on any existing protective features. This data was not included in GIS datasets supplied by Lewis County and was not readily available from other sources.

Additionally, having even the year built data for each structure, one would be able to highlight structures built before codes and standards were adopted to make buildings more resistant to wind damage, thus being better candidates for mitigation. Without the year-built data, this can not be done.

The NCDC database records more than 100 extreme wind events affecting Lewis County in the period 1966 through 2009, with damages recorded for most events from August 1993 onwards. While these events caused more than $41 million in damages in total, for many of the larger events the recorded damages are region-wide figures which include damages in neighboring counties. However, making some basic assumptions such as splitting the larger figures evenly between the listed involved counties, it is possible to arrive at a total figure for wind-induced damages in Lewis County of approximately $17.5 million since 1993, or almost $1.1 million per year. Since there is assumed to be no significant variation in the risk of high wind occurrence across the county, the proportion of this annual damage experienced by each municipality has been assumed to be proportional to the total improved property (structure) values, as presented in Table 3c.1.

Table 3c.1
Estimated Annual Average Damages – High Winds
Period of Record: 1993 ï 2009 (NCDC)

Jurisdiction	Total Value of Improvements	Distributed Annual Loss Estimate High Winds
Castorland, Village of	$4,051,601	$5,450
Constableville, Village of	$10,939,719	$14,716
Copenhagen, Village of	*$25,876,310*	*$34,808*
Croghan, Town of	$240,302,735	$323,245
Croghan, Village of	$48,524,225	$65,273
Denmark, Town of	$43,917,282	$59,076
Diana, Town of	$29,808,074	$40,097
Greig, Town of	$46,824,943	$62,987
Harrisburg, Town of	$13,496,355	$18,155
Harrisville, Village of	*$12,967,001*	*$17,443*
Lewis, Town of	$27,190,757	$36,576
Leyden, Town of	$25,439,385	$34,220

Table 3c.1 Estimated Annual Average Damages – High Winds Period of Record: 1993 ï 2009 (NCDC)		
Jurisdiction	**Total Value of Improvements**	**Distributed Annual Loss Estimate High Winds**
Lowville, Town of	$28,836,993	$38,790
Lowville, Village of	$73,218,605	$98,491
Lyons Falls, Village of	$32,199,666	$43,314
Lyonsdale, Town of	$39,646,201	$53,330
Martinsburg, Town of	$2,055,970	$2,766
Montague, Town of	$3,726,603	$5,013
New Bremen, Town of	*$7,111,498*	*$9,566*
Osceola, Town of	$9,444,244	$12,704
Pinckney, Town of	$12,107,958	$16,287
Port Leyden, Village of	$11,103,000	$14,935
Turin, Town of	*$27,287,274*	*$36,706*
Turin, Village of	*$4,525,600*	*$6,088*
Watson, Town of	*$5,451,415*	*$7,333*
West Turin, Town of	$26,267,792	$35,334
Lewis County Total	**$812,321,205**	**$1,092,700**

Included in FEMA tools and methodologies for the estimation of damages due to wind is a standard figure for economic losses due to power outages. Currently FEMA values the loss of electrical service at $126 per person served per day of interrupted service. If the event damages used to compile Table 3c.1 are assumed to consist only of structural damage and other costs such as debris removal, then it is likely that economic losses due to power outages are an additional, as yet unquantifiable feature of extreme wind events, given that more than 50 wind events recorded by NCDC in Lewis County are documented as having caused damage to electrical transmission infrastructure and power outages since 1993.

While the NCDC database mentions frequent power outages resulting from high wind events, details of outage durations and populations affected specifically in Lewis are not clear. However, to illustrate the potential magnitude of power outage losses, the high wind event of July 15,1995 was reported in the press as leaving the whole of Lewis County without power at some point. If this interruption lasted six hours, then according to the FEMA methodology this represents an economic loss of around $800,000 for this event alone.

The primary provider of electrical power in Lewis County is National Grid, who has been requested to provide power outage data for this plan. The number of interruptions in recent years has been requested, along with causes, durations, and number of customers affected. National Grid was requested to provide this data, but no response had been received in time for inclusion in the draft plan. Future updates of this plan should make every effort to obtain this data to improve the estimates of damage and losses due to extreme winds.

Estimated Damages – Tornados

For the purpose of estimating annual tornado damages at this time, we have evaluated the NOAA NCDC database for tornado events in the full period for which NCDC records tornado event details for Lewis County (1959-2009). The NCDC database records four significant tornados in Lewis County ï two of magnitude F0 and two of magnitude F1. The NCDC database records that these events resulted in a total of approximately $95,000 in damages, or approximately $2,400 per year county-wide. Since the NSSL (See Figure 3a.5) estimates that tornados are encountered in the Lewis County area on average every five

to ten years, an estimate of likely future damages can be made by combining an assumed future occurrence probability of one every eight years and the average loss attributed to tornados for which some damages were recorded (approximately $25,000 per tornado), which gives an annualized damage over the whole County of $3,125 per year. Distributing this average loss among Lewis County municipalities according to their total improved property values (since the risk of tornado occurrence is essentially uniform across the County) yields the estimated individual annual damages presented in Table 3c.2: This estimate may be considered conservative, due to the shortage of historic data from which extrapolations can be made, and it should be remembered that while the annualized losses appear low, individual tornado events may still have locally devastating impacts.

Because it cannot be predicted where a tornado may touch down, all existing and future buildings, facilities, and populations are considered to be exposed to this hazard and could potentially be impacted.

Table 3c.2
Estimated Annual Average Damages – Tornado
Period of Record: 1959 ï 2009 (NCDC)

Jurisdiction	Total Value of Improvements	Distributed Annual Loss Estimate Tornado
Castorland, Village of	$4,051,601	$17
Constableville, Village of	$10,939,719	$42
Copenhagen, Village of	*$25,876,310*	*$100*
Croghan, Town of	$240,302,735	$924
Croghan, Village of	$48,524,225	$187
Denmark, Town of	$43,917,282	$169
Diana, Town of	$29,808,074	$115
Greig, Town of	$46,824,943	$180
Harrisburg, Town of	$13,496,355	$52
Harrisville, Village of	*$12,967,001*	*$50*
Lewis, Town of	$27,190,757	$105
Leyden, Town of	$25,439,385	$98
Lowville, Town of	$28,836,993	$111
Lowville, Village of	$73,218,605	$282
Lyons Falls, Village of	$32,199,666	$124
Lyonsdale, Town of	$39,646,201	$153
Martinsburg, Town of	$2,055,970	$8
Montague, Town of	$3,726,603	$14
New Bremen, Town of	*$7,111,498*	*$27*
Osceola, Town of	$9,444,244	$36
Pinckney, Town of	$12,107,958	$47
Port Leyden, Village of	$11,103,000	$43
Turin, Town of	*$27,287,274*	*$105*
Turin, Village of	*$4,525,600*	*$17*
Watson, Town of	*$5,451,415*	*$21*
West Turin, Town of	$26,267,792	$101
Lewis County Total	**$812,321,205**	**$3,125**

Estimated Damages – Winter Storms

Examination of NCDC records for snow and ice events as mentioned in Section 3a reveals that damaging snowfalls and ice storms are very frequent events in the Lewis County region, with a recorded more than 130 such events causing more than $96 million in damage in the 16-year period beginning in January

1993. However, damages for many of these events apply to a wide region covering multiple counties and further breakdowns giving damages by individual counties are not readily available from NCDC. However, making some basic assumptions such as splitting the regional figures evenly between the listed involved counties, it is possible to arrive at a total figure for snow and ice-induced damages in Lewis County of approximately $10 million since 1993, or approximately $625,000 per year. Since there is assumed to be no significant variation in the risk of winter storm occurrence across the county, the proportion of this annual damage experienced by each municipality has been assumed to be proportional to the total improved property (structure) values, as presented in Table 3b.3.

Table 3c.3
Estimated Annual Average Damages – Winter Storms
Period of Record: 1993 ï 2009 (NCDC)

Jurisdiction	Total Value of Improvements	Distributed Annual Loss Estimate Winter Storms
Castorland, Village of	$4,051,601	$3,120
Constableville, Village of	$10,939,719	$8,425
Copenhagen, Village of	*$25,876,310*	*$19,927*
Croghan, Town of	$240,302,735	$185,055
Croghan, Village of	$48,524,225	$37,368
Denmark, Town of	$43,917,282	$33,820
Diana, Town of	$29,808,074	$22,955
Greig, Town of	$46,824,943	$36,060
Harrisburg, Town of	$13,496,355	$10,393
Harrisville, Village of	*$12,967,001*	*$9,986*
Lewis, Town of	$27,190,757	$20,939
Leyden, Town of	$25,439,385	$19,591
Lowville, Town of	$28,836,993	$22,207
Lowville, Village of	$73,218,605	$56,385
Lyons Falls, Village of	$32,199,666	$24,797
Lyonsdale, Town of	$39,646,201	$30,531
Martinsburg, Town of	$2,055,970	$1,583
Montague, Town of	$3,726,603	$2,870
New Bremen, Town of	*$7,111,498*	*$5,477*
Osceola, Town of	$9,444,244	$7,273
Pinckney, Town of	$12,107,958	$9,324
Port Leyden, Village of	$11,103,000	$8,550
Turin, Town of	*$27,287,274*	*$21,014*
Turin, Village of	*$4,525,600*	*$3,485*
Watson, Town of	*$5,451,415*	*$4,198*
West Turin, Town of	$26,267,792	$20,229
Lewis County Total	**$812,321,205**	**$625,563**

As mentioned previously in the discussion on damages due to extreme winds, data and methodologies exist to allow the estimation of economic damages due to power outages. Damages to power transmission infrastructure leading to power outages are one of the most common impacts of winter storms, and as well as causing economic losses can have serious consequences for the health and safety of the population served, if they are denied power for heat, lighting, and cooking for any length of time. As mentioned above, the relevant data has been requested from National Grid but has not been provided in time for inclusion in the draft plan. Future updates of this plan should make every effort to obtain this data to improve the estimates of damage due to winter storms.

Hydrologic Hazards

Estimated Damages – Dam Failure

Sufficient data was not available at the time of the study to estimate damages due to dam failure. Since clear inundation mapping was not readily available for dams in Lewis County, it has not been possible to estimate vulnerability in terms of improved values within inundation areas for this version of the plan. It is recommended that efforts associated with future updates of the plan include formally obtaining or developing detailed inundation mapping or studies which result in same, at least for the five designated high hazard dams in the County for use in emergency response and mitigation planning.

Given the lack of historical data for significant dam failure occurrences and data related to the current condition and integrity of dam structures, and that it would be inappropriate to make assumptions regarding the effectiveness of future dam inspection and maintenance activities, it is assumed that significant dam breaches or failures are an extremely rare event. Therefore, while any single major event may result in significant losses, *annualizing* such losses over a long period of time would most likely yield a negligible annual loss estimate for jurisdictions exposed to this hazard.

Estimated Damages – Drought

According to FEMAôs How-To #2, there are currently no standard loss estimation methodologies available for estimating drought damages for the purposes of hazard mitigation planning. If new information or techniques should become available in the future, it could be incorporated into future updates of the plan. While blanket assumptions could be made regarding the overall economic impact of drought, at this time to use various tools for loss estimation, this would likely yield erroneous data given the high degree of variation in type and density of development. Acting upon such rough estimates could result in an unwise use of limited resources. At this time, overall vulnerability is being expressed in qualitative terms in terms of types of damages.

Because drought impacts large areas and cross jurisdictional boundaries, all existing and future buildings, facilities and populations are considered to be exposed to this hazard and could potentially be impacted. However, drought impacts are mostly experienced in water shortages (affecting domestic uses and businesses) and crop losses on agricultural lands and have no impact on buildings.

Crop failure is one common impact of drought. According to the 2007 USDA Census of Agriculture, Lewis County has 616 farms covering approximately 167,249 acres in total. The Census notes that farmland in Lewis County is 55 percent cropland, 27 percent woodland, and 10 percent pastureland, while the remaining eight percent is dedicated to other uses. The market value of production on Lewis County farms in 2007 was $112.6 million, or $182,000 per farm. In 2007 Lewis County ranked 15th out of 62 counties in the State of New York by the value of agricultural products sold. By far the greatest proportion of agricultural sales in the county (94 percent) was attributable to livestock sales, while the remaining six percent was accounted for by crop sales. Further data breaking down the types and amounts of produce grown in each individual municipality were not readily available at the time of writing.

While agricultural losses during a drought, specifically losses to crops and produce, could be significant to individual farm operators, the overall impact of agricultural losses on the County economy is likely to be slight. When drought begins, the agricultural sector is usually the first to be impacted because of its heavy reliance on stored soil water, which can rapidly be depleted during extended dry periods. When

precipitation returns to normal, impacts on the agricultural sector are quick to diminish again due to the reliance on stored soil moisture.

For the purpose of estimating annual drought damages at this time, we have evaluated the NOAA NCDC database for drought events in the full period for which NCDC records drought event details for Lewis County (1993-2009). The NCDC database records one significant drought event which specifically lists Lewis County as an affected area since August 1993, the point at which NCDC drought records begin in New York State. The NCDC database records that this event (the drought of August to December 1993) affected all 62 counties in New York State and resulted in $50 million in crop losses state-wide. Estimates of grain feed losses for affected counties were between 40 and 100 percent, and hay, corn, fruit and vegetable crops were also hard hit. In other counties in the affected region, crop losses due to the 1993 drought were estimated at 50 to 60% percent of total crop sales, based on the 1992 USDA Agriculture Census. Applying the same percentage (55 percent) of loss to current crop production values (2007 total crop sales of $6,664,000), annualizing over the NCDC record period (16 years), and distributing the total among the municipalities according to their share of cultivated agricultural land produces the estimated annual loss figures presented in Table 3c.4.

This methodology does not take into account the degree of variation in value of various crop types between the municipalities, or the degree of drought resistance, and should be used for mitigation planning purposes only. This is considered to be a significantly conservative estimate, since it relies on only one event with associated damages since 1993, a period in which there have been additional drought events for which crop damages are likely to have occurred but were not recorded by NCDC or any other readily available data source.

Table 3c.4
Annual Loss Estimates – Drought
Period of Record: 1993 ï 2009 (NCDC)

Jurisdiction	Total Acres Cultivated Crop Land (Acres)	Percent of Total Cultivated Crop Land in Lewis County	Distributed Annual Loss Estimate, Drought
Castorland, Village of	44	0.12%	$277
Constableville, Village of	131	0.36%	$824
Copenhagen, Village of	*147*	*0.40%*	*$924*
Croghan, Town of	2,546	6.99%	$16,007
Croghan, Village of	22	0.06%	$138
Denmark, Town of	6,323	17.35%	$39,754
Diana, Town of	40	0.11%	$251
Greig, Town of	282	0.77%	$1,773
Harrisburg, Town of	2,198	6.03%	$13,819
Harrisville, Village of	*7*	*0.02%*	*$44*
Lewis, Town of	396	1.09%	$2,490
Leyden, Town of	2,016	5.53%	$12,675
Lowville, Town of	6,983	19.17%	$43,904
Lowville, Village of	60	0.16%	$377
Lyons Falls, Village of	26	0.07%	$163
Lyonsdale, Town of	98	0.27%	$616
Martinsburg, Town of	6,544	17.96%	$41,144
Montague, Town of	29	0.08%	$182
New Bremen, Town of	*2,571*	*7.06%*	*$16,164*
Osceola, Town of	28	0.08%	$176

Table 3c.4 Annual Loss Estimates – Drought Period of Record: 1993 ï 2009 (NCDC)			
Jurisdiction	**Total Acres Cultivated Crop Land (Acres)**	**Percent of Total Cultivated Crop Land in Lewis County**	**Distributed Annual Loss Estimate, Drought**
Pinckney, Town of	412	1.13%	$2,590
Port Leyden, Village of	7	0.02%	$44
Turin, Town of	*2,655*	*7.29%*	*$16,693*
Turin, Village of	*144*	*0.40%*	*$905*
Watson, Town of	*608*	*1.67%*	*$3,823*
West Turin, Town of	2,118	5.81%	$13,316
Lewis County Total	**36,435**	**100.00%**	**$229,075**

Water supply shortages are a second effect of drought. While water shortages and use restrictions imposed as a result of drought conditions have a detrimental effect on many businesses, particularly certain sectors of the manufacturing industry, calculating actual dollar losses resulting from shortages and use restrictions is beyond the current scope of this study. Lewis Countyôs total withdrawal of fresh water for public supply is 2.27 million gallons per day, with 46 percent from groundwater sources and 54 percent from surface water sources. Groundwater is fairly resistant to drought conditions, while surface water is more immediately susceptible to the effects of drought. The extent to which crops in the participating communities are vulnerable to drought conditions will depend to a great extent on from where they draw their water supply.

A third common affect of drought is fish and wildlife mortality. More than 60 percent of the county is undeveloped land (either used for agricultural purposes, vacant, or dedicated parkland/open space) with diverse populations of fish and wildlife, and abundant creeks, aquifers and reservoirs providing essential water resources. Because Lewis County has significant undeveloped land, aquatic and other wildlife habitat is fairly significant and therefore losses to fish and wildlife could potentially be significant.

A fourth common affect of drought is the increased incidence and severity of wildfires. The baseline risk of wildfire in Lewis County is significant, with 68 percent of the land area and 40 percent of the total estimated improved property value located within wildfire hazard areas. Wildfires are a unique hazard addressed separately in this plan.

Estimated Damages – Flood

Sufficient data was not available at the time of the study to undertake detailed formal estimates of damages due to flooding. At this time, vulnerability is being expressed as the value of improvements in the current mapped flood hazard areas as presented in the ñHazard Profilesò section of this plan. First, while FEMA methodologies do exist to estimate damages due to flooding, specific information is required for buildings in order to employ these methodologies, such as first floor elevation, type of construction, foundation type, and details on any existing protective features. This data was not included in the GIS data provided for this study.

Second, having even the year built data for each structure, one would be able to highlight structures built before codes and standards were adopted to make buildings more resistant to flood damage, thus being better candidates for mitigation. Without the year-built data, this can not be done. If this information

should become available in the future, it could be incorporated into future updates of the plan. While one could make some blanket assumptions at this time to use various tools for loss estimation, this would likely yield erroneous data. Acting upon such rough estimates could result in an unwise use of limited resources.

For the purpose of estimating annual flood damages at this time, the NOAA NCDC database has been evaluated for flood events in Lewis County in the last 15 years (1994-2009, i.e. the period for which NCDC records flood events in Lewis County in any detail), which records approximately $1.3 million in damages assumed to be specifically occurring in Lewis County during this period.

Other readily available sources of data for flood losses in the county include FEMA NFIP records, which show that there has been a total of $400,697 in flood insurance payments made to cover flood damage to structures in Lewis County since the first municipalities in the County joined the NFIP in 1974. Combining these two sources of data with some additional local information and annualizing over the periods they cover gives total annualized flood damages of just over $96,000 for the whole County.

Because the flood hazard is not uniform across the county, the annual damage derived from NCDC data has been distributed across the municipalities in the County based on the total value of improved property in the 1% annual probability floodplain (Zones A and AE) in each one. These scaled damages have been added to the annualized NFIP losses to derive the total damages presented in Table 3c.5. These estimates should be considered extremely conservative, due to the limited amount and incomplete nature of the relevant historical data.

Table 3c.5
Estimated Annual Damages – Flood
(Source: NCDC/NFIP)
Period of record: 1994 ï 2009 (NCDC), 1978 ï 2009 (NFIP)

Jurisdiction	Total Value of Improvements	Total Value of Improvements in the Flood Hazard Area*	Annual Loss Estimates; Flood
Castorland, Village of	$4,051,601	$0	$646
Constableville, Village of	$10,939,719	$470,931	$230
Copenhagen, Village of	*$25,876,310*	*$0*	*$0*
Croghan, Town of	$240,302,735	$121,818,187	$59,680
Croghan, Village of	$48,524,225	$2,595,831	$1,269
Denmark, Town of	$43,917,282	$2,876,564	$4,431
Diana, Town of	$29,808,074	$4,568,841	$2,786
Greig, Town of	$46,824,943	$9,347,578	$5,696
Harrisburg, Town of	$13,496,355	$0	$0
Harrisville, Village of	*$12,967,001*	*$741,824*	*$363*
Lewis, Town of	$27,190,757	$5,915,886	$4,712
Leyden, Town of	$25,439,385	$2,116,961	$1,435
Lowville, Town of	$28,836,993	$1,048,111	$513
Lowville, Village of	$73,218,605	$319,234	$283
Lyons Falls, Village of	$32,199,666	$2,630,123	$3,955
Lyonsdale, Town of	$39,646,201	$12,625,399	$6,174
Martinsburg, Town of	$2,055,970	$189,792	$93
Montague, Town of	$3,726,603	$0	$0
New Bremen, Town of	*$7,111,498*	*$520,232*	*$254*
Osceola, Town of	$9,444,244	$191,996	$94
Pinckney, Town of	$12,107,958	$0	$0

Table 3c.5 Estimated Annual Damages – Flood *(Source: NCDC/NFIP)* Period of record: 1994 ï 2009 (NCDC), 1978 ï 2009 (NFIP)			
Jurisdiction	**Total Value of Improvements**	**Total Value of Improvements in the Flood Hazard Area***	**Annual Loss Estimates; Flood**
Port Leyden, Village of	$11,103,000	$740,014	$486
Turin, Town of	*$27,287,274*	*$252,898*	*$982*
Turin, Village of	*$4,525,600*	*$430,066*	*$210*
Watson, Town of	*$5,451,415*	*$717,798*	*$1,822*
West Turin, Town of	$26,267,792	$0	$0
Lewis County Total	**$812,321,205**	**$170,118,266**	**$96,113**

*Zones A, AE, only

Estimated Damages – Ice Jams

Flooding caused by ice jams is similar to flash flooding. Ice jam formation causes a rapid rise of water at the jam and extending upstream. Failure or release of the jam causes sudden flooding downstream. Damage from ice jam flooding usually exceeds that caused by open water flooding. Flood elevations are usually higher than predicted for free-flow conditions and water levels may change rapidly. Additional physical damage is caused by the force of ice impacting buildings and other structures. Because of the sometimes unpredictable nature of ice jam floods, FEMAôs Flood Insurance Rate Maps often do not reflect ice jam flood threats.

It is difficult to identify particular areas that are generally prone to ice jam flooding because the hazard can be very localized. The formation of ice jams depends on the weather and physical conditions in river channels. Unlike the typical violent flash flooding occurrences where steep terrain is present, ice jams are most likely to occur where the channel slope naturally decreases, where culverts freeze solid at headwaters of reservoirs, at natural channel restrictions such as bends and bridges, and along shallows where channels may freeze solid. While ice jams and associated damages are assumed to be possible in seven Lewis County municipalities where past occurrences are documented, based on a review of historical records, Flood Insurance Studies, the USACE CRREL database of events, and information provided by Core Planning Group members, there remains the possibility that additional locations may have experienced undocumented ice jams in the past or may experience them in the future.

Due to the nature of the topography and the climate in Lewis County, ice jam events are essentially certain to occur in the future, although whether or not such events will cause significant damage is less easy to predict, since detailed records of actual damage caused by ice jams are scarce. Standard loss estimation methodologies are not currently available for computing ice jam damages, and the available data (historical records, Flood Insurance Studies, and local information) also does not easily allow for a meaningful average damage to be calculated since information on historic damages incurred per event was unavailable and flood insurance only covers damage from the potential flooding, not from ice damage. For damage estimation purposes, it was assumed that if historic damages for noted occurrences were significant, more detailed information would have been uncovered during the research phase of this project. The lack of quantifiable historic damages was deemed to imply a likelihood of negligible average annual damages specifically caused by ice jams for the susceptible municipalities (where negligible has been defined as less than $5,000 per year). This assumption should be revisited in future updates of the plan if comprehensive data should become available.

Geologic Hazards

Estimated Damages – Earthquakes

As stated previously in the plan in the Hazard Profile section, according to the Earthquake Hazard Map of New York State, there is a 10 percent chance over 50 years that an earthquake with a PGA of greater than three to five percent of gravity will be centered within Lewis County. This earthquake, if it were to occur, would likely have associated with it light to moderate perceived shaking and little to no damage. PGAs of between eight and 10%g would most often be required to cause appreciable damage, say, to unreinforced masonry buildings. While it is true that earthquakes are possible in this part of New York, events causing widespread significant damage in Lewis County have a very low probability of occurrence, and those that are more likely to occur would not be expected to be particularly intense or cause significant damage. Therefore, a full earthquake loss estimation was not conducted at this time for individual jurisdictions. However, countywide data included in the State Plan has been evaluated and is presented later in this section.

Examples of the types of damages that could be observed during an earthquake with a PGA of 3 to 5%g include:

- ⇒ Felt indoors by many, outdoors by few during the day
- ⇒ At night, some awakened.
- ⇒ Dishes, windows, doors disturbed and possibly broken
- ⇒ Walls make cracking sounds
- ⇒ Unstable objects could be overturned
- ⇒ Sensation like heavy truck striking building
- ⇒ Standing automobiles rocked noticeably

For earthquakes, the hazard area encompasses the entire study area and therefore all assets could be impacted.

FEMAôs How-To #2 suggests that for earthquake loss estimation, data regarding building type, type of foundation, building code design level, and date of construction, is required for a quality analysis. This is because certain structures are more susceptible to earthquake damage than others. In the State of New York, regulations accounting for earthquake risk exist for new construction. Older buildings, built before these standard building codes went into effect, are more susceptible to earthquake damage. Similarly, unreinforced masonry buildings are more likely to sustain earthquake damage. While extensive damage to even these structures is unlikely, based on the mapped hazard areas, identifying this subset of buildings is important, particularly with regard to critical facilities that may meet these criteria. This information was not readily available at the time of the study for the planning area.

The New York State Hazard Mitigation Plan includes HAZUS-MH simulations for earthquake losses in counties across New York State. The data prepared by the State estimates the potential earthquake losses for Lewis County presented in Table 3c.6. This includes; Total Exposure ï representing dollar value of all general building stock and calculated potential total losses (Capital Stock + Income Losses) for the four return periods of 2500, 1000, 500, & 250-years.

The State Plan goes on to show an estimated annualized total earthquake losses for Lewis County of $132,000, of which 88% ($116,000) is attributed to structure damage, and the remainder to income losses. The total figure ranks Lewis County 43rd for annualized earthquake losses among all of New York Stateôs 62 counties. For comparison purposes, the highest annualized losses were calculated in Kings County ($10,093,000) and the lowest were calculated in Schuyler County at ($19,000). However, when factoring

in National Earthquake Hazard Reduction Program soil classes, the estimated annualized earthquake loss for Lewis County drops to $24,863, 55th out of all New York State Counties

Table 3c.6
Total Earthquake Losses – Lewis County
For Selected Return Periods
(Source: New York State Hazard Mitigation Plan)

Return Period (Years)	Total Losses
2,500	$104,659
1,000	$30,427
500	$12,426
250	$4,050

To provide a more detailed picture of potential earthquake losses in Lewis County, estimated annualized earthquake losses (adjusted for soil amplification) to structures for the County ($24,863) have been distributed among the municipalities according to their estimated total value of improvements, and the results are presented in Table 3c.7.

Table 3c.7
Estimated Annual Average Damages – Earthquake
(Based on HAZUS-MH analyses run for the NY State Plan)

Jurisdiction	Total Value of Improvements	Annual Loss Estimate, Earthquakes
Castorland, Village of	$4,536,601	$134
Constableville, Village of	$11,969,739	$362
Copenhagen, Village of	*$26,225,170*	*$856*
Croghan, Town of	$259,596,262	$7,947
Croghan, Village of	$48,524,225	$1,605
Denmark, Town of	$51,035,932	$1,452
Diana, Town of	$33,233,076	$986
Greig, Town of	$52,613,343	$1,548
Harrisburg, Town of	$19,470,912	$446
Harrisville, Village of	*$15,891,401*	*$429*
Lewis, Town of	$49,834,257	$899
Leyden, Town of	$30,798,285	$841
Lowville, Town of	$36,607,940	$954
Lowville, Village of	$73,478,434	$2,421
Lyons Falls, Village of	$32,514,533	$1,065
Lyonsdale, Town of	$43,943,874	$1,311
Martinsburg, Town of	$3,315,970	$68
Montague, Town of	$3,801,003	$123
New Bremen, Town of	*$8,089,227*	*$235*
Osceola, Town of	$9,948,744	$312
Pinckney, Town of	$13,882,466	$400
Port Leyden, Village of	$11,456,300	$367
Turin, Town of	*$31,441,775*	*$902*
Turin, Village of	*$4,818,500*	*$150*
Watson, Town of	*$5,843,340*	*$180*
West Turin, Town of	$32,111,809	$869
Lewis County Total	**$914,983,118**	**$24,863**

Estimated Damages – Landslides

Sufficient data was not available at the time of the study to estimate damages due to landslides. While the number of recorded landslide events in Lewis County is sufficient for landslides to be a considered a hazard of concern for the purposes of this plan, there are no mapped areas of elevated risk and the County as a whole is designated ñLowò risk by USGS. At this time, vulnerability is being expressed as the value of improvements in the current mapped landslide hazard area (of high susceptibility, low incidence) presented in Table 3a.21 in the ñHazard Profilesò section of this plan.

According to FEMAôs How-To #2, standard loss estimation methodologies are not available for estimating landslide damages for hazard mitigation planning purposes. While the guide indicates that structures within a landslide hazard area could be assumed to be ñseverelyò damaged and those outside could be assumed to be ñundamagedò, applying this methodology would not be appropriate for Lewis County given the lack of historical data from which to derive meaningful frequencies of landslide events necessary for the calculation of annual loss estimates and the overall low risk designation assumed for the County. In addition, specific information would be required for buildings in order to employ these methodologies, such as type of construction, foundation type, local topography, and details of any existing protective features. This data was not included in the County GIS data provided during this study.

If the year built data for each structure were available, one would be able to highlight structures built before codes and standards (such as steep slope ordinances) were adopted to make buildings more resistant to landslide damage, thus being better candidates for mitigation. Without the year-built data, this can not be done. If this information should become available in the future, it could be incorporated into future updates of the plan. While one could make some blanket assumptions at this time to use various tools for loss estimation, this would likely yield erroneous data given the high degree of variation in type and density of development. Acting upon such rough estimates could result in an unwise use of limited resources. In general terms, estimated damages due to a single landslide event could be severe in any one location, but given the current data and mapping it is assumed that while one major event may result in significant losses, annualizing structural losses over a long period of time would most likely yield a negligible annual loss estimate for this hazard.

Other Hazards

Estimated Damages – Wildfires

Available data such as the numbers and locations of wildfires and damages attributed to them was not sufficient at the time of the study to estimate damages due to wildfires. Despite the general opinion that significant wildfires have been a common occurrence in Lewis County, only a handful of specific documented incidents were found over 150 years, and none were accompanied by any detailed descriptions of damages or documented losses.

According to FEMAôs How-To #2, standard loss estimation methodologies are not currently available for estimating wildfire damages. In addition, specific information would be required for buildings in order to develop alternate methodologies, such as type of construction, and details on any existing protective features. This data was not available as a part of the County GIS during this study.

If the year built data was available for each structure in wildfire hazard areas, one would be able to highlight structures built before codes and standards were adopted to make buildings more resistant to

wildfire damage, thus being better candidates for mitigation. Without the year-built data, this can not be done. If this information should become available in the future, it could be incorporated into future updates of the plan. While one could make some blanket assumptions at this time to use various tools for loss estimation, this would likely yield erroneous data given the high degree of variation in type and density of development. Acting upon such rough estimates could result in an unwise use of limited resources.

Standard loss estimation methodologies are not currently available for estimating wildfire damages. Sufficient historical data regarding events and associated losses was not available to quantify here. For the purpose of this analysis, at this time we have determined that annual losses are unquantifiable. While damages associated with any single event could be significant, it is estimated that current damages are most likely negligible when evaluated on an average annual basis. However, with the construction of recreational camps and second homes in wooded areas identified as one of the primary development trends in Lewis County, annual damages caused by wildfire could rise to become significant in the future.

Estimated Damages - Summary

The following table (Table 3c.8)is a useful tool to summarize vulnerability in terms of annual damages estimated for various hazards in communities across the 26 municipalities that form Lewis County. For mitigation planning purposes only, municipalities could use this information in their evaluation and prioritization of mitigation options, and development of a mitigation strategy, as municipalities may wish to stress mitigation of those hazards for which annual loss estimates are the highest. These estimated damages are not intended for use in any more formal benefit-cost analyses.

U_N: Annual losses currently unquantifiable but assumed negligible (where ñnegligibleò assumed to be less than $5,000 annually)
U_S: Annual losses currently unquantifiable but potentially significant (where ñsignificantò assumed to be more than $5,000**)**

Table 3c.8
Summary of Annual Loss Estimates by Municipality, All Natural Hazards

Jurisdiction	Extreme Temperatures	Extreme Wind	Tornado	Winter Storm	Dam Failure	Drought	Flood	Ice Jam	Earthquake	Landslide	Wildfires
Castorland, Village of	U_N	$5,450	$17	$3,120	U_N	$277	$646	U_N	$134	U_N	U_S
Constableville, Village of	U_N	$14,716	$42	$8,425	U_N	$824	$230	U_N	$362	U_N	U_S
Copenhagen, Village of	*U_N*	*$34,808*	*$100*	*$19,927*	*U_N*	*$924*	*$0*	*U_N*	*$856*	*U_N*	*U_S*
Croghan, Town of	U_N	$323,245	$924	$185,055	U_N	$16,007	$59,680	U_N	$7,947	U_N	U_S
Croghan, Village of	U_N	$65,273	$187	$37,368	U_N	$138	$1,269	U_N	$1,605	U_N	U_S
Denmark, Town of	U_N	$59,076	$169	$33,820	U_N	$39,754	$4,431	U_N	$1,452	U_N	U_S
Diana, Town of	U_N	$40,097	$115	$22,955	U_N	$251	$2,786	U_N	$986	U_N	U_S
Greig, Town of	U_N	$62,987	$180	$36,060	U_N	$1,773	$5,696	U_N	$1,548	U_N	U_S
Harrisburg, Town of	U_N	$18,155	$52	$10,393	U_N	$13,819	$0	U_N	$446	U_N	U_S
Harrisville, Village of	*U_N*	*$17,443*	*$50*	*$9,986*	*U_N*	*$44*	*$363*	*U_N*	*$429*	*U_N*	*U_S*
Lewis, Town of	U_N	$36,576	$105	$20,939	U_N	$2,490	$4,712	U_N	$899	U_N	U_S
Leyden, Town of	U_N	$34,220	$98	$19,591	U_N	$12,675	$1,435	U_N	$841	U_N	U_S
Lowville, Town of	U_N	$38,790	$111	$22,207	U_N	$43,904	$513	U_N	$954	U_N	U_S
Lowville, Village of	U_N	$98,491	$282	$56,385	U_N	$377	$283	U_N	$2,421	U_N	U_S
Lyons Falls, Village of	U_N	$43,314	$124	$24,797	U_N	$163	$3,955	U_N	$1,065	U_N	U_S
Lyonsdale, Town of	U_N	$53,330	$153	$30,531	U_N	$616	$6,174	U_N	$1,311	U_N	U_S
Martinsburg, Town of	U_N	$2,766	$8	$1,583	U_N	$41,144	$93	U_N	$68	U_N	U_S
Montague, Town of	U_N	$5,013	$14	$2,870	U_N	$182	$0	U_N	$123	U_N	U_S
New Bremen, Town of	*U_N*	*$9,566*	*$27*	*$5,477*	*U_N*	*$16,164*	*$254*	*U_N*	*$235*	*U_N*	*U_S*
Osceola, Town of	U_N	$12,704	$36	$7,273	U_N	$176	$94	U_N	$312	U_N	U_S
Pinckney, Town of	U_N	$16,287	$47	$9,324	U_N	$2,590	$0	U_N	$400	U_N	U_S
Port Leyden, Village of	U_N	$14,935	$43	$8,550	U_N	$44	$486	U_N	$367	U_N	U_S
Turin, Town of	*U_N*	*$36,706*	*$105*	*$21,014*	*U_N*	*$16,693*	*$982*	*U_N*	*$902*	*U_N*	*U_S*
Turin, Village of	*U_N*	*$6,088*	*$17*	*$3,485*	*U_N*	*$905*	*$210*	*U_N*	*$150*	*U_N*	*U_S*
Watson, Town of	*U_N*	*$7,333*	*$21*	*$4,198*	*U_N*	*$3,823*	*$1,822*	*U_N*	*$180*	*U_N*	*U_S*
West Turin, Town of	U_N	$35,334	$101	$20,229	U_N	$13,316	$0	U_N	$869	U_N	U_S
Lewis County Total	**U_N**	**$1,092,700**	**$3,124**	**$625,563**	**U_N**	**$229,075**	**$96,113**	**U_N**	**$24,863**	**U_N**	**U_S**

SECTION 3d - RISK ASSESSMENT: EXISTING LAND USES AND FUTURE DEVELOPMENT TRENDS IN HAZARD AREAS

Historic

When counties were originally established in New York State in 1683, the present Lewis County was part of Albany County, an enormous area including not only northern New York State but also the whole of what is now the State of Vermont, and which had no defined western boundary. Over the next century or so this huge county was continually split and reduced in size by the formation of smaller counties, culminating (for the purposes of this plan) with the creation of present-day Lewis County from a portion of neighboring Oneida County in 1805.

The vast wilderness of Lewis County and the surrounding area was originally inhabited by the Oneida Indian Nation which thrived on the areaôs abundant natural resources. Substantial settlement and development in the county by Europeans did not occur until after the American Revolution, when Alexander Macomb, a wealthy merchant and land speculator, acquired title to this region from the Oneidas in 1791. "Macomb's Purchase" ï an area of 3,670,715 acres including much of northern New York State, along the St. Lawrence River and eastern Lake Ontario, including the Thousand Islands - was soon subdivided into large tracts and other holdings which stimulated the settlement of the region. From this purchase are derived the deeds for all the lands that are now included in Lewis, Jefferson, St. Lawrence and Franklin Counties, as well as portions of Herkimer and Oswego Counties.

The key to facilitating successful settlement of the region was transportation, and the first significant roads in the county were constructed from 1797 onwards. In 1803, construction of a road passing through the Black River Valley linking Turin and Lowville, before continuing to Watertown was authorized. Today this thoroughfare is designated as New York State Route 26 as far as Lowville and then designated as Route 12 to Watertown and continues to form a major north-south arterial route through the county. In 1836, construction began on the Black River Canal, a 35-mile long commercial waterway connecting the Black River at Lyons Falls to the Erie Canal at Rome in Oneida County. The canal was a substantial engineering undertaking, with a rise of almost 700 feet and with more than 100 locks. Construction to its northernmost extent was completed in 1855. Although the section of the canal north of Boonville in Oneida County was determined to be economically unviable in 1900 and subsequently closed, other sections of the canal remained in use until around 1920.

The earliest railroads in Lewis County began construction in 1853, with the Utica and Black River Railroad reaching Carthage in neighboring Jefferson County in 1871. By 1885, Lowville was being served by 10 passenger trains per day and this more efficient mode of transport, particularly for freight, triggered the decline of the Black River Canal. By the mid 1900s however, improvements to roads and the increase in motor vehicle traffic in turn caused the steady decline of local railroads, with passenger services being withdrawn from the Lowville line in the late 1940s.

The early transportation links, in particular the Black River Canal, facilitated the development of the local economy based on the products of agriculture and forestry. The combination of enormous natural resources and efficient transportation also lead to the development of substantial lumber, pulp and paper industries, with mills and factories in Castorland, Croghan, Diana, Lyons Fall, Port Leyden, and Grieg. The combination of thin soils and cool climate made Lewis County a prime location for cattle grazing, and dairy farming became an important local industry by the middle of the 19th century: By 1875 4,000 dairy farms and 49 cheese factories were operating in the County, primarily in the Black River Valley. Despite an overall increase in the area of land in farms, the actual number of farms decreased dramatically during the 20th century, to the point where there were a total of 616 farms in the County by 2007.

The 20th century also saw the development of significant manufacturing industry alongside the agricultural sector, with paper, furniture, knitted goods and other items such as bowling pins all produced in Lewis County. While manufacturing has declined significantly in recent decades, as of 2008 19% of non-farm employment in the county was still in manufacturing, with paper, boxes and packaging, cream cheese, bowling pins, flooring materials, gun-cleaning products, and snowplows all being produced in Lewis County. In the far north of the county there is also a significant talc mining operation, and in the same area a large amount of land has been given over to military use as part of the US Armyôs Fort Drum training area.

At the beginning of the 21st century the growth industry in Lewis County is tourism; the countyôs lakes, forests and public lands attract vacationers and other visitors for camping, hiking, fishing, hunting, skiing, snowmobiling, and other activities made possible by the countyôs natural resources.

Existing Development and Land Use

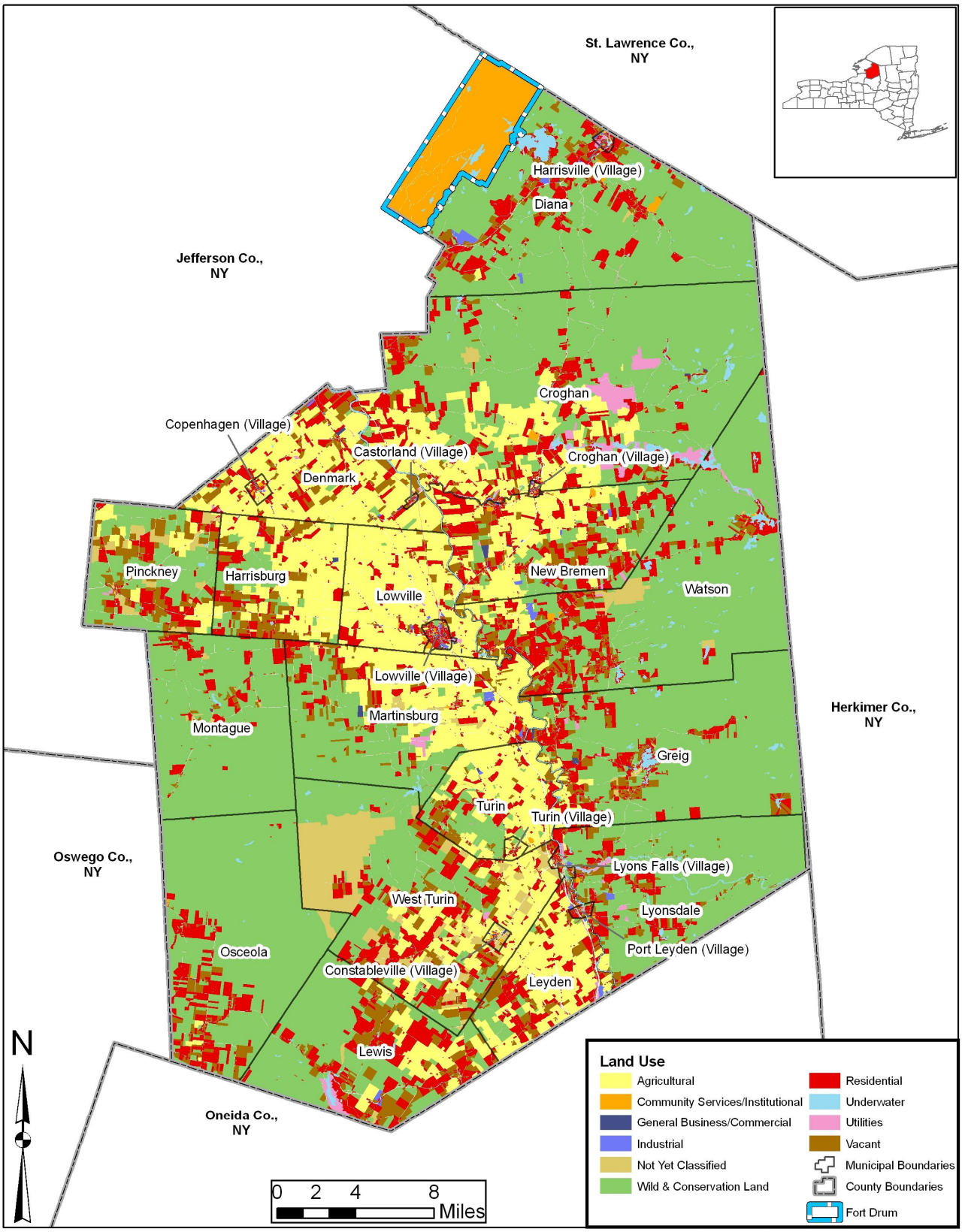
Lewis County is one of the northernmost counties in New York State. Lewis County is located on the western side of northern New York State, southeast of the area where the Saint Lawrence River exits Lake Ontario. The county seat of Lowville lies approximately 60 miles northeast of Syracuse, and 120 miles northwest of Albany. According to the US Census Bureau, the County is 1,275 square miles in area (not including open water). Lewis County is bounded to the northeast by St. Lawrence County, to the east by Herkimer County, to the south by Oneida County, and to the west by Oswego and Jefferson Counties.

There are 26 municipal jurisdictions in addition to the County, with the Village of Lowville designated as the County Seat. The countywide population as determined by the 2000 Census was 26,944, and the U.S Census Bureau estimated the 2008 population to be 26,176. The New York Statistical Information System Program on Applied Demographics at Cornell University projects the Countyôs population to decline steadily thereafter, down to around 21,600 by 2035. The Census 2000 gives the County a population density of 21.1 people per square mile (using the land area only), while the population density for New York State overall is significantly higher at around 400 people per square mile.

Figure 3d.1 presents a graphical depiction of land use in Lewis County compiled using GIS, and the component data used to compile this figure is presented in Tables 3d.1 and 3d.2, which present total acreages of land currently under various land use categories and their relative percentages within each municipality and in the County overall.

Together, Tables 3d.1 and 3d.2 and Figure 3d.1 indicate that 19 percent of the county is currently used for agriculture, 13 percent is residential, and 7 percent of the land is classified as vacant. Additionally, three percent is community services/institutional and 54 percent of the land is classified as wild and conservation lands including parks and other recreation areas). The remaining four percent is comprised of offices/general business/commercial, industrial, utilities, land that has not yet been classified, or open water.

Figure 3d.1: Lewis County Land Use



SOURCES: ESRI, U.S. Counties, 2005; Lewis County Department of Economic Development & Planning, Town and Village Boundaries, Parcel Data; U.S. Census Bureau, Lewis County, NY, Area Hydrography, 2008

Table 3d.1
Lewis County Land Use (Acres) by Municipality

Municipality	Residential	Community Services/Institutional	Offices/ General Business/Commercial	Industrial	Utilities	Agriculture	Wildland / Conservation Land	Vacant	Under Water	Not Yet Classified	Total (Acres)
Castorland, Village of	53	13	3	8	17	39	1	39	0	0	173
Constableville, Village of	115	44	30	1	3	197	0	19	0	275	683
Copenhagen, Village of	*221*	*68*	*4*	*11*	*18*	*363*	*2*	*27*	*6*	*0*	*721*
Croghan, Town of	14,182	189	53	33	4,525	20,612	71,375	3,240	0	433	114,642
Croghan, Village of	94	7	10	20	7	86	8	17	0	0	250
Denmark, Town of	4,806	20	89	58	204	21,361	609	3,865	0	22	31,032
Diana, Town of	8,338	19,666[1]	49	633	191	113	54,582	4,126	0	88	87,786
Greig, Town of	6,478	17	119	0	99	1,471	46,514	3,845	133	264	58,939
Harrisburg, Town of	3,421	6	47	9	0	13,532	3,894	4,109	0	14	25,032
Harrisville, Village of	*198*	*40*	*10*	*30*	*76*	*0*	*15*	*82*	*1*	*0*	*452*
Lewis, Town of	8,736	28	10	110	731	4,600	20,957	5,748	0	212	41,132
Leyden, Town of	4,323	10	15	136	173	11,830	1,604	2,382	0	15	20,487
Lowville, Town of	2,018	74	47	70	128	19,249	112	759	0	22	22,481
Lowville, Village of	531	102	73	63	105	90	45	85	0	4	1,099
Lyons Falls, Village of	184	10	24	4	12	29	55	119	12	105	553
Lyonsdale, Town of	4,196	93		153	532	328	35,335	2,793	0	30	43,461
Martinsburg, Town of	4,728	102	127	196	339	18,510	19,110	3,563	0	972	47,647
Montague, Town of	2,500	2	13	0	0	0	37,175	845	0	187	40,722
New Bremen, Town of	*9,037*	*163*	*155*	*147*	*176*	*12,473*	*8,610*	*4,201*	*3*	*6*	*34,971*
Osceola, Town of	6,263	59	6	0	9	244	47,259	2,179	0	430	56,448
Pinckney, Town of	3,853	5	7	0	56	2,836	11,905	4,893	0	2,316	25,871
Port Leyden, Village of	230	18	4	6	34	0	37	74	0	3	405
Turin, Town of	*2,579*	*54*	*62*	*18*	*13*	*10,932*	*3,840*	*1,382*	*0*	*0*	*18,881*
Turin, Village of	*99*	*9*	*4*	*1*	*0*	*443*	*53*	*31*	*0*	*0*	*640*
Watson, Town of	*10,497*	*136*	*13*	*173*	*570*	*2,097*	*54,807*	*3,935*	*139*	*1,800*	*74,166*
West Turin, Town of	10,151	27	5	0	69	11,915	20,913	6,020	0	14,632	63,732
Lewis County Totals:	**107,831**	**20,963**	**978**	**1,879**	**8,087**	**153,349**	**438,817**	**58,379**	**294**	**21,828**	**812,405**

1. Includes a substantial portion of Fort Drum Army Base

Table 3d.2
Lewis County Land Use (Percentage) by Municipality

Municipality	Residential	Community Services/Institutional	Offices/ General Business/Commercial	Industrial	Utilities	Agriculture	Wildland / Conservation Land	Vacant	Under Water	Not Yet Classified	Total (Acres)
Castorland, Village of	31%	8%	2%	5%	10%	22%	0%	23%	0%	0%	100%
Constableville, Village of	17%	6%	4%	0%	0%	29%	0%	3%	0%	40%	100%
Copenhagen, Village of	*31%*	*9%*	*1%*	*1%*	*3%*	*50%*	*0%*	*4%*	*1%*	*0%*	*100%*
Croghan, Town of	12%	0%	0%	0%	4%	18%	62%	3%	0%	0%	100%
Croghan, Village of	38%	3%	4%	8%	3%	34%	3%	7%	0%	0%	100%
Denmark, Town of	15%	0%	0%	0%	1%	69%	2%	12%	0%	0%	100%
Diana, Town of	9%	22%[1]	0%	1%	0%	0%	62%	5%	0%	0%	100%
Greig, Town of	11%	0%	0%	0%	0%	2%	79%	7%	0%	0%	100%
Harrisburg, Town of	14%	0%	0%	0%	0%	54%	16%	16%	0%	0%	100%
Harrisville, Village of	*44%*	*9%*	*2%*	*7%*	*17%*	*0%*	*3%*	*18%*	*0%*	*0%*	*100%*
Lewis, Town of	21%	0%	0%	0%	2%	11%	51%	14%	0%	1%	100%
Leyden, Town of	21%	0%	0%	1%	1%	58%	8%	12%	0%	0%	100%
Lowville, Town of	9%	0%	0%	0%	1%	86%	1%	3%	0%	0%	100%
Lowville, Village of	48%	9%	7%	6%	10%	8%	4%	8%	0%	0%	100%
Lyons Falls, Village of	33%	2%	4%	1%	2%	5%	10%	22%	2%	19%	100%
Lyonsdale, Town of	10%	0%	0%	0%	1%	1%	81%	6%	0%	0%	100%
Martinsburg, Town of	10%	0%	0%	0%	1%	39%	40%	7%	0%	2%	100%
Montague, Town of	6%	0%	0%	0%	0%	0%	91%	2%	0%	0%	100%
New Bremen, Town of	26%	0%	0%	0%	1%	36%	25%	12%	0%	0%	100%
Osceola, Town of	11%	0%	0%	0%	0%	0%	84%	4%	0%	1%	100%
Pinckney, Town of	15%	0%	0%	0%	0%	11%	46%	19%	0%	9%	100%
Port Leyden, Village of	57%	4%	1%	1%	8%	0%	9%	18%	0%	1%	100%
Turin, Town of	*14%*	*0%*	*0%*	*0%*	*0%*	*58%*	*20%*	*7%*	*0%*	*0%*	*100%*
Turin, Village of	*15%*	*1%*	*1%*	*0%*	*0%*	*69%*	*8%*	*5%*	*0%*	*0%*	*100%*
Watson, Town of	*14%*	*0%*	*0%*	*0%*	*1%*	*3%*	*74%*	*5%*	*0%*	*2%*	*100%*
West Turin, Town of	16%	0%	0%	0%	0%	19%	33%	9%	0%	23%	100%
Lewis County Totals:	**13%**	**3%**	**0%**	**0%**	**1%**	**19%**	**54%**	**7%**	**0%**	**3%**	**100%**

1. Includes a substantial portion of Fort Drum Army Base

More than 50% of the County is comprised of wildland, forests, and conservation areas, with approximately 19% of the County area (153,000 acres) of State Land in the form of state parks, forest preserves, state forests, and wildlife management areas. Wildland and conservation areas in the County are located on either side of the Black River Valley, on the Tug Hill Plateau in the west and in the Adirondack foothills in the east, where the Adirondack Park Preserve overlaps the County. The Adirondack Park Preserve covers the eastern portions of the Towns of Diana, Croghan, Watson, Greig, and Lyonsdale. Significant named conservation or protected areas operated by NYSDEC are listed in Table 3d.3, and a summary of total conservation/protected areas by municipality is presented in Table 3d.4.

Table 3d.3
Named Preserved/Conservation Areas in Lewis County

Municipality	Conservation/Preserved Area	Size (Acres)
Towns of Greig/Lyonsdale/*Watson*	Independence River Forest Preserve	50,607
Town of Montague	Tug Hill Wildlife Management Area	5,085
Town of Greig	Ha-De-Ron-Dah Forest Preserve	4,272
Towns of Martinsburg/*Turin*/West Turin	Whetstone Gulf State Park	1,905
Towns of Croghan/*Watson*	Watsonôs East Triangle Forest Preserve	1,697
Town of *Watson*	Five Ponds Forest Preserve	512
Town of Diana	Aldrich Pond Forest Preserve	463
Town of Lyonsdale	Black River Forest Preserve	219

Table 3d.4
NYSDEC Conservation/Protected Lands in Lewis County

Municipality	Total Conservation / Preserved Area (Acres)	Total Municipal Area[1] (Acres)	Total Conservation / Preserved Area (%)
Croghan, Town of	15,010	114,642	13.1%
Denmark, Town of	1	31,032	0.0%
Diana, Town of	20,079	87,786	22.9%
Greig, Town of	29,406	58,939	49.9%
Harrisburg, Town of	2,775	25,032	11.1%
Harrisville, Village of	*1*	*452*	*0.3%*
Lewis, Town of	3,516	41,132	8.5%
Lowville, Town of	94	22,481	0.4%
Lyonsdale, Town of	4,062	43,461	9.3%
Martinsburg, Town of	5,356	47,647	11.2%
Montague, Town of	16,799	40,722	41.3%
New Bremen, Town of	*525*	*34,971*	*1.5%*
Osceola, Town of	4,748	56,448	8.4%
Pinckney, Town of	10,300	25,871	39.8%
Port Leyden, Village of	4	405	1.1%
Turin, Town of	*1,105*	*18,881*	*5.9%*
Watson, Town of	*27,828*	*74,166*	*37.5%*
West Turin, Town of	11,310	63,732	17.7%
Lewis CountyTota1[2]	**152,919**	**812,405**	**18.8%**

1. Based on GIS parcel data
2. Including Municipalities with no NYSDEC land

Land Use Planning

Land use planning in the State of New York is primarily a function of local municipalities, with Lewis County serving a coordination function for those elements that are best served on a regional level. The Lewis County Department of Economic Development and Planning is able to assist with all planning and economic development in the county, serving as staff to the County Planning Board and providing training to all planning board and community zoning board of appeals members. The department also administers the County Agricultural District and Federal Housing Assistance programs, and provides staffing to the Lewis County Development Corporation and the Community Economic Development Strategy Committee. Department staff also serve as board members for the Home Consortium and the Workplace Investment Board.

Also, the department provides site selection services for new and expanding business in the county, coordination with the Lewis County Industrial Development Agency, and additional business development resources including information about and administration of the Empire Zone program. The department also provides general technical assistance on planning and zoning issues to local municipalities and the public, general information and services related to grant writing, census and demographic data, agriculture, environmental impact assessment, housing, transportation, and recreation, plus floodplain data and disaster recovery guidance.

Available data as of September 2009 indicates that 35 percent of municipalities in the county have either a land use or rural development plan, 62 percent have zoning or land use laws, 58 percent have subdivision regulations, 38 percent have site plan review, and 27 percent have comprehensive or master plans either in place or under development. A summary of these land use regulation tools by municipality is presented in Table 3d.5.

Table 3d.5
Lewis County Municipalities Land Use Regulations
(Source: Lewis County Department of Economic Development and Planning website, Lewis County Comprehensive Plan)

Municipality	Land Use Plan	Rural Development Plan	Zoning / Land Use Law	Subdivision Regulations	Site Plan Review	Comprehensive / Master Plan
Castorland, Village of				ŏ	ŏ	
Constableville, Village of						
Copenhagen, Village of				●	●	
Croghan, Town of	ŏ		ŏ		ŏ	
Croghan, Village of						
Denmark, Town of			ŏ	ŏ		
Diana, Town of			ŏ			
Greig, Town of	ŏ		ŏ	ŏ		
Harrisburg, Town of			ŏ	ŏ		ŏ [2]
Harrisville, Village of			●		● [1]	●
Lewis, Town of	ŏ		ŏ	ŏ		
Leyden, Town of			ŏ		ŏ [1]	
Lowville, Town of			ŏ	ŏ		ŏ [3]
Lowville, Village of			ŏ	ŏ		ŏ [3]
Lyons Falls, Village of						
Lyonsdale, Town of				ŏ	ŏ	

Table 3d.5
Lewis County Municipalities Land Use Regulations
(Source: Lewis County Department of Economic Development and Planning website, Lewis County Comprehensive Plan)

Municipality	Land Use Plan	Rural Development Plan	Zoning / Land Use Law	Subdivision Regulations	Site Plan Review	Comprehensive / Master Plan
Martinsburg, Town of	ŏ	ŏ		ŏ	ŏ	ŏ[2]
Montague, Town of	ŏ	ŏ	ŏ	ŏ		ŏ[2]
New Bremen, Town of			●		●	
Osceola, Town of	ŏ	ŏ	ŏ	ŏ	ŏ	
Pinckney, Town of			ŏ	ŏ		ŏ[2]
Port Leyden, Village of						
Turin, Town of	●[4]	●		●		
Turin, Village of	●[4]	●			●	
Watson, Town of			●			
West Turin, Town of	ŏ	ŏ	ŏ	ŏ		

1. Incorporated into zoning law rather than as a stand alone document
2. 4-Town comprehensive plan, currently under development
3. Joint Town/Village comprehensive plan
4. Joint Town/Village land use plan

In addition to the Lewis County Economic Development and Planning Department, there are a number of additional regional and local agencies which have some role or influence in planning issues in Lewis County:

Black River / St. Lawrence River Resource Conservation and Development Area Council

The Black River- St. Lawrence RC&D area is located in Northern New York State and includes Franklin, St. Lawrence, Jefferson, Oswego, Lewis, Oneida and Herkimer Counties. It is bordered by the St. Lawrence River and Canada to the North, Lake Ontario and Canada to the West, Central New York RC&D to the South, and Hudson Mohawk RC&D and Greater Adirondack RC&D to the East. The mission of the Black River - St. Lawrence RC&D Council is to work with partners to provide local leadership and coordination for projects devoted to environmental conservation, community improvement, economic development, and the wise use of natural resources. The Councilôs vision is to be recognized as an integral local leader in the wise utilization of natural and human resources to improve the local economy and enhance the quality of life throughout the seven county RC&D area.

New York State Tug Hill Commission

The Tug Hill region is a 2,100 square mile, 1 million acre, 62 municipality region lying between Lake Ontario, the Black River and Oneida Lake, encompassing forest, farmland, and waters important to the State, and deemed by New York State to be deserving of technical assistance due to its small population and relative poverty. The rural Tug Hill region lies within portions of Jefferson, Lewis, Oneida and Oswego Counties. While much of the area is controlled by New York State, small privately-owned parcels do exist. The region is renowned for its excessive snowfall ï the heaviest east of the Rockies.

Every Lewis County municipality west of the Black River lies within the Tug Hill Commissionôs jurisdiction (although participation is voluntary): the Towns of Denmark, Harrisburg, Lewis, Leyden, Lowville, Martinsburg, Montague, Osceola, Pinckney, Turin, and West Turin; and the Villages of Castorland, Constableville, Copenhagen, Lowville, Lyons Falls, Port Leyden, and Turin.

The New York State Tug Hill Commission was established as a non-regulatory state agency that provides technical assistance to the member towns and villages and to community organizations of the Tug Hill region with the mission of ñmunicipal assistance, conservation, preservation and development in the region.ò The commission's approach is viewed by many as a model for fostering environmental protection and appropriate rural economic development in a way that retains "home rule." The Commission provides technical assistance to local governments, economic development organizations, and other local groups in the areas of land use planning, community economic development, and natural resource management. They also provide skill development and information for local officials through workshops and issues papers on a variety of topics. The Commission utilizes a model "circuit rider" program and helps local governments cut costs and save public funds through use of its computerized (GIS) mapping system and by fostering inter-municipal cooperation. The Tug Hill Commission has a long-standing tradition of partnering with public agencies and the private sector to leverage resources (both human and financial), expertise and skills to help meet the needs of the regionôs communities.

The Tug Hill Commissionôs annual budget is about $1.3 million, most of it state appropriations. In any given year the Commission helps local communities and organizations find an average of $5 million to $10 million annually in grants and loans to help with advancing their projects. Projects include:

- Land use planning and zoning;
- Infrastructure financing and development :sewer and water systems, municipal facilities, telecommunications and technology development; siting and review of energy facilities; parks and historic preservation; watershed management; rural economic development (especially in the areas of forestry, farming, recreation and ñMain Streetò revitalization)
- Leadership and capacity development through workshops
- The Commissionôs annual Local Government Conference
- A series of technical issue papers.

Most Tug Hill towns and villages belong to one of five councils of governments. Each is served by one or more "circuit riders" who, working out of their home offices, help in sharing good ideas between communities and help individual towns and villages take advantage of a more regional perspective in trying to enhance their communities. Circuit riders also help communities in identifying and solving problems, and when more specialized assistance is needed, call upon commission staff for help in land use planning, finding grants and loans for community improvement, and providing technical assistance and training opportunities for local officials. The five councils of government (COGs) in the Tug Hill region are: Cooperative Tug Hill Council (CTHC), North Shore Council of Governments (NorCOG), Northern Oneida County Council of Governments (NOCCOG), River Area Council of Governments (RACOG) and Salmon River Council of Governments (SRCG).

Of the 18 Lewis County municipalities in the Tug Hill Region, 13 are affiliated with the Cooperative Tug Hill Council, which also includes three municipalities in Jefferson County, two in Oswego County, and one in Oneida County. The CTHC-affiliated municipalities in Lewis County are the Towns of Harrisburg, Lewis, Leyden, Martinsburg, Montague, Osceola, Pinckney, Turin, and West Turin; and the Villages of Constableville, Lyons Falls, Port Leyden, and Turin. The remaining Lewis County municipalities in the Tug Hill Region are not affiliated with any of the COGs.

Adirondack Park Agency

The Adirondack Park Agency (APA) was created in 1971 by the State Legislature to develop long-term land use plans for both public and private lands within the Adirondack Park. The primary purpose of the APA is to ensure conservation, protection, preservation, development and use of the unique scenic, wildlife, recreational, historic, and ecological resources of the park. The APA also aims to focus the

responsibility for developing long-range park policy that takes into consideration the needs of the entire state. The APA is a regulatory body that strives to ensure that current and future pressures on the parkôs resources are provided for within a land use plan that recognizes matters of local concern along with those of the region and New York State. In an effort to combat unregulated development on private land, the APA created a framework to assist local governments within the park, including those in Lewis County, against the pressures of development and to help these municipalities exercise their discretionary powers to guide growth. The Towns of Diana, Croghan, Watson, Grieg, and Lyonsdale all lie partially within the Adirondack Park.

Fort Drum Regional Liaison Organization (FDRLO)

There has been a long-standing, mutually supportive relationship between Fort Drum and the North Country, in part due to the regionôs partnership approach to solving problems and leveraging opportunities. The Fort Drum Regional Liaison Organization is a regional entity that has played a significant role in facilitating and strengthening a partnership between stakeholders in the Fort Drum region ï not only with neighboring communities but also with other regional planning agencies such as the Development Authority of the North Country and the New York State Tug Hill Commission. It originated in 1990 as a community-based membership organization with the mission of fostering effective communication, understanding and mutual support by serving as the primary point of coordination for resolution of those issues which transcend the specific interests of the military and civilian communities of the Fort Drum region. The FDRLO is active in the region, and has a history of conducting various plans, studies and reports in areas such as housing, economic development, and growth management.

Development Authority of the North Country

The Development Authority of the North Country was created to institute a comprehensive, coordinated program of economic development activities in Jefferson, Lewis, and St. Lawrence Counties, which surround the United States Army base at Fort Drum, in order to provide the region with the capability to effectively plan and develop the infrastructure needs of the region required by the population increase due to the expansion at Fort Drum. The Development Authority is notable among public authorities in New York State because it serves multiple purposes - to address the infrastructure needs and promote economic development in the North Country.

Future Development Trends – County Overview

Lewis County is currently faced with a number of issues that will impact development in the near future. The county currently exhibits a declining population, a mostly static economy, and the loss of forest and farmland, while tourism is increasing and the market for seasonal residences is expanding.

While the number of housing units in the county increased by approximately 17 percent from 1990 to 2000, the majority of this increase can be attributed to the expansion of Fort Drum and the increase in seasonal homes. Towns such as Denmark and Diana in the immediate vicinity of Fort Drum are seen locally as most likely to experience significant housing growth in the county, while issues related to affordable housing for low- and middle-income families and the cost of rehabilitation and maintenance of older existing housing are seen as potential impediments to overall growth in the county.

Agriculture has long been considered the most significant industry in the county, but while the total market production value from Lewis County farms has steadily increased over the last several decades, the overall trend in both the number farms and the total land in farms has been downwards since 1982. Market value increases are seen as a sign of increasing productivity and efficiency of larger farms, while small family farms decline. Current agricultural trends in Lewis County are expected to continue, and

while the increasing loss of farm acreage could impact the local economy (particularly where dairy farm land is lost), it will also create opportunities for alternative land use and development.

Large-scale industrial development is not considered likely in Lewis County in the foreseeable future. While manufacturing remains an important sector of the county economy, the overall trend has been one of decline in the last two decades. Most significant industrial employers in the county are subdivisions of large national or international firms, which leaves this sector of the county economy vulnerable to contraction as regional manufacturing costs continue to rise and companies relocate or consolidate in low-cost areas. However, there are indications that stability may have been reached in this sector: While several significant manufacturing facilities (notably paper and other timber products) have closed in the last 15 years, a handful of new manufacturing firms have located in Lewis County, and several others have expanded or announced plans to expand, in some cases making use of existing industrial land.

In recent years Lewis County has become the location of several significant alternative energy-generating facilities, with more planned for the future. The most prominent is wind energy, which in addition to contributing to energy production, has also become something of a tourist attraction: The Maple Ridge Wind Power Project, located in the Towns of Harrisburg, Lowville and Martinsburg on the northeastern side of the Tug Hill Plateau is the largest wind farm in the eastern United States, with 195 turbines in an area of approximately 40 square miles. This wind farm became operational in 2006 and is capable of producing a maximum of 322 MW, or approximately 2% of the residential power needs in New York State. An additional 40-turbine wind farm in the Town of Martinsburg, the Roaring Brook Wind Power Project, is planned for an area further to the west on the Tug Hill Plateau. In addition to wind power, there are two wood-energy plants in Lewis County, including the Lyonsdale Biomass facility, which generates around 19 MW by burning wood chips, sawmill residues and other wood wastes, with the resulting ash distributed to farmers as a soil amendment and liming substitute. There are plans to build a commercial demonstration bio-refinery adjacent to this facility, and the county, the Village of Lowville, and the Cornell Cooperative Extension are exploring a community digester concept whereby animal waste from local farms and local food waste could be converted into energy at a centralized facility.

Recent trends in retail development have shown a shift back to commercial sector growth and stability in Lewis County, following a period during which major commercial developments in neighboring areas (particularly at Watertown, in Jefferson County) exerted a negative effect on Lewis County businesses. Commercial interest in activity in and around Lowville has increased in recent years, for example with the opening of a Wal-Mart supercenter in the town. Commercial sector growth in the near future is expected to be influenced by the reestablishment of Lowville as a major regional retail and commercial center, the expansion of Fort Drum, and the increasing popularity of Lewis County as a recreation destination in both winter and summer.

While there is a great variety of recreational opportunities in Lewis County, as outlined above, the activity showing the most growth and which is likely to influence recreational development in the county perhaps more than any other is snowmobiling: The 500 or so miles of maintained snowmobile trails in Lewis County represent almost 15% of the total for New York State. The growth of snowmobiling as a leisure activity in the County has been accompanied by a proliferation of seasonal camps and residences for this and other recreational activities, which is likely to continue in the foreseeable future.

Future growth and development in Lewis County is expected to be guided by and adhere to the seven policy statements outlined in the County Comprehensive Plan.

Tourism and Recreation

Lewis County has a unique and attractive rural character, which makes it a wonderful place to visit and explore. The region abounds with recreation opportunities that attract visitors from great distances. We

will build upon these existing attractions with a strategic approach to branding and marketing. We will seek to balance economic success with impacts on the environment and the peaceful nature of our communities. Coordinated efforts between government agencies, not-for-profits, and local businesses will make Lewis County a renowned tourist destination for generations.

Economic Development

It is the policy of Lewis County to support existing businesses and encourage the attraction of new businesses that meet the needs of residents and visitors. The economic vitality of the community depends on having locally supported businesses and sustainable employment opportunities. The county will build upon existing assets and growing economic sectors such as recreation, healthcare, and value-added agricultural and forestry products. Additionally, we will place a particular emphasis on growing the renewable and sustainable energy sector, which will have positive impacts both locally and regionally. As these sectors expand, we will strengthen our ability to retain and attract young people to live, work, and raise families in Lewis County.

Infrastructure and Transportation

Lewis County must promote a purpose-driven regional approach to enhancing its infrastructure systems. Assets such as road and rail networks, sewer and water systems, and energy systems are critical components to the health of our people and our economy. The county will provide guidance to towns and villages related to growth patterns, infrastructure investment, and other vital systems. This guidance will engage localities in a county-wide strategic perspective, ensuring that existing assets are maintained and additional investments are sound.

Community Resources and Housing

It is the policy of Lewis County to have community resources that enhance our quality of life and improve our economic standing. These resources include affordable and quality housing, community centers, parks, education, and public safety systems. We recognize that these components are intertwined and therefore must be approached holistically. The county will actively support agencies, municipalities, and individuals as they seek to enhance these resources. Such partnerships will ensure that future generations will continue our heritage of pride and investment in our communities.

Agriculture and Forestry

It is our policy to actively support the county's vast agricultural and forestry resources. From the Tug Hill Plateau to the Black River Valley to the Adirondack Foothills, these assets represent our heritage and our future. Policies and actions at the county level will be designed to preserve and enhance these industries, including emerging sustainability-based practices. The county will support economic development initiatives, land use policies, and strategic alliances that will bolster the farming and forestry industries as they face a myriad of challenges in the 21st century.

Natural Resources and the Environment

Lewis County has an abundance of natural resources, including water, wind, soils, and wildlife. Together with our citizens, they form a unique ecosystem that must be preserved and sustained for future generations. These assets are the foundation for the quality of life we enjoy and play a major role in people's decisions to live in or visit Lewis County. The county will provide leadership by promoting sound development practices, supporting strategic land use planning, and encouraging community stewardship initiatives to reduce or eliminate the degradation of these resources.

Regional Coordination

Lewis County will be a leader in Upstate New York for inter-governmental cooperation and strategic partnerships. The county has a large geographic area with low population densities and some communities lack the critical mass to support all the desired services of its residents. Therefore, we must

leverage our collective assets rather than compete or exist independent of one another. We recognize that constrained budgets at every level of government require us to make difficult choices. As such, we will engage in meaningful dialogue across municipal boundaries, and continue to engage entities with regional significance, such as the Tug Hill Commission, Adirondack Park Agency, and Fort Drum. These efforts, both formal and informal, will result in increased efficiencies, improved health and well-being, and benefits irrespective of physical boundaries.

In the shorter term, a number of work elements were identified in the countyôs Comprehensive Economic Development Strategy Plan of 2006 that will directly impact the development patterns of the county in the near future:

Industrial

- Pursue reutilization of vacant industrial buildings including structures in Castorland, Beaver Falls, and Glenfield
- Develop ñready to goò industrial sites that have water, sewer, zoning approval, low-cost phase 3 power or other energy source, and possibly rail.
- Pursue expansion of Commerce Park at Ross Road/Number Four intersection, including design and installation of water, sewer, electric, gas, and zoning approvals.

Forest Products

- Pursue manufacturing operations that produce finished products. Pursue low-grade markets such as pressboard, niche markets such as toys, wine racks, Adirondack furniture, cabinets, etc
- Design and produce forest products industry and resources directory, to provide detailed information on forest products, goods, and services in Lewis County, to be used for marketing existing industry and opportunities as well as creating networks between existing primary and secondary producers.

Agriculture

- Continuous implementation of plan promoting and advertising the agricultural resources of the county to attract producers, agricultural input suppliers, manufacturers, and food processors.
- Pursue the development of the Lewis County Agricultural Enhancement Plan aspects that would enhance agriculture and apply for grant funds to implement these initiatives.
- Develop and market specialty products. There are opportunities for the development of non-dairy agricultural enterprises such as ethnic foods, organics and other niche markets. The single largest limitation of any of these enterprises is effective, organized marketing. Efforts to encourage a more efficient marketing system for agricultural products should be pursued.

Commercial and Tourism

- Pursue development of a managed snowmobile trail system including secured trails, fully funded operation and maintenance costs, comprehensive law enforcement, revisions to the General Obligations Law, and national promotion of the industry.

Community Services

- Pursue development of low-cost energy to assist in retention, expansion, and development of business and improvement of the overall economy. Pursue solutions such as aggregation and a countywide municipal electric system.
- Develop advanced telecommunications infrastructure for industry, commercial businesses, health care, and education.
- Pursue water and wastewater infrastructure capacity to support community growth.

Local Government

- Pursue inter-municipal cooperation to decrease costs at all levels.

Future Development Trends in Each Municipality

A ñLand Uses and Development Trends Questionnaireò was distributed to all jurisdictions in the County and asked jurisdictions to:

(1) describe development trends occurring within their jurisdiction, such as the predominant types of development occurring, location, expected intensity, and pace by land use; and
(2) describe any regulations/ordinances/codes their jurisdiction enforces to protect new development from the effects of natural hazards.

A summary of all relevant or applicable information contained within all the completed Land Use and Development Questionnaires returned by 24 of the 27 individual jurisdictions is presented in Table 3d.6

Summary of Responses – Land Use and Development Trends Questionnaire

Table 3d.6
Summary of Responses
Land Uses and Development Trends Questionnaire

Community	Land Uses and Development Trends in Hazard Areas	Regulations/Codes/Ordinances To Protect New Development From Natural Hazards
Lewis, County of	Within Lewis County in general development is slow and not pressing. The type of development that is occurring is mainly one-family residential homes. Additionally, there is a small trend toward vacation/seasonal homes. Both of these types of development are occurring within currently agricultural or forested areas. The attraction for growth to occur here is the wealth of natural resources and the rural country setting. There is little or no growth within villages where mainly infill development occurs. Throughout the county there is little commercial growth. When commercial growth does occur it is mainly along transportation corridors near municipal water and sewage.	The County does not enforce regulations/ordinances/codes to protect new development ï the enforcement lies at the individual jurisdictionôs level.
Castorland, Village of	No new development has occurred in the last three years, but the village is working on upgrading the sewage treatment plant.	This is done through the Lewis County Building and Fire Codes Office.
Constableville, Village of	The village has seen real estate being bought by people from out of the area for seasonal recreational use.	Codes and ordinances are regulated at the County level.
Copenhagen, Village of	*No significant development at this time.*	*No zoning in the Village, Local Law #1-1975 established conditions for building in hazard (flood) areas.*
Croghan, Town of	There are some single-family homes being built in undeveloped woodland areas, but there is not a lot of development occurring in the town.	A floodplain management is in effect but the maps are not current and need updating. The town does not have planning or zoning commissioners or boards. Business development is subject to a site plan review application.
Croghan, Village of	Within the Village there is an ongoing revitalization effort downtown through the Small Cities and Main Street program. This has been very successful and had done much to improve the appearance of the downtown and the living conditions of its residents. Many store fronts and apartments	This is done through the Lewis County Building Codes office.

Table 3d.6
Summary of Responses
Land Uses and Development Trends Questionnaire

Community	Land Uses and Development Trends in Hazard Areas	Regulations/Codes/Ordinances To Protect New Development From Natural Hazards
	have been improved and the occupancy of both is near 100%. Businesses are hurting in this time of financial crisis, but they are surviving and new ones are opening up yearly. The community supports its local businesses and the one-family homes that come up for sale generally sell quickly. Additionally, the Village Board belongs to the HOME Consortium and Snowbelt Housing. These organizations work to improve the living conditions of qualifying homeowners and renters. This improves the housing stock and makes the village a more desirable place to live. There is a movement to develop a snowmobile trail through the village. This should stimulate more business development and residential interest.	
Denmark, Town of	Current proposed developments: - A truck repair shop on Route 26 at Deer River - 13 woodland parcels for sale to developers on County Route 13 - Planned senior citizen development on County Route 194 - A developer is inquiring about an RV park	Floodplain management
Diana, Town of	*No response was received from this municipality.*	*No response was received from this municipality.*
Greig, Town of	A lot of new homes (retirement people) A lot of cabins for snowmobilers (people from NYC, NJ, and PA)	Yes
Harrisburg, Town of	Some (less than 20) new single-family residential development over the last five years, not concentrated in any particular area. All low-density and mostly on marginal farmland or woodland. Minimum lot size of 1.5 acres. About 5-10 new seasonal camps in the last five years. The only new business development is the Maple Ridge Wind Farm (80 towers and small storage buildings)	Town zoning law restricts development in certain areas and also addresses the type of development and minimum lot size.
Harrisville, Village of	No development trends.	Resolution to Enact Floodplain Management Flood Damage Prevention Ordinance

Table 3d.6
Summary of Responses
Land Uses and Development Trends Questionnaire

Community	Land Uses and Development Trends in Hazard Areas	Regulations/Codes/Ordinances To Protect New Development From Natural Hazards
		Local Law #2 1993 ï Flood Damage Prevention Zoning Enforcement Officer
Lewis, Town of	Old farms and woodland are being broken down into smaller lot sizes. Most new construction is for recreational second home owners.	Such regulations are enforced but there have not been any issues in the past.
Leyden, Town of	No significant development at this time.	*No applicable response was received from this municipality.*
Lowville, Town of	Some new housing in rural areas, very occasional new commercial structures (tractor supply store, bowling alley, expansion to motel). There is a proposal for a new town water line from Seeber Farm to DEC, along Ridge Road, and along Waters Road in Dadville.	Floodplain management with local laws, building codes Steep Slope building codes High wind design building codes Stormwater management ï zoning and subdivision laws
Lowville, Village of	Rehabilitation of multi-unit apartment buildings on Water Street, Lowville School Construction and relocation of athletic fields. Reconstruction of State Routes 12 and 26.	Building codes for floodplains Local law for compliance with FEMA flood regulations High wind clips on rafters of new construction Enforce NYS fire prevention and control regulations Zoning for stormwater control
Lyons Falls, Village of	Otis Technology is constructing a computerized warehouse in the village, and the same company has purchased additional land across the street from their facility. The Edge Hotel is constructing a new bar and restaurant and there are plans for an adjacent convention center. The Lewis County Department of Economic Development is working with the village to assess possible contamination issues for potential redevelopment of village sites such as the abandoned paper mill, two former gas stations, and the old school. The village has also received a grant from the New York Main Street Program for renovations to commercial and residential buildings. Part of the Black River Canal in the village has recently been converted into a park.	*No applicable response was received from this municipality.*
Lyonsdale, Town of	A local contractor has proposed building a senior assisted living center in the town.	The Town currently has a site plan review law enacted in October 1999. The intent of this law is to promote health, safety, and general welfare of the town, also to ensure the optimum overall conservation, protection, preservation and

Table 3d.6
Summary of Responses
Land Uses and Development Trends Questionnaire

Community	Land Uses and Development Trends in Hazard Areas	Regulations/Codes/Ordinances To Protect New Development From Natural Hazards
		development of natural and man-made resources in the town. The regulations establish standards for preserving water quality, controlling traffic congestion, ensuring access for emergency vehicles, providing adequate water supply, safe and proper means for sewage and solid waste disposal, and guarding neighboring properties against intrusive development impacts. The town is also in the process of developing a zoning law.
Martinsburg, Town of	Development in the Town is occurring in two areas. One area is the Tug Hill region of the Town, where redevelopment consists of land purchases and seasonal home development. NY State Route 12 south of Lowville is the other area, which shows signs of commercial redevelopment.	*No response was received from this municipality.*
Montague, Town of	Over the past few years the Town of Montague has seen an increase in the amount of subdivisions. Transitional farmland is being subdivided into 2-10 acre road frontage lots. These lots are being sold to individuals from downstate, PA, and NJ, mostly to use the area for motorized recreational use. Seasonal camps are being built in these areas and the town is seeing some degree of cluster development. This development has benefited the town from a taxing jurisdiction but it has put pressure on the town for a need for more services such as improved roads, plowing, and garbage collection. There is pressure on the town to maintain and plow roads that are minimum maintenance. The town is actively drafting and emending legislation to deal with these issues, such as: Montague Comprehensive Plan (new), and Land Use/Subdivision Control Law (amend).	The Town of Montague Land Use Law and Subdivision Control Law try to mitigate the development on land use specific to building construction in areas such as floodplains, and steep slopes. The town has a vast resource of water, with the use of State wetland maps as well as federal wetland maps We try to discourage development in these areas. Our Subdivision Control Law addresses steep slopes, but these areas have not been a major concern.
New Bremen, Town of	*No response was received from this municipality.*	*No response was received from this municipality.*
Osceola, Town of	Local developers are creating subdivisions throughout the general area. They buy undeveloped woodland at normal price and then sell 5+ acre plots for around $4,000 to $5,000 per acre. This is causing assessments to increase and causing	The town has a land use ordinance. This only regulates the minimum lot size and setbacks for buildings from lot lines. Also there are 50 foot setbacks from lot lines for wells and septic. The planning board checks DEC wetlands for all

Table 3d.6
Summary of Responses
Land Uses and Development Trends Questionnaire

Community	Land Uses and Development Trends in Hazard Areas	Regulations/Codes/Ordinances To Protect New Development From Natural Hazards
	hardship for lifelong residents because of the increased tax load. In the future there will be more demands on town services, so more taxes. An increasing amount of land is being sold to developers and sold on in small parcels as camps. Some camps are being turned into full-time retirement homes.	subdivisions. The town has a floodplain map but it needs to be updated.
Pinckney, Town of	There is a trend for people from out of state and other parts of the state buying land and building camps for recreational use such as snowmobiling, ATVs, and hunting. People are also starting to move into these camps as permanent residences	The town has building codes that deal with wind and snow loads for roofs.
Port Leyden, Village of	Currently no new residential construction or industrial development within the village, but a new quarry is to be established north of the village limits.	All building codes are under Lewis County Codes Department.
Turin, Town of	*New developments:* *Horn Subdivision – Snow Ridge* *Mealus Subdivision – Milk House Road* *Barniak Subdivision – Tug Hill* *Smoke Water Works: proposed bottled water facility, awaiting NYSDEC approval*	*No response was received from this municipality.*
Turin, Village of	*There are no specific development trends in the village.*	*No applicable response was received from this municipality.*
Watson, Town of	*No response was received from this municipality.*	*No response was received from this municipality.*
West Turin, Town of	Recreational camps are being constructed on abandoned farmland in the town.	*No applicable response was received from this municipality.*

Potential for Future Development in Delineated Hazard Areas

While future development patterns are subject to many regulatory and market-driven factors, it is possible to make general estimates of the relative potential for future development to occur in hazard areas by analyzing vacant parcels and their relation to the various hazard areas. As discussed in detail in the Risk Assessment, the planning area is susceptible to certain hazards uniformly. However, the nature of other hazards is such that only delineable portions of the study area are at risk. Using GIS, land use mapping provided by the County was evaluated to estimate the number of vacant and potentially developable parcels in each municipality. Vacant and potentially developable parcels have been assumed to be inclusive of currently unused agricultural lands, forested lands that are not in State ownership or otherwise protected, and barren lands. It was assumed that all of these land uses would be potentially developable in the immediate future, at least to some extent. In this way the analysis is quite conservative, since it does not include currently productive agricultural land, any part of which in the County may face development pressure at some point further in the future.

Next, ñvacantò parcels were combined with geographically delineated hazard area boundaries to tally the acreage of vacant, potentially developable parcels within each municipality and further, the relative percentage of this acreage lying within each of the geographically delineated hazard areas.

According to the analysis, it is estimated that there are more than 58,000 acres of vacant, potentially developable land (by the definition above) in the Countyôs 26 jurisdictions ï about 7 percent of the Countyôs total land area. On a municipal level, this ranges from a minimum of 17 acres in the Village of Croghan to more than 6,000 acres in the Town of West Turin. While village municipalities have the smallest actual acreages of vacant/developable land, this land tends to represent a greater proportion of the total land area than it does in the towns. In Lewis County communities there are 4,692 acres of vacant land in the 100-year floodplain hazard areas (of which more than 20% is in the Town of Denmark alone); 40,212 acres of vacant land in wildfire hazard areas; 12,557 acres of vacant land in the earthquake zone 4-5; and 13,074 acres in soil types D & E. In descending order, the municipalities with the greatest acreages of vacant land in the delineable hazard areas are the Towns of Diana, New Bremen, Croghan, and Watson, with wildfire being the predominant hazard area for each. In terms of the percentage of land, the municipalities with the greatest proportions of vacant land in the delineable hazard areas are, in descending order, the Villages of Harrisville and Lyons Falls, the Town of New Bremen, and the Village of Port Leyden.

Table 3d.7 lists the estimated acreage of potentially developable vacant parcels in each municipality, and quantifies the acres of vacant land as a percentage of the total acreage of each municipality. It further indicates the percentage of each municipalityôs vacant land area that lies within geographically delineated hazard zones. Ideally, municipalities would strive to minimize future development in hazard areas, or to impose certain development restrictions which would offer some form of protection from hazard events.

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Table 3d.7
Vacant Land in Delineated Hazard Areas

Municipality	Total Vacant Land (Acres)	Vacant Land as % of Municipality's Total Acreage	Vacant Land in Flood Hazard Areas (100 & 500 year floodplains) (Acres)	% of Municipality's Vacant Land in Flood Hazard Areas (100 year floodplains)	Vacant Land in Wildfire Hazard Areas (Acres)	% of Municipality's Vacant Land in Wildfire Hazard Areas	Vacant Land in Earthquake Hazard Area Zone (4-5) (Acres)	% of Municipality's Vacant Land in Earthquake Hazard Area Zone (4-5)	Vacant Land in Earthquake Hazard Zone (Soils D&E) (Acres)	%of Municipality's Vacant Land in Earthquake Hazard Zone (Soils D&E)
Castorland, Village of	39	22.6%	2	6.4%	14	35.2%	0	0.0%	6	14.3%
Constableville, Village of	19	2.8%	0	1.3%	13	70.9%	0	0.0%	5	27.7%
Copenhagen, Village of	*27*	*3.8%*	*0*	*0.0%*	*1*	*4.2%*	*0*	*0.0%*	*0*	*0.0%*
Croghan, Town of	3,240	2.8%	289	8.9%	2,401	74.1%	3,077	95.0%	1,950	60.2%
Croghan, Village of	17	7.0%	1	6.4%	4	23.3%	17	100.0%	17	95.8%
Denmark, Town of	3,865	12.5%	1,001	25.9%	1,444	37.4%	0	0.0%	1,583	41.0%
Diana, Town of	4,126	4.7%	492	11.9%	3,195	77.4%	4,126	100.0%	1,633	39.6%
Greig, Town of	3,845	6.5%	411	10.7%	3,104	80.7%	661	17.2%	795	20.7%
Harrisburg, Town of	4,109	16.4%	0	0.0%	2,455	59.7%	0	0.0%	57	1.4%
Harrisville, Village of	*82*	*18.2%*	*28*	*33.5%*	*47*	*57.2%*	*82*	*100.0%*	*59*	*71.4%*
Lewis, Town of	5,748	14.0%	257	4.5%	4,629	80.5%	0	0.0%	616	10.7%
Leyden, Town of	2,382	11.6%	201	8.4%	1,393	58.5%	0	0.0%	317	13.3%
Lowville, Town of	759	3.4%	375	49.4%	201	26.6%	0	0.0%	401	52.8%
Lowville, Village of	85	7.7%	6	7.5%	26	30.2%	0	0.0%	0	0.0%
Lyons Falls, Village of	119	21.6%	14	11.8%	97	81.5%	0	0.0%	58	48.5%
Lyonsdale, Town of	2,793	6.4%	208	7.5%	2,407	86.2%	0	0.0%	932	33.4%
Martinsburg, Town of	3,563	7.5%	94	2.6%	2,256	63.3%	0	0.0%	169	4.7%
Montague, Town of	845	2.1%	490	58.0%	564	66.7%	0	0.0%	0	0.0%
New Bremen, Town of	*4,201*	*12.0%*	*0*	*0.0%*	*2,917*	*69.4%*	*3,052*	*72.7%*	*2,317*	*55.2%*
Osceola, Town of	2,179	3.9%	22	1.0%	1,787	82.0%	0	0.0%	110	5.1%
Pinckney, Town of	4,893	18.9%	0	0.0%	3,046	62.3%	0	0.0%	65	1.3%
Port Leyden, Village of	74	18.2%	19	25.1%	48	65.5%	0	0.0%	25	33.3%
Turin, Town of	*1,382*	*7.3%*	*78*	*5.6%*	*1,075*	*77.8%*	*0*	*0.0%*	*161*	*11.6%*
Turin, Village of	*31*	*4.9%*	*2*	*7.1%*	*11*	*34.1%*	*0*	*0.0%*	*4*	*14.1%*
Watson, Town of	*3,935*	*5.3%*	*702*	*17.8%*	*2,981*	*75.8%*	*1,541*	*39.2%*	*1,710*	*43.5%*
West Turin, Town of	6,020	9.4%	0	0.0%	4,094	68.0%	0	0.0%	84	1.4%
Lewis, County of	**58,379**	**7.2%**	**4,692**	**8.0%**	**40,212**	**68.9%**	**12,557**	**21.5%**	**13,074**	**22.4%**

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Future Development Trends in Hazard Areas – Overview

Future development trends in Lewis County in the foreseeable future are likely to revolve around the tourism, agriculture, and renewable energy industries. The County takes great pride in its small town culture, unspoiled landscapes, recreation opportunities, rich farming and forestry heritage, and overall quality of life. In short, to paraphrase the Lewis County Comprehensive Plan Vision Statement, the County intends to be the premier rural county in New York State.

Lewis County and its component municipalities are cognizant of the risks that they face due to the impacts of natural hazards. Many municipalities have programs in place today, which in some way address certain natural hazards ï whether it is a floodplain management, steep slope or general land use ordinances, zoning laws, or site plan review statutes.

In total, Lewis Countyôs 26 municipalities have 58,379 acres of vacant (potentially developable) land, as described above. This represents 7 percent of the Countyôs total area. Eleven natural hazards were identified earlier in this plan as having a significant impact on the County and have been analyzed in detail in this plan. The following paragraphs discuss the likelihood and nature of future development in areas associated with each of the identified hazards. Overall, while new development is expected to result in an increasing number of structures present in Lewis County municipalities, codes and standards in place today will require that they be designed to provide a certain degree of protection from the hazards to which the County is susceptible.

Future Development Trends – Extreme Temperatures Hazard Area

The extreme temperature hazard area covers the whole of Lewis County and is essentially uniform for all jurisdictions; therefore future development trends for the extreme temperature hazard area would be the same as those county-wide. If current demographic trends continue, the proportion of the population whose health can be particularly vulnerable to extremes in temperature is likely to increase somewhat in the foreseeable future.

Future Development Trends – Extreme Wind and Tornado Hazard Area

The extreme wind hazard area encompasses the whole of Lewis County and to all intents and purposes the risk is uniform from one jurisdiction to the next. Therefore, future development trends for the wind hazard area would be the same as those county-wide. This would include future development trends for the tornado hazard area, as a tornado is simply one example of a specific type of high wind event. Those areas of the county that do have a greater potential to experience high winds may see increased development in the form of wind farms. While an increased number of residential and commercial structures could be exposed in the future, all municipalities must adhere to the New York State Building Code in addition to any local changes that they may have made, so that they will be constructed with a certain degree of protection from the most frequent high wind events.

Future Development Trend – Lightning Hazard Area

The lightning hazard area encompasses the whole of Lewis County and is essentially uniform from one jurisdiction to the next. Therefore, future development trends for the lightning hazard area would be the same as those county-wide. While an increased number of new structures could be exposed in the future, all municipalities must adhere to the New York State Building Code in

addition to any local changes that they may have made, so that they will be constructed with a certain degree of protection from the most frequent lightning events.

Future Development Trends – Winter Storm Hazard Area

The risk of significant snow and ice storms encompasses the entire County and is uniform from one jurisdiction to the next. Therefore, future development trends for the winter storm hazard area would be the same county-wide. It is anticipated that while an increasing number of new structures will be present in the County, they will be constructed at least in accordance with currently adopted building codes which include basic measures to minimize damages caused by winter storms, particularly with regard to snow loading and the protection of utilities.

Future Development Trends – Dam Failure Hazard Area

The New York State Department of Environmental Conservation Dam Safety Program maintains an inventory of dams in the State and conducts safety inspections of dams, completes technical reviews of proposed dam construction or modification, monitors remedial work for dam safety compliance, and is involved in emergency preparedness activities. At the time of writing, research of readily available data sources did not reveal any dams proposed or under construction in Lewis County (or on watercourses flowing into Lewis County) in addition to those listed by NYSDEC. However, there remains the possibility of new development in vacant parcels located in potential inundation areas. Since breach/failure inundation areas may mirror mapped floodplains for some dams, it can be assumed that some existing flood prevention ordinances go some way towards reducing damages from dam failure, but overall this is an area which would benefit from more detailed study and analysis.

Future Development Trends – Drought Hazard Area

The drought hazard area encompasses the entire County and is essentially uniform from one jurisdiction to the next, although the local impact depends on the prevalence of agricultural land in individual municipalities. While the individual jurisdictions would prefer to focus on the preservation of farmland and other open space, possible pressures on agricultural land in Lewis County to be zoned for residential and other development, may reduce the economic effects of drought on agriculture, while the impact on potable water supplies may increase.

Future Development Trends – Flood Hazard Area

Based on the definitions given above and the digitized flood mapping in Lewis County, approximately 4,700 acres of potentially developable land (8% of all vacant land in the County) currently lie within flood hazard zones. Development within mapped flood hazard areas is currently regulated for communities participating in FEMAôs National Flood Insurance Program (NFIP). All municipalities in the County except for the Town of Montague participate in FEMAôs National Flood Insurance Program (based on FEMAôs Community Status Book Report (April 17, 2009), and thereby must have in place a floodplain management ordinance to regulate activities in the floodplain, as well as a designated floodplain manager/NFIP Coordinator to enforce the relevant ordinances. This will work to protect new development and substantial improvements in the Countyôs floodplains. While it is likely that an increased number of assets could be susceptible to flooding, it is assumed that new structures will be built to codes that will offer a certain degree of protection from the most frequent events.

Individuals and developers often look toward land along rivers, streams, canals, and lakes for development because of the passive and active recreational opportunities that they offer. In turn, flood hazard areas are often areas where development pressures are high due to the recreational and aesthetic value of these lands, particularly in communities where the amount of undeveloped land is small and the density of development is high. Recent years have seen increased development of both seasonal and year-round residences around Lewis County lakes, in particular Brantingham, Chase and Beaver Lakes, and Lake Bonaparte. While this trend can be expected to continue to a certain extent, mapped floodplains adjacent to lakes in Lewis County tend not to diverge greatly from the lake shorelines, indicating that the risk of flooding of new lakefront development is not as high as for development adjacent to rivers. In addition to existing floodplain management ordinances in individual municipalities, the County Comprehensive Plan outlines design considerations for lakefront development which aim to ensure that future lakefront development does not eliminate public access to Lewis County lakes. Recent development directly adjacent to County rivers and watercourses does not appear to have been as significant as that in lakefront areas, and future development in such areas is likely to be restricted not only by existing floodplain management ordinances, but also by design considerations outlined in the County Comprehensive Plan that call for riparian buffer areas to protect water quality, reduce bank erosion, and provide wildlife habitat.

Future Development Trends – Ice Jam Hazard Area

While there exists no formal mapping of ice jam hazard areas, due to the unpredictable and localized nature of the hazard, the ice jam hazard is similar to the flood hazard in that ice jams may cause rivers and streams to overflow their banks. If a structure is near the banks of the rivers or streams, it may also be subject to structural damage from the impact of ice striking the structure. The jurisdictionsô flood hazard ordinances are assumed to currently deal with the flooding aspect of the ice jam hazard, and future damages due to this hazard will depend on development within the floodplain and adherence to the relevant building codes. While an increased number of assets could be susceptible, it is assumed that they will be built to codes that will offer a certain degree of protection from the most frequent events.

Future Development Trends – Earthquake Hazard Area

For Lewis County, PGA values of between 3 and 5%g have a 10 percent chance of being exceeded over 50 years (excluding the sliver of undeveloped land in the north east of the County that is mapped as a slightly higher risk). The underlying seismic earthquake hazard area encompasses the entire County and does not vary from one jurisdiction to the next, although the effects of an earthquake may vary from one jurisdiction and across jurisdictions as the soil type varies. Therefore, future development trends for the earthquake hazard area would be the same as those observed county-wide. All communities have adopted the New York State Building Code in addition to any local changes that they may have made. While an increased number of assets could be susceptible, it is assumed that they will be built to codes that will offer a certain degree of protection from the most frequent events.

Future Development Trends – Landslide Hazard Area

While there have been several landslide incidents recorded and mapped in Lewis County by the NYSGS, no significant areas within the County have been specifically identified as experiencing a high landslide incidence or susceptibility except for the banks of the Independence River in the Towns of Watson and Greig. Future development in landslide hazard areas is expected to mirror

those trends observed county-wide. All communities have adopted the New York State Building Code in addition to any local changes that they may have made. While an increased number of structures could be potentially, it is assumed that they will be built to codes (such as those regulating development in areas with steep slopes adopted by some municipalities) that will offer a certain degree of protection.

Future Development Trends – Wildfires

More than two thirds (69%) of the parcels currently classified as vacant in Lewis County are located in delineated wildfire hazard areas - a total of 40,212 acres of potentially developable land. The severity of the hazard is greatest in areas of high fuel loading and steep slopes. Areas that are typically considered to be safe from wildfires include highly urbanized, developed areas that are not contiguous with vast areas of wildland. Areas typically considered to be prone to wildfires include large tracts of wild lands containing heavier fuels with high continuity such as those forested areas in many parts of the study region. Pressure to develop some forested areas and open land adjacent to forested areas, especially for residential use, will generally result in increases to the wildland-urban interface and the value of improved property within these areas in most jurisdictions, and hence an increased risk of future property damage and public danger due to wildfires.

SECTION 4 - CAPABILITIES AND RESOURCES

This capability assessment examines the ability of the Lewis County Communities and other participating jurisdictions to implement and manage a comprehensive mitigation strategy, which includes a range of mitigation actions. The strengths, weaknesses, and resources of participating jurisdictions are identified in this assessment as a means to develop an effective hazard mitigation program. Furthermore, the capabilities identified in this assessment are evaluated collectively to develop recommendations, which support the implementation of effective mitigation actions throughout the Region.

URS Corporation distributed questionnaires to the Jurisdictional Assessment Team in order to initiate this capability assessment. The questionnaires requested information pertaining to existing plans, polices, and regulations that contribute to or hinder the ability to implement hazard mitigation actions. They also requested information pertaining to the legal and regulatory capability, technical and administrative capacity, and fiscal capability of each jurisdiction. Of the 27 jurisdictions (Lewis County included), County staff, eleven towns and seven villages submitted completed questionnaires to Lewis County Fire and Emergency Management by March 2010 illustrating their capability to implement a mitigation strategy. In addition to information included in the questionnaires, the 2004 Lewis County Land Use Regulations Status report was used to populate table 4-1.

This section describes the activities currently underway, which contribute to or can be utilized for hazard mitigation. Due to the limited response received from participating jurisdictions, the capability assessment emphasizes the technical and financial resources available at the State and Federal levels, which the communities in the Region can access to effectively implement a hazard mitigation program.

Capabilities and Resources – Lewis County Jurisdictions

Legal and Regulatory Capability

As indicated in Table 4-1, the Lewis County jurisdictions have several policies, programs, and capabilities, which help to prevent and minimize future damages resulting from hazards. These tools are valuable instruments in pre and post disaster mitigation as they facilitate the implementation of mitigation activities through the current legal and regulatory framework. These policies, programs, and capabilities are described in greater detail for the participating jurisdictions, as well as the State and Federal levels.

Table 4-1
Jurisdictional Legal and Regulatory Capabilities

Jurisdiction	Building Code	Zoning Ordinance	Subdivision Ordinance	Special Purposes Ordinance	Growth Mgmt Ordinance	Site Plan Review Requirements	Comprehensive Plan	Capital Improvements Plan	Economic Development Plan	Emergency Response Plan	Post-Disaster Recovery Plan	Post-Disaster Recovery Ordinance	Real Estate Disclosure Ordinance
County of Lewis							ã		ã	ã	ã		
Town of Croghan		ã		ã		ã							
Town of Denmark		ã		ã									
Town of Diana		ã		ã		ã							ã
Town of Greig	ã	ã	ã	ã	ã	ã							
Town of Harrisburg		ã	ã	ã		ã							
Town of Lewis		ã	ã	ã		ã		ã					
Town of Leyden		ã		ã		ã							
Town of Lowville	ã	ã	ã	ã		ã	ã	ã					
Town of Lyonsdale				ã		ã							
Town of Martinsburg	ã	ã	ã	ã		ã							
Town of Montague		ã	ã	ã		ã	ã						
Town of New Bremen		√		√		√							
Town of Osceola		ã		ã		ã							
Town of Pinckney		ã	ã	ã			ã						
Town of Turin				√									
Town of Watson		√		√									
Town of West Turin		ã	ã	ã		ã	ã			ã	ã		
Village of Castorland				ã									
Village of Constableville	ã	ã	ã				ã		ã	ã			
Village of Copenhagen	√		√	√		√							
Village of Croghan				ã									
Village of Harrisville		√		√		√	√		√	√			
Village of Lowville	ã	ã	ã	ã		ã	ã			ã			
Village of Lyons Falls				ã					ã	ã			
Village of Port Leyden				ã			ã	ã					
Village of Turin				√		√							

Building Code

Building codes regulate construction standards and are developed for specific geographic areas of the country. They consider the type, frequency, and intensity of hazards present in the region. Structures built to applicable building codes are inherently resistant to many hazards such as strong winds, floods, and earthquakes. Due to the location specific nature of the building codes, these are very valuable tools for mitigation.

The Towns of Greig, Lowville and Martinsburg, and the Villages of Constableville, Copenhagen and Lowville adhere to a building code through local authority. Several communities including the County of Lewis noted that the authority for enforcing the building code comes from the New York State Building Code.

Zoning Ordinance

Zoning is a useful tool to consider when developing a mitigation strategy. It can be used to restrict new development, require low-density development, and designate specific uses (e.g. recreational) in the hazard prone areas. Private property rights must be considered, but enacting a zoning ordinance can reduce or potentially eliminate damages from future hazard events.

All of the jurisdictions that completed the Capability Assessment Questionnaire have adopted a zoning ordinance with the exception of the County of Lewis; the Towns of Lowville, Lyonsdale, Martinsburg and Turin; and the Villages of Castorland, Copenhagen, Croghan , Lyons Falls, Port Leyden and Turin. The County of Lewis Zoning Board reviews changes to local zoning laws.

Subdivision Ordinance

Subdivision ordinances offer an opportunity to account for natural hazards prior to the development of land as they formulate regulations when the land is subdivided. Subdivision design that incorporates mitigation principles can reduce the exposure of future development to hazard events

The Towns of Greig, Harrisburg, Lewis, Lowville, Martinsburg, Montague, Pinckney, and West Turin, and the Villages of Constableville, Copenhagen, and Lowville have adopted a subdivision ordinance. A community also referenced subdivision regulations of the Adirondack Park Agency.

Special Purpose Ordinance

A special purpose ordinance is a form of zoning in which specific standards dependent upon the special purpose or use must be met. For example, many special purpose ordinances include basic development requirements such as setbacks and elevations. The special purpose ordinance is a useful mitigation technique particularly when implemented to reduce damages associated with flooding and coastal erosion. Special purpose ordinances identified by jurisdictions include mobile home laws, sign laws, floodplain regulations, sanitary codes and junkyard laws.

All of the jurisdictions that completed the Capability Assessment Questionnaire have adopted a special purpose ordinance. One community also referenced special purposes ordinances of the Adirondack Park Agency, and the Village of Constableville referenced a Trailer Ordinance.

Growth Management Ordinance

Growth management ordinances are enacted as a means to control the location, amount, and type of development in accordance with the larger planning goals of the jurisdiction. These ordinances often designate the areas in which certain types of development is limited and encourage the protection of open space for reason such as environmental protection and limitation of sprawl.

Only the Town of Greig has adopted a growth management ordinance. A community also referenced growth management requirements of the Adirondack Park Agency.

Site Plan Review Requirements

Site plan review requirements are used to evaluate proposed development prior to construction. An illustration of the proposed work, including its location, exact dimensions, existing and proposed buildings, and many other elements are often included in the site plan review requirements. The site plan reviews offer an opportunity to incorporate mitigation principles, such as ensuring that the proposed development is not in an identified hazard area and that appropriate setbacks are included.

The Towns of Croghan, Diana, Greig, Harrisburg, Lewis, Leyden, Lowville, Lyonsdale, Martinsburg, Montague, New Bremen, Pinckney and West Turin; and the Villages of Constable, Copenhagen, Harrisville, Lowville and Turin have adopted site plan review requirements.

Comprehensive Plan

A comprehensive plan is a document which illustrates the overall vision and goals of a community. It serves as a guide for the communityôs future and often includes anticipated demographics, land use, transportation, and actions to achieve desired goals. Integrating mitigation concepts and policies into a comprehensive plan provides a means for implementing initiatives through legal frameworks and enhances the opportunity to reduce the risk posed by hazard events.

The County of Lewis; the Towns of Lowville, Montague, Pinckney and West Turin; and the Villages of Constableville, Harrisville, Lowville and Port Leyden have a Comprehensive Plan. In addition, The Towns of Harrisburg, Martinsburg, Montague and Pinckney, as well as the Village of Lyons Falls, noted that they are working on a comprehensive plan. Several of the communities noted that they do adhere to the Countyôs Comprehensive Plan.

Capital Improvement Plan

Capital Improvement Plans schedule the capital spending and investments necessary for public improvements such as schools, roads, libraries, and fire services. These plans can serve as an important mechanism to reduce growth in identified hazard areas through limited public spending and can be used as a to develop a match for mitigation projects.

Of the jurisdictions that completed the Capability Assessment Questionnaire, only the Towns of Lewis Lowville and the Village of Port Leyden have a Capital Improvement Plan.

Economic Development Plan

Economic development plans offer a comprehensive overview of the local or regional economic state, establish policies to guide economic growth, and include strategies, projects, and initiatives to improve the economy in the future.

Furthermore, economic development plans, similar to capital improvement plans, offer an opportunity to reduce development in hazard prone areas by encouraging economic growth in areas less susceptible to hazard events.

The County of Lewis; and the Villages of Constableville, Harrisville and Lyons Falls have adopted economic development plans. Several of the communities noted that they do adhere to the Countyôs Economic Development Strategy.

Emergency Response Plan

Emergency response plans provide an opportunity for local governments to anticipate an emergency and plan the response accordingly. In the event of an emergency, a previously established emergency response plan can reduce negative effects as the responsibilities and means by which resources are deployed has been previously determined. There are fourteen volunteer fire departments in Lewis County, eight of which provide ambulance services, as well as the Lewis County Search and Rescue, which provides county-wide fire and rescue services. Lewis County Office of Fire and Emergency Management coordinates mutual aid agreements and services between the departments. The Village of Lowville is the only municipality with local police services, with the remainder of the County being provided police services by the Lewis County Sheriffôs Department or the New York State Police.

The County of Lewis; the Town of West Turin; and the Villages of Constableville, Harrisville, Lowville and Lyon Falls indicated in the Capability Assessment Questionnaire that they have adopted an emergency response plan. . Several of the communities noted that they do adhere to the Countyôs Emergency Response Plan.

Post-Disaster Recovery Plan

A post-disaster recovery plan guides the physical, social, environmental, and economic recovery and reconstruction procedures after a disaster. Hazard mitigation principles are often incorporated into post-disaster recovery plans in order to reduce repetitive disaster losses.

Only the County of Lewis and the Town of West Turin have developed post-disaster recovery plans. Several of the communities noted that they do adhere to the Countyôs Post-Disaster Recovery Plan.

Post-Disaster Recovery Ordinance

Post-disaster recovery ordinances are often produced in conjunction with post-disaster recovery plans. The ordinances are enacted after a hazard event to guide redevelopment in order to reduce future damages and mitigate repetitive loss.

No municipalities in Lewis County currently have a post-disaster recovery ordinance.

Real Estate Disclosure Ordinance

A real estate disclosure ordinance requires individuals selling real estate to inform potential buyers of the hazards to which the property and/or structure is vulnerable prior to the sale. Such a requirement ensures that the new property owner is aware of the hazards to which the property is at risk of damage.

Only the Town of Diana has adopted a real estate disclosure ordinance.

Administrative and Technical Capability

The ability of a local government to develop and implement mitigation projects, policies, and programs is contingent upon its staff and resources. Administrative capability is determined by evaluating whether there are an adequate number of personnel to complete mitigation activities. Similarly, technical capability can be evaluated by assessing the level of knowledge and technical expertise of local government employees, such as personnel skilled in surveying and Geographic Information Systems.

Table 4-2 provides a summary of the administrative and technical capabilities currently in place in each participating jurisdiction. The checkmark (ã) indicates that the local government maintains a staff member for the given function.

Table 4-2
Jurisdictional Administrative and Technical Capabilities

Jurisdiction	Planner(s) or engineer(s) with knowledge of land development and management practices	Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure	Planner(s) or engineer(s) with an understanding of natural and/or human caused hazards	Floodplain manager	Surveyors	Staff with education or expertise to assess the community's vulnerability to hazards	Personnel skilled in GIS and/or HAZUS	Scientists familiar with the hazards of the community	Emergency Manager	Grant writers
County of Lewis	ã		ã				ã		ã	ã
Town of Croghan				ã						
Town of Denmark										
Town of Diana				ã						
Town of Greig										
Town of Harrisburg						ã				ã
Town of Lewis		ã	ã							
Town of Leyden										
Town of Lowville	ã	ã	ã	ã		ã	ã			ã
Town of Lyonsdale						ã	ã		ã	ã
Town of Martinsburg										

Table 4-2
Jurisdictional Administrative and Technical Capabilities

Jurisdiction	Planner(s) or engineer(s) with knowledge of land development and management practices	Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure	Planner(s) or engineer(s) with an understanding of natural and/or human caused hazards	Floodplain manager	Surveyors	Staff with education or expertise to assess the community's vulnerability to hazards	Personnel skilled in GIS and/or HAZUS	Scientists familiar with the hazards of the community	Emergency Manager	Grant writers
Town of Montague		ã								ã
Town of New Bremen										
Town of Osceola										
Town of Pinckney		ã								
Town of Turin										
Town of Watson										
Town of West Turin									ã	
Village of Castorland										
Village of Constableville										
Village of Copenhagen										
Village of Croghan										
Village of Harrisville				√						
Village of Lowville		ã		ã			ã			
Village of Lyons Falls		ã								ã
Village of Port Leyden	ã		ã						ã	
Village of Turin										

It should be noted that Lewis County has several other agencies or department located in the County that may be able to provide assistance in risk reduction activities and should be contacted for regarding possible assistance. This includes the Tug Hill Commission, the Adirondack Park Agency, the United States Department of the Army (Fort Drum), the United States Department of Agriculture (USDA) Forest Service and the USDA Soil and Water Conservation District. Each of these may be able to provide technical assistance or monetary assistance toward risk reduction activities.

Fiscal Capability

The ability of a local government to implement mitigation activities is also associated with the funding available for policies and projects. Funding for such initiatives is often locally based revenue and financing, as well as outside grants. Costs associated with mitigation activities range from staffing and administrative costs to the actual cost of the mitigation project.

Table 4-3 provides a summary of the fiscal capabilities currently in place in each participating jurisdiction. The checkmark (ã) indicates that the financial resource is available in the local jurisdiction for mitigation purposes.

Table 4-3
Jurisdictional Fiscal Capabilities

Jurisdiction	Community Development Block Grants (CDBG)	Capital Improvements Project Funding	Authority to Levy Taxes for Specific Purposes	Fees for Water, Sewer, Gas, or Electric Service	Impact Fees for Homebuyers or Developers for New Developments/Homes	Incur Debt through General Obligation Funds	Incur Debt through Special Tax and Revenue Bonds	Incur Debt through Private Activity Bonds	Withhold Spending in Hazard-Prone Areas	Other
County of Lewis	ã	ã				ã				
Town of Croghan	ã	ã		ã	ã	ã	ã	ã	ã	
Town of Denmark										
Town of Diana		ã	ã							
Town of Greig	ã	ã	ã			ã				
Town of Harrisburg	ã	ã	ã						ã	
Town of Lewis	ã	ã	ã			ã	ã			
Town of Leyden										
Town of Lowville	ã	ã	ã	ã	ã	ã	ã	ã		
Town of Lyonsdale			ã		ã	ã	ã	ã		
Town of Martinsburg	ã	ã	ã	ã		ã	ã			
Town of Montague	ã	ã	ã			ã			ã	
Town of New Bremen										
Town of Osceola										
Town of Pinckney										
Town of Turin										
Town of Watson										
Town of West Turin	√	√	√							
Village of Castorland				ã			ã			
Village of Constableville	ã	ã	ã	ã		ã				
Village of Copenhagen	√	√	√	√		√				
Village of Croghan										
Village of Harrisville	√	√	√	√	√	√	√	√	√	
Village of Lowville	ã	ã		ã		ã			ã	
Village of Lyons Falls		ã	ã	ã		ã	ã			
Village of Port Leyden	ã	ã	ã	ã		ã	ã			
Village of Turin										

It should be noted that several of the communities answered that they did not know whether they had various financial capabilities available to them. It is recommended that one of the proposed actions of this plan be to research the capabilities further.

The Lewis County Comprehensive Economic Development Strategy, August 2006, listed a number of public funding avenues for economic development. These funding streams should be researched to determine whether they may be used to leverage damage reduction in the County.

Conclusion

This capability assessment finds that all of the Lewis County participating jurisdictions collectively have a significant level of legal, technical, and fiscal tools and resources necessary to implement hazard mitigation strategies

Capabilities and Resources – State of New York

The State of New York, through the New York State Consolidated Laws, Executive Law Article 2-B entitled ñ*State and Local: Natural and Man-Made Disaster Preparedness*ò established the Disaster Preparedness Commission (DPC) to examine all aspects of natural and human induced disasters. While the law emphasized local authority and responsibility in the development and maintenance of plans and programs for natural and human induced disaster mitigation, DPC is tasked to examine all aspects of disaster prevention, response, and recovery, as well as prepare the state disaster preparedness plans.

The DPC consists of commissioners, directors, and chairs of State agencies and the American Red Cross. State agencies such as the New York State Emergency Management Office (SEMO), the Department of State (DOS), the Department of Environmental Conservation (DEC), and the Department of Transportation (DOT) are participants in the DPC. The DPC, with the support of the Mitigation Section of the SEMO, developed the New York State Multi-Hazard Mitigation Plan. The State Plan was not only designed to fulfill the requirements of the Disaster Mitigation Act of 2000, but was also created to serve as a resource for local governments in the development of local hazard mitigation plans.

The Stateôs Plan includes an evaluation of the Stateôs pre and post hazard mitigation policies, programs, and capabilities; the policies related to development in hazard prone areas; and the Stateôs funding capabilities. The Lewis County Multi-Jurisdictional Hazard Mitigation Plan incorporates many of the resources identified in the State Plan to demonstrate the capabilities present for local jurisdictions to consider in the development of local hazard mitigation. Many of these capabilities are described in further detail in this portion of the assessment.

New York State Emergency Management Office (SEMO)

In addition to facilitating the development of the New York State Multi-Hazard Mitigation Plan, SEMO offers a variety of assistance to local governments in the preparation and implementation of mitigation activities. For example, the SEMO Mitigation and Planning Sections recently coordinated to develop the ñEmpire Plan,ò a comprehensive emergency management plan which addresses the aspects of emergency management: readiness, mitigation, response, and recovery. SEMO developed the ñEmpire Planò as a model for local governments to use in the creation of local comprehensive emergency management plans. In addition to the ñEmpire Planò SEMO also offers direct funding support and technical assistance for the

preparation of all-hazards mitigation plans for those communities to which funding for such assistance is not available. Beyond these activities, SEMO also coordinates with agencies such as the New York Department of State and the Department of Environmental Conservation to provide resources for hazard mitigation.

New York State Department of State (DOS)

DOS offers local governments many forms of assistance for preparing, implementing, and sustaining mitigation activities. The DOS Division of Coastal Resources, for example, provides local governments with technical assistance in the completion of Local Waterfront Revitalization Plans (LWRP). These plans are comprehensive land and water use plans which contain many components and address issues such as coastal erosion management and waterfront development. Upon completion of the LWRP, the plan is reviewed by the SEMO Mitigation Section to ensure that the policies and strategies outlined do not place people or property at undue risk to a hazard event. Approximately sixty-six local jurisdictions in the State have approved LWRPs.

New York State Department of Environmental Conservation (DEC)

The DEC directs many programs and forms of assistance useful to local governments developing mitigation strategies.

DEC provides technical assistance to local governments through the Floodplain Management Program and the Flood Protection Bureau. The Floodplain Management Program provides assistance to local governments adopting and administering local floodplain management ordinances. Similarly, the Flood Protection Bureau provides technical assistance in eligibility requirements for the National Flood Insurance Program in order to qualify local governments for entrance into the program. Each of these forms of assistance aids local governments in the development and implementation of flood mitigation activities to eliminate or reduce future flood damages.

Further technical assistance in floodplain management is provided through ñCommunity Assistance Visitsò administered by the DEC in collaboration with the SEMO. These two agencies partner in this effort to provide technical assistance on floodplain management program development. The Visits are prioritized by an assessment of needs conducted by the DEC and the SEMO. In addition to the ñCommunity Assistance Visits,ò these agencies also coordinate to provide assistance for flood mitigation planning and sponsor technical assistance workshops for local governments interested in developing flood mitigation programs.

New York State Department of Transportation (DOT)

The Department of Transportation incorporates mitigation techniques into routine design, construction, and maintenance procedures throughout the State and also engages in mitigation projects, technical assistance activities, and training. For example, DOT provides guidance to local communities developing plans for the long-term re-routing of traffic due to a disaster. Furthermore, DOT engages in mitigation projects such as the elevation of roads in flood prone areas, cleaning of ditches and streams, management of stormwater erosion, tree pruning, and bi-annual inspection of bridges. DOT also develops and conducts training sessions on heavy snow removal and snow plowing for highway maintenance supervisors and equipment operators.

State Resources

This capability assessment finds that the State of New Yorkôs various departments collectively have a significant level of legal, technical, and fiscal tools and resources necessary to implement hazard mitigation strategies.

Capabilities and Resources – Federal

The Federal government offers a wide range of funding and technical assistance programs to help make communities more disaster resistant and sustainable. Many of these are included in Table Z, the Federal Technical Assistance and Funding matrix. Programs associated with the construction or reconstruction of housing and businesses, public infrastructure (transportation, utilities, water, and sewer), and supporting overall hazard mitigation and community planning objectives are emphasized in the matrix. Some programs are disaster-specific, activated by a Presidential Disaster Declaration under the provisions of the Stafford Act. Also included are programs or grants that are not specifically disaster related.

Federal Resources

FEMA has developed a large number of documents that address implementing hazard mitigation at the local level. Five key resource documents are briefly described.

How-to Guides. Some communities in Lewis County have chosen not to participate in the planning process at this time, but could participate during future updates of the plan. Those communities can find additional information about the hazard mitigation planning process on the FEMA web site. FEMA has developed a series of nine ñhow-to guidesò to assist States, communities, and tribes in enhancing their hazard mitigation planning capabilities. The first four guides mirror the four major phases of hazard mitigation planning used in the development of the Lewis County Communities Regional Hazard Mitigation Plan. The last five how-to guides address special topics that arise in hazard mitigation planning such as using benefit-cost analysis and integrating man-made hazards. The use of worksheets, checklists, and tables make these guides a practical source of guidance to address all stages of the hazard mitigation planning process. They also include special tips on meeting DMA 2000 requirements.

Post-Disaster Hazard Mitigation Planning Guidance for State and Local Governments. FEMA, DAP-12, September 1990. This handbook explains the basic concepts of hazard mitigation, and shows State and local governments how they can develop and achieve mitigation goals within the context of FEMAôs post-disaster hazard mitigation planning requirements. The handbook focuses on approaches to mitigation, with an emphasis on multi-objective planning.

Mitigation Resources for Success CD. FEMA 372, September 2001. This CD contains a wealth of information about mitigation and is useful for State and local government planners and other stakeholders in the mitigation process. It provides mitigation case studies, success stories, information about Federal mitigation programs, suggestions for mitigation measures to homes and businesses, appropriate relevant mitigation publications, and contact information.

A Guide to Federal Aid in Disasters. FEMA 262, April 1995. When disasters exceed the capabilities of State and local governments, the Presidentôs disaster assistance program (administrated by FEMA) is the primary source of Federal assistance. This handbook discusses the procedures and process for obtaining this assistance, and provides a brief overview of each program.

The Emergency Management Guide for Business and Industry. FEMA 141, October 1993. This guide provides a step-by-step approach to emergency management planning, response, and recovery. It also details a planning process that companies can follow to better prepare for a wide range of hazards and emergency events. This effort can enhance a companyôs ability to recover from financial losses, loss of market share, damages to equipment, and product or business interruptions. This guide could be of great assistance to Lewis County industries and businesses located in hazard prone areas.

2010 Hazard Mitigation Assistance Unified Guidance. June 1, 2009. This guide provides information regarding applying for each of FEMAôs hazard mitigation grant programs including the Hazard Mitigation Grant Program (HMGP), the Pre-Disaster Mitigation Program (PDM), the Flood Mitigation Assistance Program (FMA), the Repetitive Flood Claims Program (RSC) and the Severe Repetitive Loss Program (SRL). This guidance is updated annually and can be found on FEMAôs web site at: http://www.fema.gov/library/viewRecord.do?id=3649.

Important Websites

The following are important websites that provide focused access to valuable planning resources for communities interested in sustainable development initiatives.

- http://www.fema.gov - Web site of the Federal Emergency Management Agency includes links to information, resources, and grants that communities can use in planning and implementation of sustainable measures.

- http://www.planning.org ï Web site of the American Planning Association, a non-profit professional association that serves as a resource for planners, elected officials, and citizens concerned with planning and growth initiatives.

- http://www.ibhs.org ï Web site of the Institute for Business and Home Safety, an initiative of the insurance industry to reduce deaths, injuries, property damage, economic losses, and human suffering caused by natural disasters. Online resources provide information on natural hazards, community land use, and ways you can protect your property from damage.

Federal Technical Assistance and Funding

The Federal government offers a wide range of funding and technical assistance programs that communities can access to assist in their long-term recovery. Some of these programs are geared to disaster preparedness and mitigation planning, while the focus of others is the long-term vitality of the communities. To assist communities in their rebuilding efforts and to better prepare for the future, the information in Table 4-4 is divided under the headings of conservation and environment, economic development, emergency management, historic preservation, housing, infrastructure, and mitigation.

For further information on these and other Federal programs, see the Catalog of Federal Domestic Assistance (CFDA) available on online at http://www.cfda.gov/.

Table 4-4a:
Federal Technical Assistance and Funding
Conservation and Environment

Agency	Program	Type of Assistance / Projects Funded	Purpose	Eligible Applicants	Where To Obtain Application	Application Process	Application Deadline	For More Information
DOC; NOAA	Habitat Conservation	Cooperative grants to support a wide variety of research, habitat restoration, construction, management and public education activities for marine and estuarine habitats.	To benefit US fisheries, conserve protected resources, and add to the economic and social well being of the nation.	Local governments, universities and colleges, Indian Tribes, private profit and non-profit research and conservation organizations and individuals.	State coordinating official.	Submit application through Grants.gov. Proposals are evaluated for technical merit, soundness of design, competency of applicant to perform the proposed work, potential contribution of the project to national goals and appropriateness and reasonableness of costs.	90 days prior to the start date of the project.	Regional or local office. http://www.nmfs.noaa.gov/regional.htm
DOC; NOAA; Marine Fisheries Service	Unallied Management Costs	Cooperative grants to support management activities for high priority marine and estuarine resources.	To provide economic, sociological, public policy and other information needed by administrators for conserving and managing fishery resources and protected species in their environment.	Local governments, universities and colleges, Indian Tribes, private profit and non-profit research organizations and individuals.	State coordinating official.	Submit application through Grants.gov. Proposals are evaluated for technical merit, soundness of design, competency of applicant to perform the proposed work, potential contribution of the project to national goals and appropriateness and reasonableness of costs.	90 days prior to the start date of the project.	Southeast Federal Program Officer http://www.nmfs.noaa.gov/regional.htm (727) 824-5304.
DOD; USACE	Beach Erosion Control Projects	Specialized services to design and construct projects under a cost share method.	To protect beach and shore erosion through projects not specifically authorized by Congress.	Political subdivisions of the state and other responsible local agencies.	Consult with the nearest District Engineer.	Formal letter to District Engineer. Approval is subject to the availability of funds.	None.	Corps of Engineers District Office. http://www.usace.army.mil/howdoi/where.html
DOI; FWS	Conservation Grants Private Stewardship for Imperiled Species	Grants to fund voluntary restoration management, or enhancement of habitat on private lands for endangered, threatened, proposed, candidate or other	To provide Federal financial and other assistance to individuals and groups engaged in local, private and voluntary conservation efforts to be carried out on private lands that benefit species listed or proposed as endangered or threatened.	Sponsored organization, individuals/families, specialized groups, public non-profit institutions/organizations, private non-profit institutions/organizations, small	See www.grants.gov or http;//endangered.fws.gov/grants/private_stewardship/index.html	See www.grants.gov or http;//endangered.fws.gov/grants/private_stewardship/index.html	See www.grants.gov or http://endangered.fws.gov/grants/private_stewardship/index.html	Regional or local office. http://endangered.fws.gov/grants/private_stewardship/index.html

Table 4-4a: Federal Technical Assistance and Funding *Conservation and Environment*								
Agency	**Program**	**Type of Assistance / Projects Funded**	**Purpose**	**Eligible Applicants**	**Where To Obtain Application**	**Application Process**	**Application Deadline**	**For More Information**
		at risk species.		business, profit organizations and other private institutions/organizations.				
DOI; FWS	North American Wetland Conservation Fund	Grants to acquire real property interest in lands and water, including water rights, and to restore, manage, and/or enhance wetland ecosystems and other habitats for migratory birds, and other fish and wildlife.	To provide grant funds for wetland conservation projects.	Public or private organizations or to individuals who have developed partnerships to carry our wetland conservation projects.	Grants.gov	Submit applications.	March and July of each year.	Regional or local office. http://www.fws.gov/birdhabitat/Grants/NAWCA/CouncilAct.shtm
DOI; National Park Service	Save America's Treasures	Project Grants to protect and preserve nationally significant historical sites and wall as nationally significant collections of intellectual and cultural artifacts.	To provide matching grants for preservation and/or conservation work on nationally significant intellectual and cultural artifacts and nationally significant historical structures and sites.	Intrastate, interstate, local agencies, public or private non-profit institutions/organizations, public or private colleges and universities, including state colleges and universities and federally recognized Indian tribes.	Contact Save American Treasures at http://www.cr.nps.gov/hps/treasures/ (202) 513-7270, ext. 6.	Contact Save American Treasures at http://www.cr.nps.gov/hps/treasures/ (202) 513-7270, ext. 6.	Contact Save American Treasures at http://www.cr.nps.gov/hps/treasures/ or (202) 513-7270, ext. 6.	Contact Save American Treasures at http://www.cr.nps.gov/hps/treasures/ or (202) 513-7270, ext. 6.
EPA; Office of Brownfields Cleanup and Redevelopment, Office of Solid	Brownfields Assessment and Cleanup Cooperative Agreements.	A revolving loan fund and project grants to provide funding to inventory, characterize, assess and conduct planning	To assist in the expansion, redevelopment, or reuse of sites complicated by the presence of a hazardous substance, pollutant, or contaminant.	A general purpose unit of local government, a land clearance authority or a quasi – government entity acting under the	EPA Regional Office. http://www.epa.gov/epahome/locate2.htm	Competitive grant program. See Grant Announcement available from EPA.	Contact Regional Office. http://www.epa.gov/epahome/locate2.htm	Brownfields Regional Office Coordinator, Dallas, Texas (214) 665-6737. http://www.epa.gov/epahome/locate2.htm

Table 4-4a:
Federal Technical Assistance and Funding
Conservation and Environment

Agency	Program	Type of Assistance / Projects Funded	Purpose	Eligible Applicants	Where To Obtain Application	Application Process	Application Deadline	For More Information
Waste and Emergency Response		and community involvement related to Brownfield sites; to capitalize a revolving loan fund and provide sub-grants to carry out cleanup activities at the sites; and, to carry out cleanup activities on land owned by the grant recipient.		authority of the local government, a regional council or a group of general purpose units of government, a redevelopment agency, Indian Tribes, and non-profit organizations (subject to conditions).				
EPA, Office of Water	Regional Wetland Program Development Grants	Project Grants to encourage wetland program development by promoting the coordination and acceleration of research, investigations, experiments, training, demonstration, survey and studies related to the causes, effects, extent, prevention, reduction and elimination of water pollution.	To assist State, Tribal, local government agencies and interstate/intertribal entities to build capacity to protect, manage and restore wetlands.	Tribes, local governments, interstate agencies and intertribal consortia.	EPA Regional Office.	EPA Regional Office will review grant application and any grants will be awarded by the regional Administrator.	Contact EPA Regional Office. http://www.epa.gov/epahome/locate2.htm	EPA Regional Office, Wetland Coordinator. http://www.epa.gov/epahome/locate2.htm
USDA; Forest Service	Forest Land Enhancement Program	Project Grants for technical assistance to develop management plans, educational programs and assistance to	Sustainable management of non-industrial private forests and other rural land suitable for sustainable forest management.	State Forestry Agencies and Landowners, managers of non-industrial private forests lands, nonprofit organization,	State Forestry Agency. http://www.fs.fed.us/spf/coop/programs/loa/flep.shtml	The State must prepare a State Priority Plan that is approved by the Forest Service. After Approval a property owner is eligible for cost share assistance.	Deadlines are determined by State Forestry Agencies. http://www.fs.fed.us/spf/coop/programs/loa/flep.shtml	Regional or local office of US Forest Service. http://www.fs.fed.us/spf/coop/programs/loa/flep.shtml

Table 4-4a: Federal Technical Assistance and Funding *Conservation and Environment*								
Agency	**Program**	**Type of Assistance / Projects Funded**	**Purpose**	**Eligible Applicants**	**Where To Obtain Application**	**Application Process**	**Application Deadline**	**For More Information**
		increase awareness, and cost-share assistance to implement sustainable forestry practices on the ground.		consultant foresters, universities, other state, local and private organization and agencies.				
USDA; Forest Service	Urban and Community Forestry Program	Project grants for assistance in urban forestry programs.	To plan for, establish, manage and protect trees, forests, green spaces and related resources in and adjacent to cities and towns.	State Forestry, interested members of the public, private nonprofit organizations in urban and community forestry programs in cities and communities.	Contact Regional Offices.	Contact Regional Offices.	Contact Regional Offices. http://www.fs.fed.us/ucf/	Regional or local office of US Forest Service. http://www.fs.fed.us/ucf/

Table 4-4b:
Federal Technical Assistance and Funding
Economic Development

Agency	Program	Type of Assistance / Projects Funded	Purpose	Eligible Applicants	Where To Obtain Application	Application Process	Application Deadline	For More Information
DOC; EDA	Economic Adjustment Assistance	Project Grants to help local interests design and implement strategies to adjust or bring about changes in the economy.	Aids the long-range economic development of areas with severe unemployment, and low family income problems, aids in the development of public facilities and private enterprises to create new, permanent jobs.	Economic Development Districts, cities or other political subdivisions of the state or a consortium of political subdivisions, Indian tribes or a consortium of Indian tribes, institutions of higher learning or a consortium of such institutions, or public or non-profit organizations or association acting in cooperation with the political subdivisions.	Meet with EDA's Economic Development Representative (EDR) to determine whether the preparation of a project proposal is appropriate.	After meeting with EDR the Regional Director will decide whether to invite an application. More information will be given at that time.	Continuing basis.	Regional or Local Office. http://www.eda.gov/Contacts/Contacts.xml
DOC; EDA	Economic Development Support for Planning Organizations	Project grants to establish economic development strategies designed to reduce unemployment and increase incomes.	To strengthen economic development planning capacity.	Economic Development Districts, Indian Tribes, units of local government, institutions of higher education and private non-profit organizations.	Submit a letter of interest, a statement of distress and a proposed work program not to exceed 10 pages and SF 424 to regional or Local Office.	Following invitation by agency a formal application is made to the regional office and to the EDA state representative.	None.	Regional or Local Office. http://www.eda.gov/Contacts/Contacts.xml
DOD; Office of Economic Adjustment	Growth Management Planning Assistance	To provide project grants to assist local governments to undertake community economic adjustment planning activities.	Planning in response to the establishment or expansion of Department of Defense military Installation.	Local governments or regional organizations.	http://www.oea.gov	Application is reviewed and approved by the Department of Defense's Office of Economic Adjustment.	None.	Regional or Local Office. http://www.eda.gov/Contacts/Contacts.xml
DOL	Disaster Unemployment Assistance	Direct Payments for Specified Use; Provision of	Disaster Unemployment Assistance provides	In order to qualify for this benefit your employment	An applicant should consult the office or officials designated as	Claims should be filed in accordance with the state's instructions published in announcements about the availability	Applications for DUA must be filed within 30 days after the date of the SWA	More information about this program and where to apply for benefits under this

Table 4-4b:
Federal Technical Assistance and Funding
Economic Development

Agency	Program	Type of Assistance / Projects Funded	Purpose	Eligible Applicants	Where To Obtain Application	Application Process	Application Deadline	For More Information
		Specialized Services.	financial assistance to individuals whose employment or self-employment has been lost or interrupted as a direct result of a major disaster declared by the President of the United states. Before an individual can be determined eligible for Disaster Unemployment Assistance, it must be established that the individual is not eligible for regular unemployment insurance benefits (under any state or federal law). The program is administered by states as agents of the federal government.	or self-employment must have been lost or interrupted as a direct result of a major disaster and you must have been determined not eligible for regular state unemployment insurance. With exceptions for persons with an injury and for self-employed individuals performing activities to return to self-employment, individuals must be able to work and available for work, which are the same requirements to be eligible for state unemployment insurance benefits.	the single point of contact in his or her State for more information on the process the State requires to be followed in applying for assistance, if the State has selected the program for review.	of Disaster Unemployment Assistance, or contact the State Unemployment Insurance agency.	announcement regarding availability of DUA. When applicants have good cause, they may file claims after the 30-day deadline. However, no initial application will be considered if filed after the 26th week following the declaration date.	program is available at: http://workforcesecurity.doleta.gov/unemploy/disaster.asp To determine your eligibility for unemployment insurance (UI) benefits, you should contact the state unemployment insurance agency in the state where you are located as soon as possible after becoming unemployed. In some states, you can now file a claim by telephone and the Internet.
EDA	Economic Development and Adjustment Program, Sudden and Severe Economic Dislocation (Title IX)	Grants	To help States and localities to develop and/or implement strategies that address adjustment problems resulting from sudden and severe economic dislocation.	States, Localities, Non-Profit Organizations, and Indian Tribes.	Information regarding EDA's program procedures, regulations, and other requirements are available at EDA's website, www.eda.gov	Project grants can be funded in response to natural disasters including improvements and reconstruction of public facilities.	Contact the Disaster Recovery Coordinator, Economic Adjustment Division.	Disaster Recovery Coordinator, Economic Adjustment Division, EDA, DOC, Herbert C. Hoover Building, Washington, DC 20230. Telephone: 800.345.1222 or 202.482.6225. http://www.doc.gov/eda/html/prgtitle.htm

Table 4-4b:
Federal Technical Assistance and Funding
Economic Development

Agency	Program	Type of Assistance / Projects Funded	Purpose	Eligible Applicants	Where To Obtain Application	Application Process	Application Deadline	For More Information
FHWA; Maritime Administration	Development and Promotion of Ports and Intermodal Transportation	Advisory Services and Counseling, Technical Information.	Promote and plan for the development and utilization of domestic waterways, ports and port facilities.	Local government Agencies, Metropolitan Planning Organizations, Public Port and Intermodal Authorities, Trade Associations and Private Intermodal and Terminal Operators.	Regional or Local Office.	Personal Conference or Explanation of Problem.	None.	Regional or Local Office. http://www.marad.dot.gov/welcome/regional%20off_directory.html
HUD; Community Planning and Development	Community Development Block Grants / Brownfields Economic Development Initiative	Project Grants to carry out economic development projects on contaminated building s or land.	To return Brownfields to productive economic use.	Units of local government.	Application Procedures will be published in Notice of Funding Availability in the Federal Register.	The Process will be published in Notice of Funding Availability in the Federal Register.	Deadline will be published in Notice of Funding Availability in the Federal Register.	Regional or local Office. http://www.hud.gov/offices/cpd/economicdevelopment/programs/bedi/index.cfm
HUD; Office of Community Planning and Development	Community Development Block Grants Section 108 Loan Guarantees	Guaranteed/Insured Loans for financing of economic development, housing rehabilitation, public facilities, and large scale physical development projects.	To provide communities with a source of financing for economic development, housing rehabilitation, public facilities, and large scale physical development projects.	Metropolitan Cities and Urban Counties.	See 24 Code of Federal regulations, Section 570.704 for application requirements.	See 24 Code of Federal regulations, Section 570.704 for application process.	Continuing basis.	Regional or Local Office. http://www.hud.gov/offices/cpd/communitydevelopment/programs/108/index.cfm
HUD; Office of Community Planning and Development	Community Development Block Grants / Technical Assistance Program	Project Grants (Cooperative Agreements) to transfer skills and knowledge of planning, developing and administering CDBG programs to eligible block grant entities.	To help units of local government, Indian tribes and area wide planning organizations to plan, develop and administer local CDBG programs.	Units of local government, national or regional non-profit organizations that have membership comprised predominantly of entities or officials of entities of CDBG recipients, professional and technical service companies, public	In answer to competitions and solicitations. They will be detailed in the Federal Register.	Applicants will be notified of acceptance or rejections.	Deadlines are in solicitation documents.	Regional or Local Office. http://www.hud.gov/offices/cpd/communitydevelopment/programs/index.cfm

Table 4-4b:
Federal Technical Assistance and Funding
Economic Development

Agency	Program	Type of Assistance / Projects Funded	Purpose	Eligible Applicants	Where To Obtain Application	Application Process	Application Deadline	For More Information
				or private non-profit organizations including educational institutions and area-wide planning organizations.				
HUD; Policy Development and Research	Hispanic-Serving Institutions Assisting Communities	Project Grants for neighborhood revitalization, housing and economic development projects.	To assist Hispanic serving institutions of higher education to expand their role and effectiveness in addressing community development needs in their localities, consistent with the purposes of Title 1 of the housing and Community Development Act of 1974.	Nonprofit accredited Hispanic serving institutions of higher education that are on the US Dept. of Educations list of eligible HSIs or certify that they meet the statutory definition of an HIS.	Application Procedures will be published in Notice of Funding Availability in the Federal Register.	The Process will be published in Notice of Funding Availability in the Federal Register.	Deadline will be published in Notice of Funding Availability in the Federal Register.	HUD Office of University Partnerships http://www.oup.org/ (202) 708-3061.
HUD; Policy Development and Research	Historically Black Colleges and Universities Program	Project Grants for those activities that are eligible for CDBG funds as listed in 24 Code of Federal regulations, part 570, subpart C, particularly paragraphs 570,201 through 570.206.	To assist historically black colleges and universities to expand their role and effectiveness in addressing community development needs in their localities, including neighborhood revitalization, housing, and economic development, principally for persons of low-moderate income.	Historically Black Colleges and Universities as determined by the U.S. Dept. of Education.	Application Procedures will be published in Notice of Funding Availability in the Federal Register.	The Process will be published in Notice of Funding Availability in the Federal Register.	Deadline will be published in Notice of Funding Availability in the Federal Register.	HUD Office of University Partnerships http://www.oup.org/ (202) 708-3061.
USDA; Rural Utilities	Assistance to High Energy Cost Rural	Project Grants and Direct loans use to acquire construct,	Assistance to rural communities with extremely high energy	Political subdivisions of states, for-profit	Application Procedures will be published in Notice of	Grants Awarded on a Competitive Basis.	Deadline will be published in Notice of Funding Availability in the Federal Register.	DOA Electric Program http://www.usda.gov/rus/electric/regs/fedreg.htm

Table 4-4b:
Federal Technical Assistance and Funding
Economic Development

Agency	Program	Type of Assistance / Projects Funded	Purpose	Eligible Applicants	Where To Obtain Application	Application Process	Application Deadline	For More Information
Service	Communities	extend, upgrade and improve energy generation, transmission, or distribution facilities in rural communities where the average expenditure on home energy cost is at least 275% of the national average.	costs.	and non-profit businesses, cooperatives, association, organization, and other entities organized under the laws of States, Indian tribes, tribal entities, and individuals.	Funding Availability in the Federal Register.			(202) 720-9545.
USDA; Rural Business-Cooperative Service	Business and Industry Loans	Direct Loans and Guaranteed/Insured Loans. Direct Loans for modernization, development cost, purchasing and developing land, easements, tights-of-way, buildings, facilities, leases or materials, purchasing equipment, leasehold improvements, machinery and supplies, and pollution control and abatement equipment. Guaranteed Loans are for the same actions mentioned above plus for agricultural production, when not eligible for the Farm Service Agency farmer program assistance and when it is part of an integrated business also involved in the	To assist public, private and cooperative organizations, Indian Tribes or individuals in rural areas to obtain quality loans for the purpose of improving, developing or financing business, industry, and employment and improving the economic and environmental climate in rural communities including pollution abatement controls.	A cooperative, corporation, partnership, trust or other legal entity organized and operated on a profit or nonprofit basis, an Indian tribe, a municipality, county or other subdivision of state or individuals in rural areas.	Rural Development State Office.	Contact the Rural Development State Office or the State Coordinating Agency. http://www.rurdev.usda.gov/recd_map.html	Not Applicable.	Rural Development State Office. http://www.rurdev.usda.gov/recd_map.html

Table 4-4b:
Federal Technical Assistance and Funding
Economic Development

Agency	Program	Type of Assistance / Projects Funded	Purpose	Eligible Applicants	Where To Obtain Application	Application Process	Application Deadline	For More Information
		processing of agricultural products.						
USDA; Rural Utilities Service	Community Connect Grant Program	Project grants for the deployment of broadband transmission services to critical community facilities, rural residents and rural businesses and for the construction, acquisition, expansion, and/or operation of a community center which would provide such services free to residents for at least 2 years.	To encourage community oriented connectivity in rural areas where such service does not currently exist.	Indian Tribe or tribal organization, local units of government or other legal entity, including cooperatives or private corporations of limited liability companies organized on a for profit or nonprofit basis, and have the legal authority to own and operate the broadband facilities as proposed in its application, to enter into contracts and to comply with federal statutes and regulations.	Application in accordance with 7 Code of Federal regulations, Section 1739.	Grants Awarded on a Competitive Basis.	Deadline will be published in Notice of Funding Availability in the Federal Register.	DOA Telecommunications Program http://www.usda.gov/rus/telecom/index.htm (202) 720-9554.
USDA; Rural Housing Service	Community Facilities Loans and Grants	Guaranteed/Insured Loans, Direct Loans or Project Grants for community facilities such as child care facilities, food recovery and distribution centers, assisted living facilities, group homes, mental health clinics, shelters and education facilities. Projects comprise	To construct, enlarge, extend or otherwise improve community facilities providing essential service to rural residents.	City and County agencies, political and quasi-political subdivisions of the state, associations including corporations, Indian tribes and existing private corporations which are operated on a not-for-profit basis, have or will have the authority	Obtain SF-424 from the rural Development Area Office for a pre-application.	The pre-application is reviewed by the Rural Development area office and state office and the applicant is advised whether to file an application.	None.	Regional or local office. http://www.rurdev.usda.gov/rd/pubs/pa1557.htm

Table 4-4b:
Federal Technical Assistance and Funding
Economic Development

Agency	Program	Type of Assistance / Projects Funded	Purpose	Eligible Applicants	Where To Obtain Application	Application Process	Application Deadline	For More Information
		community, social, cultural, transportation, industrial park sites, fire and rescue services, access ways, and utility extensions. All facilities must be for public use.		necessary for constructing operating and maintaining the proposed facility or service and for obtaining, giving security for and repaying the loans, and are unable to finance the project fro its own resources or through commercial credit at a reasonable rate.				
USDA; Cooperative State Research, Education, and Extension Service	Community Food Projects	Project grants a comprehensive approach to develop long term solutions to help ensure food security in communities by linking the food sector to community development, economic opportunity, and environmental enhancement (50/50 program).	To support the development of community food projects designed to meet the food needs of low income people; increase the self-reliance of communities in providing their own needs; and promote comprehensive responses to local food, farm, and nutrition issues.	Private nonprofit entities.	Application Procedures will be published in Notice of Funding Availability in the Federal Register.	The Process will be published in Notice of Funding Availability in the Federal Register.	Deadline will be published in Proposal Solicitation in the Federal Register.	DOA Competitive Research Grants and Awards Management (202) 401-1761.
USDA	Livestock Assistance Program	Direct Payments.	To provide direct payments to eligible livestock producers who suffered grazing losses due to drought, hot weather, disease, insect infestation, fire, hurricane, flood, fire, earthquake, severe storm, or other	Citizens of, or legal resident alien in the United States; a farm cooperative, private domestic corporation, partnership, or joint operation in which a majority		Applicants visit the county or parish Farm Service Agency (FSA) office in the eligible county or parish to make application, certify eligibility and report percent of grazing loss, number of grazing acres, and number of eligible livestock by type and weight on Form CCC-740.	Sign-up for assistance under the 2000 LAP began January 18, 2000. Date for ending the sign-up will be determined at a later date.	Regional or Local Office: Consult the local phone directory for location of the nearest county FSA office. If no listing, contact the appropriate State FSA office listed in the Farm Service Agency section of Appendix IV of the Catalog or on the WEB at

Table 4-4b:
Federal Technical Assistance and Funding
Economic Development

Agency	Program	Type of Assistance / Projects Funded	Purpose	Eligible Applicants	Where To Obtain Application	Application Process	Application Deadline	For More Information
			disasters during the 2000 crop year. Benefits will be provided to eligible livestock producers only in those counties where a severe natural disaster occurred. A county must have been approved as a primary disaster area under a Secretarial disaster designation or Presidential disaster declaration after January 1, 2000, and subsequently approved for participation in the Livestock Assistance Program (LAP) by the Deputy Administrator for Farm Programs.	interest is held by the members, stockholders, or partners who are citizens of, or legal resident alien of the United States; Indian tribe or tribal organization of the Indian Self-Determination and Education Assistance Act; any organization under the Indian Reorganization Act or Financing Act; and economic enterprise under the Indian Financing Act of 1974.				http://www.fsa.usda.gov/edso/ Headquarters Office: Department of Agriculture, Farm Service Agency, Production, Emergencies, and Compliance Division, Emergency Preparedness and Program Branch, Stop 0517, 1400 Independence Avenue SW., Washington, DC 20250-0517. Telephone: (202) 720-7641. http://www.fsa.usda.gov
USDA; Rural Business-Cooperative Service	Renewable Energy Systems and Energy Efficient Improvements Program	To create a program to make direct loans, loan guarantees and grants to agricultural producers and rural businesses to help reduce energy costs and consumption.	To create a program to make direct loans, loan guarantees and grants to agricultural producers and rural businesses to help reduce energy costs and consumption and help meet the nation's critical energy needs.	Agricultural producer or rural small business.	Rural Energy Coordinator in the State.	Application must be submitted to the rural Energy Coordinator who will score it and submit to the National Office. The Highest scored application nationally will receive funding.	Continual sign-up process.	The Rural Business-Cooperative Service State Office.
USDA; Rural Business–Cooperative Service	Rural Business Enterprise Grants	Project Grants to create, expand or operate rural distance learning networks or programs for education, job training instruction related to potential employment, job	To facilitate the development of small emerging business, industry and related employment for improving the economy of rural areas.	Public bodies and nonprofit corporations serving rural areas.	From the Rural Business Cooperative Service or the State Coordinating Agency.	The pre-application is filed with the local office. After review it will be reviewed and processed by the State office.	None.	Regional or local office.

Table 4-4b:
Federal Technical Assistance and Funding
Economic Development

Agency	Program	Type of Assistance / Projects Funded	Purpose	Eligible Applicants	Where To Obtain Application	Application Process	Application Deadline	For More Information
		advancement; development, construction, acquisition, land, buildings, plants, equipment, access streets and roads, parking areas, utility extensions, water supply, waste water disposal facilities, refinancing, services and fees or to establish a revolving loan fund.						
USDA; Rural Business–Cooperative Service	Rural Business Opportunity Grants	Project grants to be used to assist in economic development of rural areas by providing technical assistance, training, and planning for business and economic development.	To promote sustainable economic development in rural communities with exceptional needs.	Public bodies, nonprofit corporations, Indian tribes and cooperatives with members that are primarily rural residents and that conduct activities for the mutual benefit of their members.	From the Rural Development State office or the State Coordinating Agency.	Applications will be scored and awards announce.	None.	Regional or local office.
USDA; Rural Business–Cooperative Service	Rural Cooperative Development Grants	Project Grants to facilitate the creation or retention of jobs in rural area through the development of new rural cooperative, value added processing and rural business.	To improve economic conditions in rural areas through cooperative development.	Nonprofit corporation and institutions of higher learning.	From the Rural Business Cooperative Service or the State Coordinating Agency.	The National Office reviews all applications, scores and ranks them.	Published in Federal Register.	Regional or local office.
USDA; Rural Business–Cooperative Service	Rural Economic Development Loans and Grants	Direct Loans and Project Grants for project feasibility studies, start-up costs, incubator projects and other reasonable costs for	For rural economic development and job creation projects.	Electric and telephone utilities that have current loans with the Rural Utilities Service or rural telephone Bank	Rural Development State Office.	See 7 Code of Federal Regulation, Section 1703.34.	None.	Regional or local office.

Table 4-4b:
Federal Technical Assistance and Funding
Economic Development

Agency	Program	Type of Assistance / Projects Funded	Purpose	Eligible Applicants	Where To Obtain Application	Application Process	Application Deadline	For More Information
		the purpose of fostering rural development.		loans or guarantees outstanding.				
USDA; Farm Service Agency	Tree Assistance Program	Direct payments with unrestricted use to tree, bush and vine owners who have trees, bushes and vines lost to a natural disaster, to replant or rehabilitate said vegetation and produce annual crops for commercial.	To assist producers whose trees, bushes or vines are damaged or destroyed in natural disasters.	Individual owners.	A form provided by FSA; a written estimate of the number or trees, bushes or vines lost or damaged which is prepared by the owner or someone who is a qualified expert, as determined by the county Committee; the number of acres on which the loss was suffered; and sufficient evidence of the loss o allow the County Committee to calculate whether an eligible loss occurred.	The County Committee makes recommendations and eligibility determinations on those determinations that it wants to recommend to a higher approval official.	To be announced.	Regional or local office.
USTREAS	Casualties, Disasters, and Theft	Tax relief.	The program offers tax relief for casualty losses that result from the destruction of, or damage to your property from any sudden, unexpected, or unusual event such as a flood, hurricane, tornado, fire, earthquake or even volcanic eruption.	A victim of a Presidentially declared disaster and you must be a taxpayer who is interested in receiving tax information and preparation assistance.	Contact IRS, http://www.irs.gov/taxtopics/tc515.html	Casualty losses are claimed on Form 4684 (PDF), *Casualties and Thefts*. Section A is used for personal–use property and Section B is used for business or income-producing property. If personal-use property was destroyed or stolen, you may wish to refer to Publication 584, *Casualty, Disaster, and Theft Loss Workbook*, to help you catalog your property. If the property was business or income-producing property, refer to Publication 584B (PDF), *Business Casualty, Disaster, and Theft Loss Workbook*.	Check website, http://www.irs.gov/pub/irs-pdf/p547.pdf	For additional information contact: Internal Revenue Service Tax forms and Publications W:CAR:MP:FP 1111 Constitution Ave NW Washington, DC 20224. http://www.irs.gov/taxtopics /tc515.html

Table 4-4c:
Federal Technical Assistance and Funding
Emergency Management

Agency	Program	Type of Assistance / Projects Funded	Purpose	Eligible Applicants	Where To Obtain Application	Application Process	Application Deadline	For More Information
DHS	Community Disaster Loans	Loan.	To provide loans subject to Congressional loan authority, to any local government that has suffered substantial loss of tax and other revenue in an area in which the President designates a major disaster exists. The funds can only be used to maintain existing functions of a municipal operating character and the local government must demonstrate a need for financial assistance	Applicants must be in a designated major disaster area and must demonstrate that they meet the specific conditions of FEMA Disaster Assistance Regulations 44 CFR Part 206, Subpart K, Community Disaster Loans.		Upon declaration of a major disaster, application for a Community Disaster Loan is made through the Governor's Authorized Representative to the Regional Director of FEMA. The Associate Director of the Response and Recovery Directorate approves or disapproves the loan. The Designated Loan Officer will execute a Promissory Note with the applicant. The promissory note must be co-signed by the State, or if the State cannot legally co-sign the note, the local government must pledge collateral security.	The loan must be approved in the fiscal year of the disaster or the fiscal year immediately following.	Regional or Local Office. http://www.dhs.gov
DHS	Disaster Legal Services	Legal assistance.	To provide legal assistance to individuals affected by a major Federal disaster.	Low-income individuals, families, and groups.	An applicant should consult the office or official designated as the single point of contact in his or her State for more information on the process the State requires to be followed in applying for assistance, if the State has selected the	Upon declaration of an emergency or major disaster, individuals and households may register an application for assistance with FEMA via a toll-free number or by visiting a Disaster Recovery Center.	Not applicable.	Regional or Local Office. http://www.dhs.gov

Table 4-4c:
Federal Technical Assistance and Funding
Emergency Management

Agency	Program	Type of Assistance / Projects Funded	Purpose	Eligible Applicants	Where To Obtain Application	Application Process	Application Deadline	For More Information
					program for review.			
DHS	Disaster Unemployment Assistance	Direct Payments for Specified Use; Provision of Specialized Services.	To provide special federally funded weekly benefits to workers and self-employed individuals who are unemployed as a direct result of a Presidentially-declared major disaster, and who are not eligible for regular Unemployment Insurance benefits paid by States.	Disaster victims who have experienced direct loss of employment as a result of a Presidentially-declared major disaster designated for DUA.	From the local State Workforce Agency (SWA).	Upon declaration of a major disaster declaration designated for DUA, individuals may apply with their local State Workforce Agency (SWA).	Generally, applications for DUA must be filed within 30 days after the date of the SWA announcement regarding availability of DUA. When applicants have good cause, they may file claims after the 30-day deadline. However, no initial application will be considered if filed after the 26th week following the declaration date.	Regional or Local Office.
DOC; NOAA; Marine Fisheries Service	Fisheries Disaster relief	Cooperative Grants (75/25)	Assessment of the effects of Commercial Fishery failures, restoring fisheries, preventing future failures and assisting fishing communities affected by failures.	Fishing Communities.	National Marine Fisheries Service (NMFS).	Submit completed forms to NMFS through Grants.GOV	120 days before start of project.	National Marine Fisheries Service. http://www.nmfs.noaa.gov/
DOD	Emergency Rehabilitation of Flood Control Works or Federally Authorized Coastal Protection Works	Repair of Flood Control or Coastal Protection Works.	To assist in the repair and restoration of flood control works damaged by flood, or federally authorized hurricane flood and shore protection works damaged by extraordinary wind, wave, or water action.	Owners of damaged flood protective works, or State and local officials of public entities responsible for their maintenance, repair, and operation must meet current guidelines to become eligible for Public Law 84-99 assistance.	District Engineer or Corps of Engineers	Written application by letter or by form request if such form is locally used by the District Engineer of the Corps of Engineers.	Thirty days after a flood or unusual coastal storm.	Regional or Local Office: U.S. Army Corps of Engineers Division or District Engineers. Headquarters Office: Commander, U.S. Army Corps of Engineers, Attn: CECW-OE, Washington, DC 20314. Telephone: (202) 272-0251. FTS is not available. http://www.usace.army.mil/business.html
SBA	Economic Injury Disaster Loans	Loans to businesses suffering economic injury from Presidential, SBA, or Agricultural Disaster.	To provide working capital to small business, small agricultural cooperatives or nurseries who have actual economic injury.	Business owners who have suffered economic injury.	SBA Disaster Office.	File with nearest SBA Disaster Office.	Deadline established after each declaration.	SBA Disaster Office.

Table 4-4c:
Federal Technical Assistance and Funding
Emergency Management

Agency	Program	Type of Assistance / Projects Funded	Purpose	Eligible Applicants	Where To Obtain Application	Application Process	Application Deadline	For More Information
SBA	Physical Disaster Loans	Loans to victims of declared disasters for uninsured or otherwise uncompensated physical damage.	To repair or replace damaged or destroyed real and/or personal property to its pre-damage condition. The loan limit may increase by 20% to provide protective measures.	Loans to homeowners, renters, business and non-profit organizations who have suffered physical loss do to a Presidential or SBA declared disaster.	SBA Disaster Office.	File with nearest SBA Disaster Office.	60 days from disaster declaration unless extended by SBA.	SBA Disaster Office.
USDA	Direct Housing, Natural Disaster Grants and Loans	Repair or replace damaged Property.	To meet emergency assistance needs not provided by FEMA Programs.	Very-Low income owner-occupants of rural housing in declared disaster areas. Must be 62 years or older.	Rural Development Field Office of the applicants County.	Complete Form 410-4 and return to field office.	From Date of Declaration until appropriated funds are exhausted.	U.S.D.A. Rural Development Field Office.
USDA	Disaster Reserve Assistance	Direct Payments for Specified Use.	To provide emergency assistance to eligible livestock owners, in a State, county, or area approved by the Secretary or designee, where because of disease, insect infestation, flood, drought, fire, hurricane, earthquake, hail storm, hot weather, cold weather, freeze, snow, ice, and winterkill, or other natural disaster, a livestock emergency has been determined to exist.	An established producer or husbandry of livestock or a dairy producer. a farm cooperative, private domestic corporation, partnership, or joint operation in which a majority interest is held by the members, stockholders, or partners who are citizens of, or legal resident aliens of the United States. Any Indian tribe or tribal organization of the Indian Self-Determination and Education Assistance Act. Any organization under the Indian Reorganization Act or Financing Act.	Visit the county FSA office in the eligible county.	Applicants visit the county FSA office in the eligible county to make application, certify eligibility and report feed loss, feed available, and eligible livestock related to the disaster occurrence; and (2) applicants also receive authority to participate in the program as provided by the approving official.	Feeding periods for the disaster reserve assistance program begin (a) the first day of the 1996 crop year in counties approved for 1995 or 1996 livestock feed programs; (b) the date the producer filed an application, if the natural disaster began after the beginning of the 1996 crop year; the date of the occurrence for sudden natural disasters that occurred after the beginning of the 1996 crop year.	Regional or Local Office http://www.fsa.usda.gov
USDA	Emergency Loans	Direct Loans.	To assist established (owner or tenant) family farmers, ranchers and aquaculture operators with loans to cover losses resulting from major and/or natural	Be an established family farmer, rancher, or aquaculture operator (either tenant-operator or owner-operator), who was conducting a farming operation at the time of occurrence of the	Consult the appropriate FSA State office.	Application Form FSA 410-1 provided by the Farm Service Agency must be presented, with supporting information, to the FSA county office serving the applicant's county. FSA personnel	Deadline for filing applications for actual loss loans is 8 months from the date of declaration/designation for both physical and production losses. Applicants should consult the FSA county office serving their area for	Regional or Local Office http://www.fsa.usda.gov

Table 4-4c:
Federal Technical Assistance and Funding
Emergency Management

Agency	Program	Type of Assistance / Projects Funded	Purpose	Eligible Applicants	Where To Obtain Application	Application Process	Application Deadline	For More Information
			disasters, which can be used for annual farm operating expenses, and for other essential needs necessary to return disaster victims' farming operations to a financially sound basis in order that they will be able to return to private sources of credit as soon as possible.	disaster either as an individual proprietorship, a partnership, a cooperative, a corporation, or a joint operation. Have suffered qualifying crop loss and/or physical property damage caused by a designated natural disaster. Be a citizen of the United States or legal resident alien, or be operated by citizens and/or resident aliens owning over a 50 percent interest of the farming entity. Have sufficient training or farming experience in managing and operating a farm or ranch. Be a capable manager of the farming, ranching, or aquaculture operations.		assist applicants in completing their application forms. This program is excluded from coverage under OMB Circular No. A-110.	application deadlines.	

Table 4-4d:
Federal Technical Assistance and Funding
Historic Preservation

Agency	Program	Type of Assistance / Projects Funded	Purpose	Eligible Applicants	Where To Obtain Application	Application Process	Application Deadline	For More Information
DOI; National Park Service	Civil War Battlefield Land Acquisition Grants	Grants for Fee simple acquisition of land, or for the acquisition of permanent protective interests in land at Civil War Battlefields.	To preserve threatened civil war battlefields.	Local governments or private non-profit organization in partnership with local governments.	SF 424 and attached documents including hard copies of proposals. See application requirements for list of attachments.	File forms with National Park Service Office.	Ongoing.	National Park Service. http://www.nps.gov/
DOI; National Park Service	National Maritime Heritage Grants	Education activities and preservation activities or projects, such as: 1) activities associated with acquiring ownership of, or responsibility for, historic maritime properties for preservation purposes; 2) preservation planning; 3) documentation of historic maritime properties; 4) protection and stabilization of historic maritime properties; 5) preservation restoration, or rehabilitation of historic maritime properties; 6) maintenance of historic maritime properties; and 7) reconstruction or reproduction of well-documented historic maritime properties.	To preserve historic maritime resources and increase public awareness and appreciation.	Local governments and private non-profit organizations.	National Maritime Initiative.	State Historical Preservation Office or National Maritime Initiative.	Contact State Historical Preservation Office or National Maritime Initiative.	National Park Service Office, National Maritime Initiative. http://www.cr.nps.gov/Maritime/
DOI; National Park Service	Technical Preservation Service	Advisory services and counseling, dissemination of technical information, provision of specialized services.	To assist local governments and owners of certified historical structures to preserve and maintain properties.	Local governments and individuals.	Historic Preservation Certification Application through Appropriate State Official or NPS Office.	File through State Official or NPS Office.	None.	National Park Service Office. http://www.nps.gov/

Table 4-4e:
Federal Technical Assistance and Funding
Housing

Agency	Program	Type of Assistance / Projects Funded	Purpose	Eligible Applicants	Where To Obtain Application	Application Process	Application Deadline	For More Information
DHS	Disaster Housing Assistance To Individuals And Households In Presidential Declared Disaster Zones	Direct Payments for Specified Use.	To provide assistance to affected individuals and households within Presidential-declared disaster zones to enable them to address disaster-related housing and other necessary expenses and serious needs, which cannot be met through other forms of disaster assistance, insurance, or through other means.	Individuals and households, in areas declared an emergency or major disaster by the President, whose primary residence has been damaged or destroyed and whose losses are not covered by insurance are eligible to apply for this program. Must be a citizen of the United States, a non-citizen national, or a qualified alien.	An applicant should consult the office or official designated as the single point of contact in his or her State for more information on the process the State requires to be followed in applying for assistance, if the State has selected the program for review.	A Presidential Disaster or Emergency Declaration must be issued, before individuals and households can register an application for assistance with FEMA via a toll-free number or by visiting a Disaster Recovery Center.	Generally, individual and household applications for disaster assistance must be filed within 60 days of the disaster declaration.	Regional or Local Office.
DHS	Disaster Housing Program	Grant.	The Disaster Housing Program provides housing assistance in the form of a grant to individuals whose homes sustained damage as a result of a Presidentially declared disaster. To qualify for assistance, the damaged home must be your primary residence, and be	Applicant must be a national, citizen or dual citizen of the US whose home was destroyed or damaged by a Presidentially declared major disaster.	Contact FEMA.	Individuals can apply for assistance by calling 1-800-621-FEMA. Insured homeowners should first file a claim with their home insurer before contacting FEMA. An inspection is performed and a determination is made on	Contact FEMA.	Additional general information can be found at: http://www.fema.gov/tabs_disaster.shtm

Table 4-4e:
Federal Technical Assistance and Funding
Housing

Agency	Program	Type of Assistance / Projects Funded	Purpose	Eligible Applicants	Where To Obtain Application	Application Process	Application Deadline	For More Information
			located in the disaster-declared area. If insured, a claim should be filed. This program provides grants for lodging expense reimbursement, minimal home repairs and rental assistance. A determination of the types of housing assistance you are eligible to receive will be made if you apply.			your eligibility for one of the following types of assistance: Lodging expense reimbursement, minimal home repairs, rental assistance and Mortgage and Rental Assistance.		
DHS	Federal Assistance To Individuals And Households-Disaster Housing Operations	Direct Payments for Specified Use.	To address disaster-related housing needs of individuals and households suffering hardship who are within an area declared as a disaster zone, by the President.	Individuals and households, in areas declared an emergency or major disaster by the President, whose primary residence has been damaged or destroyed and whose losses are not covered by insurance are eligible to apply for this program. The individual or a member of the household must be a citizen of the	An applicant should consult the office or official designated as the single point of contact in his or her State for more information on the process the State requires to be followed in applying for assistance, if the State has selected the program for review.	Upon declaration of an emergency or major disaster, individuals and households may register an application for assistance with FEMA via a toll-free number or by visiting a Disaster Recovery Center.	Generally, individual and household applications for disaster assistance must be filed within 60 days of the disaster declaration.	Regional or Local Office.

Table 4-4e:
Federal Technical Assistance and Funding
Housing

Agency	Program	Type of Assistance / Projects Funded	Purpose	Eligible Applicants	Where To Obtain Application	Application Process	Application Deadline	For More Information
				United States, a non-citizen national, or a qualified alien.				
DOI, Bureau of Indian Affairs	Indian Housing Assistance	Construction of housing, technical assistance to establish housing plans and determine extent and use of the Bureau's housing Improvement Program.	To eliminate substantially substandard Indian owned to inhabited housing for very low income individuals living in tribal service areas.	Individual members of Federally recognized tribes or tribal governments or organizations.	An informal conference should be scheduled with Bureau of Indian Affairs. Applications for Tribes or Tribal organizations should be submitted to Bureau of Indian affairs local office. Individuals may submit applications to the Bureau or to the tribal Servicing Housing Office.	Process is determined through annual Tribal work plan.	For Tribes or Tribal Organizations there is no deadline. For individuals the deadline is set at the local office.	Regional or Local Office of the Bureau of Indian Affairs.
HUD	Community Development Block Grant (CDBG)	Grant.	To develop viable urban communities by providing decent housing and a suitable living environment. Principally for low-to moderate-income individuals.	Eligible CDBG grant recipients include States, units of general local government (city, county, town, township, parish, village or other general purpose political subdivision determined to be eligible for assistance by the Secretary), the District of Columbia, Puerto Rico, Guam, the Virgin Islands, American Samoa, the Commonwealth of the Northern Marianas, and	http://www.hud.gov/offices/cpd/about/cpd_programs.cfm	Community Development activities that meet long-term needs. These activities can include acquisition, rehabilitation, reconstruction of properties and facilities damaged by a disaster, and redevelopment of disaster affected areas.	Consolidated Plans may be submitted between November 15 and August 16 of each fiscal year in which the State will administer funds.	State and Small Cities Division, Office of Block Grant Assistance, CPD, HUD, 451 7th Street, S.W., Washington, DC 20410-7000. Telephone: 202.708.3587. http://www.hud.gov/bdfy2000/summary/cpd/cdbg.html

Table 4-4e:
Federal Technical Assistance and Funding
Housing

Agency	Program	Type of Assistance / Projects Funded	Purpose	Eligible Applicants	Where To Obtain Application	Application Process	Application Deadline	For More Information
				recognized Native American tribes and Alaskan Native villages.				
HUD	Demolition and Revitalization of Severely Distressed Public Housing (HOPE VI)	Demolition of all or parts of severely distressed public housing projects, relocation cost of affected resident, disposition activities, rehabbing of units or community facilities, development of new units or community facilities, homeownership activities, acquisition activities, management improvements and administrative cost, community and supportive services.	To fund revitalization of severely distressed public housing developments.	Public housing authorities and Indian Housing Authorities, plus local governments for HOPE VI Main Street Grants.	Submission requirements and application are listed in Notice of Federal Assistance in the Federal Register.	HUD HQ reviews the application and rates them. Highest rated applications are funded.	As indicated in the Federal Register Notice.	HUD local or regional 0ffice.
HUD	Mortgage insurance-Homes for Disaster Victims	Guaranteed / Insured Loans.	To insure lenders against losses on mortgage loans used to finance purchase or reconstruction of one-family home that will be the principal residence of a borrower that is a victim of a disaster.	Individuals and Families that are victims of a disaster designated by the President.	Mortgagee submits Application to HUD Field Office.	Mortgagee submits Application to HUD Field Office.	None.	HUD local or regional 0ffice.

Table 4-4e:
Federal Technical Assistance and Funding
Housing

Agency	Program	Type of Assistance / Projects Funded	Purpose	Eligible Applicants	Where To Obtain Application	Application Process	Application Deadline	For More Information
HUD	Rehabilitation Mortgage Insurance	Guaranteed / Insured Loans.	To insure lenders against losses on mortgage loans for 1 to 4 unit structures used to finance the purchase of a structure and land and rehabilitate the structure; the purchase, relocation and rehabilitation of a structure from another site; refinance existing debt and rehabilitating a structure; finance the rehabilitating of a structure.	Individual purchasers.	A HUD Approved Lending Institution	Review by Lending Institution.	None.	HUD local or regional 0ffice.
HUD	Rural housing and Economic Development	Grants for Capacity Building, Support of Innovative Housing and Economic Development Activities.	To build capacity for rural housing and economic development activities in rural areas.	Local Rural Non-Profit Organizations, Community Development Corporations, Indian Tribes, State agencies.	Submission requirements and application are listed in Notice of Federal Assistance in the Federal Register	As indicated in the Federal Register Notice.	As indicated in the Federal Register Notice.	HUD local or regional 0ffice.
HUD	Self-Help Homeownership Opportunity Program (SHOP)	Land Acquisition and Infrastructure Improvements	To facilitate and encourage innovative homeownership opportunities were homeowner are low-income and contribute a significant	National or regional non-Profit Organizations or Consortia.	Submission requirements and application are listed in SHOP Notice of Federal Assistance in the Federal Register.	As indicated in the Federal Register Notice.	As indicated in the Federal Register Notice.	HUD local or regional 0ffice.

Table 4-4e:
Federal Technical Assistance and Funding
Housing

Agency	Program	Type of Assistance / Projects Funded	Purpose	Eligible Applicants	Where To Obtain Application	Application Process	Application Deadline	For More Information
			amount of sweat equity.					
HUD	Supplemental Loan Insurance-Multifamily Rental Housing	Financing of repairs, additions and improvements to multifamily projects, group practice facilities, hospitals and nursing homes already insured by HUD.	To insure lenders against losses on loans to finance additions and improvements to eligible properties.	Owners of Multifamily projects or facilities subject to mortgage insured by HUD or individual s/families and owners of multifamily projects.	HUD Multifamily HUB and Program Center.	Pre-application conference and then submittal of formal application through HUD approved mortgage.	Case-by-case basis.	HUD local or regional 0ffice.
USDA	Direct Housing-Natural Disaster	Direct loans.	To assist qualified lower income rural families to meet emergency assistance needs resulting from natural disaster to buy, build, rehabilitate, or improve dwellings in rural areas. Funds are only available to the extent that funds are not provided by the Federal Emergency Management Agency (FEMA). For the purpose of administering these funds, natural disaster	Applicants must be without adequate resources to obtain housing or related facilities. Applicants must be unable to secure the necessary credit from other sources at prevailing terms and conditions for residential financing.	Rural Development Field office.	Applicants must file Form RD 410-4 at the Rural Development field office serving the county where the dwelling is located. This program is excluded from coverage under OMB Circular No. A-110.	Applicants must file applications from the date of declaration/designation and until supplemental appropriated funds are exhausted.	Regional or Local Office. Consult your local telephone directory under United States Department of Agriculture for Rural Development field office number. If no listing, contact appropriate Rural Development State Office at: http://www.rurdev.usda.gov/recd_map.html.

Table 4-4e:
Federal Technical Assistance and Funding
Housing

Agency	Program	Type of Assistance / Projects Funded	Purpose	Eligible Applicants	Where To Obtain Application	Application Process	Application Deadline	For More Information
			will only include those areas identified by a Presidential declaration.					
USDA; Rural Housing Service	Farm Labor Housing Loans and Grants	Project grants and Guaranteed/insured Loans for the construction, repair or purchase of year-around or seasonal housing; acquiring land and making improvements for housing; developing related support facilities.	To provide decent, safe and sanitary low-rent housing and related facilities for domestic farm laborers.	Farmers, farm family partnerships, family farm corporations, or an association of farmers.	Applicant must furnish the following information: the number of farm laborers currently being used in the area; the kind of labor performed; the future need for labor; the kind, condition, and adequacy of current housing; the ownership of current housing; the ability of workers to pay rent; and information that it is unable to provide housing from its own resources or terms and conditions that would enable it to provide labor housing.	Applications will be scored and reviewed by State and National Offices.	None.	Regional or Local Office of Rural housing Service. http://www.rurdev.usda.gov/rhs/
USDA; Rural Housing Service	Rural Housing Preservation Grants	Loans, grants or other assistance to individual homeowners, rental properties or coops to pay any part of the cost for repair and rehabilitation of structures.	To assist very low- and low-income residents individual homeowners, rental property owners (single/multi-unit and consumer cooperative housing projects to complete necessary repairs and rehabilitation of dwellings.	Political subdivision of state, public non-profit corporation, or Indian tribal Corporations authorized to receive and administer housing preservation grants, private nonprofit corporations, or consortia.	Contact your regional or local office.	Consult with Rural Development Office prior to application and submit pre-application. An Environmental Impact Assessment is required.	See Federal Register of Notice of Funds Availability.	Regional or Local Office of Rural housing Service. http://www.rurdev.usda.gov/rhs/
USDA; Rural Housing Service	Section 538 Rural rental Housing Guaranteed Loans	Guaranteed/Insured Loans to supply affordable multi-family housing in rural areas.	To encourage private and public lenders to make loans for affordable rental	Lenders.	Lender provides documentation required by RHS.	RHS will review applications for compliance and issue conditional Commitment of guarantee with	See Federal Register of Notice of Funds Availability.	Regional or Local Office of Rural housing Service. http://www.rurdev.usda.gov/rhs/

Table 4-4e:
Federal Technical Assistance and Funding
Housing

Agency	Program	Type of Assistance / Projects Funded	Purpose	Eligible Applicants	Where To Obtain Application	Application Process	Application Deadline	For More Information
			properties.			conditions. Once Conditions are met the final Contract of guarantee will be issued.		
USDA; Rural Housing Service	Very Low-Income housing Repair Loans and Grants	Direct Loans and Project Grants to Very-Low Income Homeowners in rural areas to repair, improve or modernize their dwellings or to remove health and safety hazards.	To make essential repairs to homes to make them safe and remove health hazards.	Applicant must own and occupy the home in a rural area, have sufficient income to repay a loan, be 62 years of age or older and be unable to repay a loan for that part of the assistance that comes as a grant.	Rural Development State or District Office.	The Loan must be submitted to RHS field office serving county where structure is located.	None.	Regional or Local Office of Rural housing Service. http://www.rurdev.usda.gov/rhs/
USDA; Rural Housing Service	Very Low to Moderate Income Housing Loans	Direct and Guaranteed Loans to buy, build, or improve applicant's permanent residence. New manufactured loans on a permanent site may also be approved.	To assist very low, low-income, and moderate households to obtain modest, decent, safe, and sanitary housing for use as a permanent residence in a rural area.	Very low, low-income, and moderate households.	For Direct Loans the application is made to the local Rural Development Office. For Guaranteed Loans application is made to the lender.	For Direct Loans the Rural Development Office makes a decision within 30 – 60 days. For Guaranteed Loans the decision is made within 3 days.	None.	Regional or Local Office of Rural housing Service. http://www.rurdev.usda.gov/rhs/

Table 4-4f:
Federal Technical Assistance and Funding
Infrastructure

Agency	Program	Type of Assistance / Projects Funded	Purpose	Eligible Applicants	Where To Obtain Application	Application Process	Application Deadline	For More Information
DHS	National Dam Safety Program	State grants distributed directly to State dam safety programs.	To reduce the risks to life and property from dam failure in the United States through the establishment and maintenance of an effective national dam safety program to bring together the expertise and resources of the Federal and non-Federal communities in achieving national dam safety hazard reduction.	For a State to be eligible for primary assistance under the National Dam Safety Program, the State dam safety program must be working toward meeting the following criteria: The authority to review and approve plans and specifications to construct, enlarge, modify, remove, and abandon dams; the authority to perform periodic inspections during dam construction to ensure compliance with approved plans and specifications. All inspections be performed under the supervision of a State-registered professional engineer with experience in dam design and construction.	www.fema.gov/fima/damsafe	States wishing to participate in the National Dam Safety Program must submit a proposal with their application package including a program narrative statement, goals and objectives, performance measures, travel budget and related activities.	Applications should be submitted to FEMA by November 30 of each fiscal year.	*Headquarters Office*: Director, National Dam Safety Program, Mitigation Directorate, FEMA, DHS, 500 C Street SW., Washington, DC 20472; Telephone: (202) 646-3885. Additional information is available on the National Dam Safety Program web site, www.fema.gov/fima/damsafe
DOC; EDA	Grants for Public Works and Economic Development Facilities	Project grants for water and sewer improvements, industrial access roads, industrial and business parks, port facilities, railroad sidings, distance learning facilities, skill-training facilities, redevelopment of brown fields, eco-industrial facilities,	To promote long-term economic development in areas experiencing substantial economic stress.	Cities, counties, institutions of higher education or a consortium of institutions of higher education, other political subdivision, Indian Tribes, Economic Development Districts and non-profit organizations.	The Economic Development Representative servicing the state or EDA.	Meet with EDR. If deemed appropriate the applicant will be invited to apply.	30 days after invitation.	Regional or Local Office. http://www.eda.gov/Contacts/Contacts.xml

Table 4-4f:
Federal Technical Assistance and Funding
Infrastructure

Agency	Program	Type of Assistance / Projects Funded	Purpose	Eligible Applicants	Where To Obtain Application	Application Process	Application Deadline	For More Information
		business incubator facilities, and telecommunication infrastructure improvement needed for business retention and expansion.						
DOC; National Telecommunication and Information Administration	Public Telecommunications Facilities Planning and Construction	Grants for planning and construction of public telecommunications facilities.	To assist in the planning, acquisition, installation, and modernization of public telecommunications facilities through planning grants and matching construction grants.	Public or noncommercial educational broadcast station, noncommercial telecommunication entity, non-profit foundation, corporation, institution or association organized primarily for educational or cultural purposes, local government, tribal government or an agency thereof, or a political or special purpose subdivision of the state.	Request from agency or go to the web at: www.ntia.doc.gov/ptfp.	File application form, project narrative, project budget forms, relevant exhibits, CD-511, CD 346, SF 424B, and SF LLL. Contact State telecommunications agency where applicable.	See annual notification in the Federal Register.	Regional or Local Office. http://www.ntia.doc.gov/
DOD; USACE	Flood Control Works / Emergency Rehabilitation	Provision of Specialized Services.	To assist in the repair and restoration of public works damaged by flood, extraordinary wind, wave, or water action.	Owners of damaged flood protective works, or State and local officials of public entities responsible for their maintenance, repair, and operation.	Regional or Local Office: U.S. Army Corps of Engineers Division or District Engineers.	The Corps provides public works and engineering support to supplement State and local efforts toward the effective and immediate response to a natural disaster.	Thirty days after a flood or unusual coastal storm.	Program Manager PL 84-99 USACE, 20 Massachusetts Ave, N.W. Washington, DC 20314 Telephone: 202.761.0001. http://www.spd.usace.army.mil/hqpam.html
DOD; USACE	Protection of Essential Highways, Highway Bridge Approaches and Public Works	Protection of highways, highway bridges, essential public works, churches, hospitals, schools and other non-profit public services.	To provide bank protection for locations endangered by flood-caused erosion.	Political subdivision of states and other responsible local agencies established under state law with full authority and ability to undertake legal and financial responsibilities.	Formal letter to District Engineer.	Consult with District Engineer.	None.	Regional or Local Office. http://www.usace.army.mil/business.html
DOI; Bureau of	Water Desalination	Demonstration and	To develop cost-	Local entities,	A proposal solicitation is	There will be a	Varies,	Bureau of Reclamation

Table 4-4f:
Federal Technical Assistance and Funding
Infrastructure

Agency	Program	Type of Assistance / Projects Funded	Purpose	Eligible Applicants	Where To Obtain Application	Application Process	Application Deadline	For More Information
Reclamation	Research and Development Program	development projects and related activities.	effective, technically efficient and implementable methods by which water can be produced.	public/nonprofit institutions/organizations, other public institutions/organizations.	announced by the Bureau of Reclamation.	general solicitation d one for pilot plants or demonstration projects, SF 424 and DI-2010 forms are required.	contact Bureau of Reclamation.	http://www.usbr.gov/ (303) 445-2432.
FHWA; FAA	Airport Improvement Program	Project Grants and advisory services and counseling.	Integrated airport system planning and airport master planning, construction and rehabilitation at public-use airports.	Counties, municipalities, other public agencies, Indian tribes, private owners of public-use reliever airports or airports having at least 2,500 passengers boarding annually and receiving scheduled passenger aircraft.	Contact the States single-point contact for aviation.	Pre-application is filed with the FAA office and reviewed regionally and/or in Washington D.C.	January 31 or another date specified in the Federal Register.	Regional or Local Office. http://www.faa.gov/about/office_org/
FHWA; FTA	Federal transit Capital Investment Grants	Formula Grants and Project Grants.	To assist in financing the acquisition, construction, reconstruction and improvement of facilities, rolling stock and equipment for use in public transportation service.	Municipalities and other subdivisions of the state, public agencies and instrumentalities of one or more states, public corporations. Boards and commissions.	Federal Transportation Authority or State single point of contact.	Applicant should contact the State single point of contact.	Contact FTA.	Regional or local office. http://www.fta.dot.gov/4_ENG_HTML.htm
FHWA; FTA	Transit Planning and Research	Project Grants, Technical Information, and Training.	Increase public ridership, improve safety and emergency preparedness, improve capital operating efficiencies, protect the environment and promote energy independence.	Public bodies, non-profit institutions, local agencies, universities and legally constituted public agencies and operators of public transportation services, and non-profit organizations.	Federal Transportation Authority.	Pre-Application Coordination.	None.	Associate Administrator for Research, Demonstration and Innovation, FTA (202) 366-4209. http://www.fta.dot.gov/4_ENG_HTML.htm

Table 4-4f:
Federal Technical Assistance and Funding
Infrastructure

Agency	Program	Type of Assistance / Projects Funded	Purpose	Eligible Applicants	Where To Obtain Application	Application Process	Application Deadline	For More Information
FHWA	Transportation: Emergency Relief Program	Special funding and technical assistance to States and Federal agencies.	To provide aid for repair of Federal-aid roads.	State highway/transportation agency or Federal agency.	www.fhwa.dot.gov	It is the responsibility of individual States to request ER funds for assistance in the cost of necessary repair of Federal-aid highways damaged by natural disasters or catastrophic failures. A notice of intent to request ER funds filed by the State Department of Transportation with the FHWA Division Office located in the State will initiate the ER application process.	Contact FHWA.	Director, Office of Engineering, FHWA, DOT, 400 7th Street, S.W., Washington, DC 20590. Telephone: 202.366.4655. http://www.fhwa.dot.gov/programadmin/erelief.html
USDA; Rural Utilities Service	Water and Waste Disposal Systems for Rural Communities	Project Grant, Direct Loans, guaranteed/Insured Loans for the installation, repair, improvement or expansion of rural water facilities including distribution lines, well pumping facilities and cost related thereto, and the installation, repair, improvement, or expansion or rural waste disposal facilities including the collection, and treatment of sanitary, storm and solid wastes.	To provide basic human amenities, alleviate health hazards and promote orderly growth of rural area.	Municipalities, counties and other political subdivisions of a states, such as authorities, associations, cooperatives, corporations operated on a not for profit basis, and federally recognized tribes. Serving rural businesses and rural residents.	Local USDA Rural Development Office.	Application is reviewed at the local level and forwarded to Rural Development State Director for review.	None.	Regional or local office. http://www.rurdev.usda.gov/recd_map.html
USDA; Rural	Water and Waste	Project Grants,	Provide water and	Local levels of	Local USDA Rural	Application is	None.	Regional or local office.

Table 4-4f:
Federal Technical Assistance and Funding
Infrastructure

Agency	Program	Type of Assistance / Projects Funded	Purpose	Eligible Applicants	Where To Obtain Application	Application Process	Application Deadline	For More Information
Utilities Service	Disposal Loans and Grants (Section 306C)	Direct Loans to construct enlarge, extend or otherwise improve community water or waste systems; extend lines; and connect individual residences to the system.	waste disposal facilities and services to low income rural communities whose residents face significant health risks.	government, federally recognized tribes and non-profit associations. Per capita income may not exceed 70% of national average, unemployment rate is not less than 125% of national average, and residents must face significant health risks due to not having access to an affordable community water and/or waste disposal system.	Development Office.	reviewed at the Rural Development State office and must compete on a national basis for review.		http://www.rurdev.usda.gov/recd_map.html

Table 4-4g:
Federal Technical Assistance and Funding
Mitigation

Agency	Program	Type of Assistance / Projects Funded	Purpose	Eligible Applicants	Where To Obtain Application	Application Process	Application Deadline	For More Information
DHS	Emergency Management Performance Grants (EMPG)	Formula Grants.	To encourage the development of comprehensive emergency management, including for terrorism consequence management, at the State and local level and to improve emergency management planning, preparedness, mitigation, response, and recovery capabilities.	Funding provided to States, which can be used to educate people and protect lives and structures from natural and technological hazards.	An applicant should consult the office or official designated as the single point of contact in his or her State for more information on the process the State requires to be followed in applying for assistance, if the State has selected the program for review. Technical assistance is available for application preparation from the FEMA Regional Offices.	Applications must be submitted online using the OJP GMS and must contain information and meet the requirements outlined in the program guidelines and application kit.	Applications will be made available on December 2, 2004, and must be received by ODP no later than January 16, 2005.	Office of Financial Management, FEMA, 500 C Street, S.W., Washington, DC 20472 Telephone: 202.646.7057. http://www.fema.gov
DHS	Flood Mitigation Assistance Program	Grants to States.	To help States and communities plan and carry out activities designed to reduce the risk of flood damage to structures covered under contracts for flood insurance.	The State or community must first develop (and have approved by FEMA) a flood mitigation plan that describes the activities to be carried out with assistance provided under this program. The plan must be consistent with a comprehensive strategy for mitigation activities, and be adopted by the State or community following a public hearing.	Applications can be obtained from the State Hazard Mitigation Officer. Eligible projects include acquisition, elevation, or relocation of National Flood Insurance Program (NFIP)-insured structures, especially those that have been repetitively flooded or substantially damaged.	The State Hazard Mitigation Officer applied to the Federal Emergency Management Agency for annual funds.	Annual.	Risk Reduction Branch, Mitigation Division, FEMA, DHS 500 C Street SW., Washington, DC 20472; Telephone: (202) 646-2856. Additional information is available on FEMA's web site, www.fema.gov/fima/planfma.shtm
DHS	Hazard Mitigation Grant Program	Grants.	To prevent future losses of lives and property due to disasters; to implement State or local hazard	State and local governments; certain private and nonprofit organizations or institutions; Indian tribes or authorized	For more information on where to obtain application go to website, http://www.fema.gov/fima/hmgp/hmgp_ref.shtm	Eligible applicants apply for the program through the State, as the State administers the program.	The State will submit all selected local applications or summaries to the Regional Director	Branch Chief, Risk Reduction Branch, Mitigation Division, FEMA, DHS, 500 C Street SW., Washington, DC 20472; Telephone: (202) 646–2856. Additional information is available on FEMA's web site, www.fema.gov

Table 4-4g:
Federal Technical Assistance and Funding
Mitigation

Agency	Program	Type of Assistance / Projects Funded	Purpose	Eligible Applicants	Where To Obtain Application	Application Process	Application Deadline	For More Information
			mitigation plans; to enable mitigation measures to be implemented during immediate recovery from a disaster; and to provide funding for previously identified mitigation measures to benefit the disaster area.	tribal organizations; and Alaska Native villages or organizations.		Applicants are encouraged to contact the State Hazard Mitigation Officer for details. Each State has a hazard mitigation administrative plan that explains procedures for administering the HMGP. When the State requests a disaster declaration, it must also request that HMGP funding be made available. Individuals applying for a Hazard mitigation Grant can do it through their communities.	within 90 days after the State Hazard Mitigation Plan is approved. (Approximately 9-18 months after disaster declaration.)	
DHS	National Flood Insurance Program	Formula grants to States.	To enable persons to purchase insurance against physical damage to or loss of buildings and/or contents therein caused by floods, mudslide (i.e., mudflow), or flood-related erosion, thereby reducing Federal disaster assistance payments, and to promote wise floodplain management practices in the Nation's flood-prone and mudflow- prone	Flood insurance can be made available in any community (a State or political subdivision thereof with authority to adopt and enforce floodplain management measures for the areas within its jurisdiction) that submits a properly completed application to FEMA.	Contact State Hazard Mitigation Officer for details.	Community officials must submit an NFIP eligibility application form, which is available from the FEMA, together with: copies of adopted floodplain management measures meeting the minimum standards of 44 CFR Section 60.3(a), 60.3(b), 60.3(c), 60.3(d), and/or 60.3(e), as appropriate for the type of flood hazards identified; a list of any incorporated communities within the applicant's boundaries;	Communities with one or more identified special flood hazard areas must enter the program within 1 year after the identification of those areas or else prohibitions against Federally related financial assistance for acquisition or construction purposes in identified special flood hazard areas take force.	Regional or Local Office. Contact the appropriate FEMA regional office, or the State office responsible for coordinating the program's activities.

Table 4-4g:
Federal Technical Assistance and Funding
Mitigation

Agency	Program	Type of Assistance / Projects Funded	Purpose	Eligible Applicants	Where To Obtain Application	Application Process	Application Deadline	For More Information
			areas.			and estimates of population and, by kind, of buildings situated in the known flood-prone areas of the community. Such Applications should be submitted to the Mitigation Directorate, FEMA, Washington DC 20472. This program is excluded from coverage under OMB Circular No. A-110.	Once the community does qualify, after the prescribed date, these prohibitions are removed. Adequate floodplain management measures must be in effect within 6 months of the date that the special flood hazard area is identified and within 6 months of the date flood water surface elevations are provided.	
DHS	Public Assistance Program	Grants to States and Communities.	To provide supplemental assistance to States, local governments, and certain private nonprofit organizations to alleviate suffering and hardship resulting from major disasters or emergencies declared by the President.	State and local governments and any political subdivision of a State, Indian tribes, and Alaskan Native villages are eligible. Also eligible are private nonprofit organizations that operate educational, utility, emergency, or medical facilities, or that provide custodial care or other essential services of governmental nature to the general public. As a condition of grants under the Stafford Act, applicants are	An applicant should consult the office or official designated as the point-of-contact in the State for more information.	Application for Public Assistance (PA) is made through the Governor's Authorized Representative to the FEMA Regional Director in accordance with FEMA Disaster Assistance Regulations, 44 CFR 206, except as provided in Part 206.35(d) for emergency declarations involving primarily Federal	A Request for Public Assistance is normally submitted by the applicant within 30 days of a declaration.	Public Assistance Branch, Recovery Division, FEMA, DHS, 500 C Street SW., Washington, DC 20472; or the State Emergency office. Additional information is available on FEMA's web site, http://www.fema.gov/rrr/pa/

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Federal Technical Assistance and Funding
Mitigation

Agency	Program	Type of Assistance / Projects Funded	Purpose	Eligible Applicants	Where To Obtain Application	Application Process	Application Deadline	For More Information
				encouraged to mitigate natural hazards.		responsibility.		
DOC; NOAA; NWS	Automated Flood Warning Systems	Funding for creating, renovating, or enhancing Automated Flood Warning Systems.	To provide funding to communities with flood or flash flood problems that affect safety of life and property for warning systems.	Counties, municipalities, educational institutions and non-profit organizations.	http://www.ofa.noaa.gov %7Egrants/appkit.html. Applicants must also provide statement of work, project description and detailed budget narrative and justification.	Submit to: NOAA/NWS, 1325 East-West Highway, AFWS Program Manager, W/OS31, Room 13396, Silver Spring, MD. 20910.	Check with local NWS Office.	AFWS Operations Manager (631) 224-0112.
DOC; Census Bureau	Census Geography	Provide Computer generated set of maps for use in conducting surveys.	Showing results of surveys geographically, determine names and current boundaries of selected statistical areas.	Interested persons, organizations and government agencies.	Written request.	None.	None.	Regional or Local Census Bureau Office http://www.census.gov/field/www/
DOC; NOAA	Geodetic Surveys and Services	To provide national, coordinated spatial reference system at various specified intervals which provide scale, orientation, coordinated positions and elevation of specific points for use in surveying, boundary delineations and demarcation, mapping, planning, and	To provide assistance to State local and regional agencies in the development and implementation of Multipurpose Land Information Systems/Geographic Information Systems pilot projects and spatial reference system development and/or enhancement and height modernization.	Local, municipal, universities and regional agencies.	NOAA Grants Management Division (301) 713-3228.	45-90 day review time after submittal of all documents.	Must be submitted at least 90 days in advance of desired effective date.	NOAA Grants Management Division http://www.ago.noaa.gov/grants/ (301) 713-3228.

Table 4-4g:
Federal Technical Assistance and Funding
Mitigation

Agency	Program	Type of Assistance / Projects Funded	Purpose	Eligible Applicants	Where To Obtain Application	Application Process	Application Deadline	For More Information
		development.						
DOD; USACE	Flood Control Projects	Design and construction of projects.	To reduce flood damages through projects not specifically authorized by Congress.	Political subdivisions of States, or other responsible agencies established under state law. Project must be engineering feasible, complete within itself and economically justified. Non-federal sponsor will share equally in feasibility study, project cost, provide a cash contribution for land enhancement benefits and for features other than flood control, prevent future encroachments which might interfere with function and maintain the project.	Formal Letter to District Engineer From A Prospective Sponsoring Agency.	Consult with the District Office.	None.	District Office. http://www.usace.army.mil/howdoi/where.html
DOD; USACE	Flood Plain Management Services	Advisory Services and Counseling; Dissemination of Technical Information.	To promote appropriate recognition of flood hazards in land and water us planning and development through the provision of flood and floodplain related data, technical services and guidance.	Political subdivisions of States, other non-public organizations and the public.	None needed. A letter should be sent to the District Engineer of the Corps of Engineers.	Send letter of Request.	None.	District Office. http://www.usace.army.mil/howdoi/where.html
DOD; USACE	Snagging and Clearing for Flood Control	Design and construction of projects. Non-federal sponsor must provide land, easement, right-of-way;	To reduce flood damages.	Political subdivisions of States, or other responsible agencies established under state law.	Formal Letter to District Engineer From A Prospective Sponsoring Agency.	Consult with the District Office.	None.	District Office. http://www.usace.army.mil/howdoi/where.html

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Agency	Program	Type of Assistance / Projects Funded	Purpose	Eligible Applicants	Where To Obtain Application	Application Process	Application Deadline	For More Information
		provide costs in excess of the Federal limit; maintain project; Hold US free from damages; cost share for land enhancement or special benefits; prevent future encroachments which will interfere with proper functioning of project.						
DOI	National Fire Plan - Wildland Urban Interface Community Fire Assistance	Project Grants; Use of Property, Facilities, and Equipment; Provision of Specialized Services; Advisory Services and Counseling; Dissemination of Technical Information; Training.	To implement the National Fire Plan and assist communities at risk from catastrophic wildland fires by providing assistance in the following areas: Provide community programs that develop local capability including; assessment and planning, mitigation activities, and community and homeowner education and action; plan and implement hazardous fuels reduction activities, including the training, monitoring or maintenance associated with such hazardous fuels reduction activities, on	States and local governments at risk as published in the Federal Register, Indian Tribes, public and private education institutions, nonprofit organizations, and rural fire departments serving a community with a population of 10,000 or less in the wildland/urban interface.	Contact the appropriate State Office or the National Interagency Fire Center's web site at: http://www.nifc.gov.	Wildland Urban Interface Community Assistance is coordinated by Bureau State and Field Offices. No specific application forms apply, except for grants awarded, the standard application forms furnished by the Federal agency and required by 43 CFR Part 12, Subpart C, "Uniform Administrative Requirements for Grants and Cooperative Agreements to State and Local Governments," and	None.	Regional or Local Office. http://www.blm.gov/nhp/index.htm http://www.nifc.gov

Table 4-4g:
Federal Technical Assistance and Funding
Mitigation

Agency	Program	Type of Assistance / Projects Funded	Purpose	Eligible Applicants	Where To Obtain Application	Application Process	Application Deadline	For More Information
			federal land, or on adjacent nonfederal land for activities that mitigate the threat of catastrophic fire to communities and natural resources in high risk areas; enhance local and small business employment opportunities for rural communities; enhance the knowledge and fire protection capability of rural fire districts by providing assistance in education and training, protective clothing and equipment purchase, and mitigation methods on a cost share basis.			43 CFR Part 12, Subpart F, "Uniform Administrative Requirements for Grants and Agreements With Institutions of Higher Education, Hospitals, and Other Nonprofit Organizations", must be used by this program.		
DOI; National Park Service	Technical Preservation Services	Advisory Services, Technical Information, Specialized Services.	Technical information is provided to assist local governments and owners to preserve and maintain historic properties.	Local governments and individuals.	State historic Preservation Office.	Apply through appropriate state official or NPS Regional Office.	None.	Regional or local office.
USDA; Natural Resources Conservation Service	Soil Survey	Dissemination of Technical Information.	Soil surveys for planners, environmentalists, engineers, zoning commissions, tax commissions, homeowners, farmers, ranchers, developers, landowners and operators.	Individuals and Groups that have a need for soil survey.	Contact Natural Resources conservation Service Office.	Request from Natural Resources Conservation Service District Office	None	Natural Resources Conservation Service District Office http://www.nrcs.usda.gov/
USDA;	Watershed	Project Grants	Project Grants	Counties, groups of	Standard Application obtained from NRCS.	Details available in	None.	Natural Resources Conservation Service

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Federal Technical Assistance and Funding
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Agency	Program	Type of Assistance / Projects Funded	Purpose	Eligible Applicants	Where To Obtain Application	Application Process	Application Deadline	For More Information
Natural Resources Conservation Service	Protection and Flood Prevention	sharing the cost of watershed protection measures, flood prevention, agricultural water management, sediment control, wildlife, recreation and in extending long term credit for these projects. Advisory Services and Counseling in designing and installing watershed works of improvement.	sharing the cost of watershed protection measures, flood prevention, agricultural water management, sediment control, wildlife, recreation and in extending long term credit for these projects. Advisory Services and Counseling in designing and installing watershed works of improvement.	counties, municipalities, towns or townships, soil and water conservation districts, flood prevention or flood control districts, Indian tribes or tribal organizations, and non-profit agencies with authority under state law to carry out, maintain and operate watershed works of improvement.		State and field offices of NRCS.		District Office http://www.nrcs.usda.gov/
USDA; Natural Resources Conservation Service	Watershed Surveys and Planning	Technical assistance for planning activities to help solve water and land related resource problems.	To help solve problems of upstream rural community flooding, water quality improvement, wetland preservation and drought management.	Local water resource agency concerned with water and related land resource development, counties, municipalities, towns or townships, Indian Tribe and Tribal Organizations, and non-profit organizations.	NCRS Offices and Letter of request Addressed to State Conservationist.	NCRS Offices and Letter of request Addressed to State Conservationist.	None.	Natural Resources Conservation Service District Office http://www.nrcs.usda.gov/

SECTION 5 - MITIGATION GOALS

Goals were developed by taking into consideration both state and jurisdictional goals for mitigation. The goals in this multi-jurisdictional plan are broadly aligned with the goals of the State Hazard Mitigation Plan. In fact, the Lewis County Multi-Jurisdictional Hazard Mitigation Plan Goals are in support of furthering the State's goals in many ways.

New York State Hazard Mitigation Plan Goals

New York State's Hazard Mitigation Vision Statement reads:

"To create communities whose daily activities reflect a comprehensive commitment by government, business, non-profit organizations, and the public to eliminate or reduce risks and adverse impacts from natural, technological, and human-caused hazards."

As outlined in the New York State Hazard Mitigation Plan (approved by FEMA January 4th, 2008), the State's generic goals are to:

1) Promote hazard mitigation awareness and education throughout the State.
2) Build a State and Local hazard mitigation infrastructure within the State and promote mitigation as the most effective means to reduce future disaster losses.
3) Implement, maintain, and update a comprehensive State Multi-Hazard Mitigation Plan.
4) Reduce risk to lives and property from frequent natural, technological and human caused disasters. Set priority on hazards that are repetitive and pose severe risk to life and property.
5) Promote the implementation of flood mitigation plans and projects in flood prone areas of the State, in accordance with the FMA program as well as the Severe Repetitive Loss (SRL) program.
6) Encourage the development and implementation of long-term, cost-effective and environmentally sound mitigation projects at the local level.
7) Promote Hazard Resistant Construction, especially in residential buildings throughout the State.

Lewis County Multi-Jurisdictional Hazard Mitigation Plan Goals

The Lewis County Multi-Jurisdictional Hazard Mitigation Plan Goals are broad, long-term statements of what the participating jurisdictions will work to achieve over time through implementation of the plan. They are based on the findings of the risk assessment, and will apply to each jurisdiction adopting this plan.

1. Promote disaster-resistant development.
2. Build and support local capacity to enable the public to prepare for, respond to, and recover from disasters.
3. Reduce the possibility of damage and losses due to extreme temperatures.
4. Reduce the possibility of damage and losses due to tornadoes and other high winds.
5. Reduce the possibility of damage and losses due to winter storms.
6. Reduce the possibility of damage and losses due to dam failure.
7. Reduce the possibility of damage and losses due to drought.
8. Reduce the possibility of damage and losses due to flooding

9. Reduce the possibility of damage and losses due to ice jams.
10. Reduce the possibility of damage and losses due to earthquakes.
11. Reduce the possibility of damage and losses due to landslides.
12. Reduce the possibility of damage and losses due to wildfires.
13. Reduce the possibility of damages to emergency and critical facilities due to flooding, wildfires, and extreme winds.

SECTION 6 - RANGE OF ALTERNATIVE MITIGATION ACTIONS ANALYZED

For this hazard mitigation plan to be approved by FEMA, each participating jurisdictions was required to identify and analyze a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard (as per Part 201.6(c)(3)(ii)). The plan must include a list of *potential* loss reduction actions (including a comprehensive range of specific mitigation actions for each profiled hazard), and document that each jurisdiction has *analyzed* various actions that achieve the communityôs goals to reduce or avoid the effects of the identified hazards. Current FEMA guidance states that the plan *should* (though is not required to) describe the process by which the community decided on particular mitigation actions, and points out that some of the mitigation actions initially identified may ultimately be eliminated in the communityôs action plan after analysis. Note that while current FEMA guidance is clear that a comprehensive range of actions should be *considered* for each identified hazard (Part 201.6(c)(3)(ii), it does not require that actions addressing each identified hazard ultimately be selected for inclusion in the mitigation strategy/action plan, as per Parts 201.6(c)(3)(iii) and 201.6(c)(3)(iv). *(For more information, see FEMA's Local Multi-Hazard Mitigation Planning Guidance, July 2008).*

Table 6.1 beginning on the following page presents a range of types of mitigation actions that were considered by Planning Group members to address each of the hazards profiled in this plan. This table is intended to be used as a launching point for the discussion and development of specific mitigation actions for each municipality, in conjunction with a mitigation action items ñTip Sheetò, which was also distributed to members of the Core Planning Group. In addition to listing examples of mitigation actions, the Tip Sheet also provided background information regarding the selection of mitigation actions and information regarding the eligibility of mitigation actions under the various FEMA grant programs.

At a working session of the Core Planning Group on March 2nd, 2010, participating jurisdictions analyzed this comprehensive range of actions and identified a mitigation strategy for their jurisdiction. Mitigation actions were analyzed and identified for a range of hazards that intend to reduce the effects of hazards on both new and existing buildings and infrastructure.

The plan ensures that each jurisdiction will in some way address each applicable profiled hazard by the identification of some actions that take the form of County-led initiatives with specific involvement and participation by each participating jurisdiction. This approach to meeting the current interpretation of requirement 201.6(c)(3)(ii) was confirmed by FEMA Region 2 to be acceptable in a letter to the New York State Emergency Management Office dated April 16, 2010.

The following section of this plan (Section 7) describes how mitigation actions for each participating jurisdiction were evaluated and prioritized using current FEMA methodologies, and describes the criteria used during these exercises.

Table 6-1
Types of Actions Considered to Achieve Mitigation Goals

Goals/Actions		Actions	
Goal	**Description**	**Action**	**Description**
1	Promote disaster-resistant development (can include **all** hazards).	1.A	Join the National Flood Insurance Program (for non-participating or suspended communities).
		1.B	Ensure that local comprehensive plans incorporate natural disaster mitigation techniques by requiring a courtesy- review of draft plans by the County Emergency Management Agency.
		1.C	Explore the need for amending current land use regulations by adding or revising hazard zoning, high-risk hazard land use ordinances, subdivision regulations, and development density controls.
		1.D	Organize an annual event / fair for homeowners, builders and county and local jurisdictions that includes sale of NOAA weather radios, dissemination of information brochures about disasters and building retrofits, demonstration of ñdefensible-spaceò concept and fire resistant construction materials (for roofs/exterior finishes and inflammable coverings for openings like chimneys and attics) etc.
		1.E	Develop a stormwater management plan that includes subdivision regulations to control run-off; both for flood reduction and to minimize saturated soils on steep slopes that can cause landslides.
2	Build and support local capacity to enable the public to prepare for, respond to, and recover from disasters (can include **all** hazards).	2.A	Expand and disseminate GIS and other hazard information to other communities and the general public via the internet.
		2.B	Develop a plan and seek funding for backup electric and telecommunications systems in local government-owned critical facilities.
		2.C	Support and fund Community Emergency Response Team (CERT) programs that also include a mitigation component.
		2.D	Create a Hazard Information Center ï a virtual and physical library that contains all technical studies, particularly natural resources.
		2.E	Investigate installation of weather monitoring equipment.
		2.F	Implement public awareness, education, and outreach programs for multiple or targeted hazards, including identification and awareness of emergency response policies, evacuation routes and procedures, and communication/warning systems.
		2.G	Expanding upon the parcel data in the Countyôs GIS to include such information as building square footage, year built, type, foundation type, and condition, would allow for a more accurate assessment of vulnerability. Use information to update plan. Ensure information will be available to the public and to relevant communities and agencies..
		2.H	Provide training for inspection and enforcement of adopted codes and ordinances.
		2.I	Install or upgrade local emergency alarm/warning systems.

Table 6-1
Types of Actions Considered to Achieve Mitigation Goals

Goals/Actions		Actions	
Goal	**Description**	**Action**	**Description**
3	Reduce the possibility of damage and losses due to extreme temperatures.	3.A	Develop and distribute outreach tools for homeowners and building permit applicants on protection of structures against cold weather damage and proper maintenance of heating/cooling systems.
		3.B	Review existing emergency response plans for enhancement opportunities: work with local governments, social support agencies, homeowners associations and general public to develop and implement monitoring and contact/warning systems focused on vulnerable populations (isolated, elderly, special needs) and provision of adequate shelter facilities.
		3.C	Install temperature sensors/alarms in key buildings to warn of potential frozen pipes/boiler failure.
4	Reduce the possibility of damage and losses due to tornadoes and other high winds.	4.A	Adopt an ordinance to require the construction and completion of operation plans for safe rooms in mobile home parks.
		4.B	Provide low interest loans (or other form of financial assistance) for building safe rooms.
		4.C	Conduct countywidesurvey to determine status of auxiliary power supplies at all emergency/critical facilities in all municipalities.
		4.D	Provide technical assistance for building residential and community safe rooms.
		4.E	Adopt an ordinance to require wind-resistant construction/development such as siting considerations and hurricane clips on new structures.
		4.F	Install hurricane clips and wind shutters on existing development-particularly emergency facilities and shelters built before existing codes were adopted to offer some degree of wind protection.
		4.G	Implement landscaping practices such as removal/trimming of trees that threaten wind damage to utilities or structures in high winds.
		4.H	Provide training for the development and implementation of programs to mitigate wind damage to public facilities and private properties.
5	Reduce the possibility of damage and losses due to winter storms.	5.A	Retrofit/modify critical facilities and other strictures to reduce the possibility of damages due to ice buildup.
		5.B	Promote (or purchase, for critical facilities) NOAA weather radios.
		5.C	Educate residents about driving in winter storms, personal responsibilities during winter storms, and handling winter-related health effects.
		5.D	Ice and windstorm-resistant trees and landscaping practices (including tree trimming/removal) to reduce tree-related hazards.
		5.E	Bury or otherwise protect utility lines to avoid power outage due to winter storms (if risk is very high then only this action might be cost-effective).

Table 6-1
Types of Actions Considered to Achieve Mitigation Goals

Goals/Actions		Actions	
Goal	**Description**	**Action**	**Description**
		5.F	Snow fences and barriers to prevent drifting across highways and in vicinity of emergency/critical facilities.
		5.G	Establish warming shelters for vulnerable populations and stranded drivers during winter storms.
		5.H	Coordinate with local governments and other agencies to systematically contact isolated, vulnerable, or special needs population during extreme temperature events.
		5.J	Revise snow removal/disposal procedures to avoid obstruction of highways and flooding/erosion/pollution of watercourses.
6	Reduce the possibility of damage and losses due to dam failures	6.A	Enforce participation in/compliance with National and NYSDEC / NYSEMO Dam Safety Programs.
		6.B	Investigate sources of funding to assist dam owners (public and private) to complete required repairs/maintenance. Investigate low interest loans to owners and/or jurisdiction acting as guarantor of private ownersô loans.
		6.C	Investigate and develop emergency action plans (including inundation mapping) for dams where such plans and mapping are currently lacking or where existing inundation mapping could be updated and revised with greater accuracy and detail.
		6.D	Notify owners of property in dam break inundation areas of risks, implement restrictions for new development in these areas.
7	Reduce the possibility of damage and losses due to drought.	7.A	Encourage citizens to implement water conservation measures by distributing water saving kits which include replacement shower heads, flow restrictors, and educational pamphlets which describe water saving techniques. Also encourage conservation by offering rebates for ultra-low-flow toilets.
		7.B	Modify rate structure to influence consumer water use including: increasing rates during summer months and imposing excess use charges during times of water shortage.
		7.C	Reduce water use for landscaping by imposing mandatory water-use restrictions during times of water shortage. Also, develop a demonstration garden to exhibit water conservation techniques.
		7.D	Publish and distribute pamphlets on water conservation techniques and drought management strategies.
		7.E	Develop and adopt an emergency water allocation strategy to be implemented during severe drought.
		7.F	Implement water metering and leak detection programs followed by water main repair/replacement to reduce losses.
		7.G	Encourage beneficial re-use of treated wastewater effluent through cooperative projects with dischargers, agriculture and other major water users to distribute or provide this alternative source of water.

Table 6-1
Types of Actions Considered to Achieve Mitigation Goals

Goals/Actions		Actions	
Goal	**Description**	**Action**	**Description**
8	Reduce the possibility of damage and losses due to flooding.	8.A	Join the National Flood Insurance Program (NFIP). As a participant, floodplains within the participating community will be identified and mapped. In return, the participating community will become eligible for flood insurance as long as the local governing body adopts and enforces an approved floodplain ordinance.
		8.B	Join the NFIP Community Rating System (CRS), under which communities implementing actions that go beyond the specified NFIP minimum are eligible for discounted flood insurance premiums.
		8.C	Obtain specialist training and certification (e.g. Certified Floodplain Manager) from the Association of State Floodplain Managers for local staff tasked with enforcement of relevant codes and flood-related ordinances.
		8.D	Update and revise flood mapping countywide (County is not scheduled to be included in current FEMA Region 2 Risk Mapping, Assessment and Planning Program)
		8.E	Limit uses in floodways to those tolerant of occasional flooding, including but not limited to agriculture, outdoor recreation, and natural resource protection areas.
		8.F	Develop a Countywide gauging and warning system for flash and riverine flooding.
		8.G	Continue to implement best management practices for floodplain areas.
		8.H	Explore mitigation opportunities for structures vulnerable to flooding, including acquisition, relocation, elevation, and flood-proofing measures to reduce damage to these structures, with particular emphasis on Repetitive Loss Properties (RLPs),
		8.I	Identify locations/structures suitable for construction of floodwalls and other barriers such as raised roads.
		8.J	Conduct stream maintenance and debris removal programs (for currently non-participating communities) and seek financial assistance to clean out stream segments with heavy sediment deposits.
		8.K	Develop specific mitigation solutions for flood-prone roadways and intersections. This can include, but is not limited to, actions such as culvert upgrades, bridge widening drainage improvements, road raisings, bank stabilization, etc. Develop a work plan for when sites will be surveyed and what role the local government can play in the selection and implementation of mitigation activities (e.g. any monetary or contextual support through the local capital improvement plan or in-kind services).
		8.L	Implement wetlands development regulations and restoration programs.

Table 6-1
Types of Actions Considered to Achieve Mitigation Goals

Goals/Actions		Actions	
Goal	**Description**	**Action**	**Description**
		8.M	Implement identified stormwater recharge, rate or volume projects identified in Regional Stormwater Management Plans to decrease ñflashò in streams during/after storm events.
		8.N	Implement and enforce open space preservation programs.
		8.O	Implement specific actions to enhance/improve participation in/compliance with National Flood Insurance Program (NFIP).
9	Reduce the possibility of damage and losses due to ice jams	9.A	Implement monitoring and early warning measures at key locations
		9.B	Investment in ice-clearing/breaking equipment and appropriate training for county personnel.
		9.C	Widening or modification of bridges known to be potential or historic choke points for ice flow.
		9.D	Construction of ice control structures such as booms, tension weirs, and sloped block barriers.
10	Reduce the possibility of damage and losses due to earthquakes.	10.A	Retrofit/Reconstruct old critical facilities.
		10.B	Acquire dilapidated vulnerable structures.
		10.C	Public awareness through video/brochures about simple steps homeowners can take to identify risk and mitigate damage.
		10.D	Examine provisions for earthquake resistant retrofits for existing structures and infrastructure, paying particular attention to unreinforced masonry structures built prior to the adoption of building codes requiring earthquake resistant design for new construction.
		10.E	Implement hillside and steep slope development regulations.
11	Reduce the possibility of damage and losses due to landslides	11.A	Create comprehensive geological mapping for areas prone to landslides and rockslides.
		11.B	Locally identify and map specific areas of potential slope failure and limit future development in these areas.
		11.C	Identify areas where riverine erosion is threatening roads and/or development and implement stabilization/remedial measures.
		11.D	Develop a public outreach program that addresses the economic impacts of landslides on personal property.
		11.E	Consider adopting a steep slope ordinance, if one is not already in place, to regulate development on these higher risk areas.
		11.F	Develop a vegetation management plan. Proper vegetation can supply slope-stabilizing root strength, and facilitate precipitation interception. Establishing and maintaining appropriate vegetation of areas above the bluff slope may be the single most important and cost-effective mitigation measure available.

Table 6-1
Types of Actions Considered to Achieve Mitigation Goals

Goals/Actions		Actions	
Goal	**Description**	**Action**	**Description**
12	Reduce the possibility of damage and losses due to wildfires	12.A	In consultation with NYSDEC Forest Protection & Fire Management and local forest rangers, develop detailed mapping of wildland/urban interface areas.
		12.B	Develop inventory of addresses for route alerting during wildfire emergencies that require public warning and information.
		12.C	In consultation with NYSDEC Forest Protection & Fire Management and local forest rangers, review local EOPs for possible wildfire components regarding Fire-Rescue, Alert Warning Communications, and Evacuation.
		12.D	Identify and map wildland access points for firefighter access.
		12.E	Implement and enforce open space preservation programs.
		12.F	Implement prescribed burning for hazard reduction.
		12.G	Initiate a public outreach program for homeowners encouraging fire mitigation activities and the creation of defensible spaces around structures.
		12.H	Retrofit buildings with fire resistant materials, especially roofing.
		12.I	Relocate structures (in particular critical facilities) out of hazard areas.
		12.J	Community brush and debris removal and hazard fuels reduction.
		12.K	Encourage ñFirewiseò landscaping techniques in higher risk areas.
		12.L	Mitigation activities such as vegetation control/clearance for streets, highways, and roads that provide key fire access and fuel breaks.
13	Reduce the possibility of damages to emergency and critical facilities from **all** applicable hazards.	13.A	Conduct a study to determine the year-built and current level of protection for each emergency/critical facility.
		13.B	On completion of 13.A, seek funding for mitigation projects for emergency facilities not currently designed for protection from all locally applicable hazards.

In addition to these general types of mitigation actions, the Core Planning Group members and JATs were also encouraged to consider any additional specific mitigation actions that had been identified throughout the course of the planning process as specific problems and/or problem areas were brought to light.

Several sources of additional information on types of hazard mitigation actions that were made available for consultation were considered during the development of mitigation strategies and are attached in Appendix E:

- Mitigation Action Items Tip Sheet
- Mitigation Job Aid (from FEMAôs How-To #3 Appendix D)
- Mitigation Glossary of Terms (from FEMAôs How-To #3 Appendix A)
- Mitigation Strategy Guidance Memorandum

Participating Jurisdictions' Analysis of Possible Mitigation Actions

Core Planning Group members next analyzed the full range of possible actions identified in Table 6-1. Their analysis involved a two step process:

1. Core Planning Group Members conducted a preliminary analysis of each action item in Table 6-1, considering the action item in relation to the results of the risk assessment and unique local considerations to identify a subset of preferred action items that would be evaluated in more detail. The results of this preliminary analysis are presented in Table 6-2. (Note: FEMA requires that the plan identify and analyze a range of actions considered to reduce the effects of each hazard. Some actions initially identified in Table 6-1 were ultimately eliminated in local jurisdiction action plans. FEMAôs Guidance document is clear the plan text can, though is not required, to explain the rationale behind why some of the actions considered were ultimately eliminated in the communityôs action plan after the analysis.
2. For the subset of preferred action items, Core Planning Group Members conducted a detailed evaluation and prioritization using FEMAôs STAPLEE approach as described in further detail in Section 7 of this plan. Implementation strategies (ñaction plansò, addressing how the actions will be implemented and administered) for the subset of preferred action items are discussed in greater detail in Section 8 of this plan.

Table 6.2 Key:

Y: During the preliminary analysis/screening of all mitigation actions the participating jurisdiction selected this action for further evaluation and prioritization.

Y*: Includes actions selected jointly by the County and participating jurisdictions to be implemented as a County-led initiative with significant participation and involvement by the individual jurisdictions. Note that some County-wide actions address multiple hazards to some extent.

N: Actions not selected for further evaluation and prioritization in this initial planning cycle.

N/A: The hazard is currently not considered applicable to the jurisdiction.

0: This jurisdiction did not select, evealuate, or prioritize any local/individual mitigation actions. Such jurisdictions may participate in County-led initiatives but will not be eligible to apply for FEMA grant funds.

In addition to the range of initial actions listed in Table 6.1, each participating jurisdiction was required to identify, evaluate and prioritize actions related to continued/enhanced compliance with the National Flood Insurance Program. These actions and the individual municipalitiesô analyses of them are included in Appendix D, which also includes recent supplementary guidance (ñHazard Mitigation ï NFIP Requirementsò) which should be consulted by the individual municipalities for future plan updates. The participating jurisdictions were urged to consider mitigation actions for Repetitive Loss Properties within their boundaries, and were advised as to how municipal governments may coordinate with owners of private property to work towards mitigation measures for RLPs (or any other hazard-vulnerable assets) which are not publicly-owned.

For additional advice and details regarding the National Flood Insurance Program and Certified Floodplain Manager training, municipal staff should contact the State Floodplain Manager Bill Nechamen or the regional NFIP Coordinator Carl Quance, whose contact details are as follows:

William Nechamen
New York Dept. of Environmental Conservation.
625 Broadway
Albany, NY 12233-3507
518-402-8146
Fax 518-402-9029
wsnecham@gw.dec.state.ny.us

Carl Quance
315-429-6606
cbquance@gw.dec.state.ny.us

During the planning process, the question arose as to how individual municipalities were to proceed with the development of mitigation strategies and actions in situations if/where other agencies such as the U.S. Army Corps of Engineers are known to be considering the implementation of (possibly large-scale) mitigation measures in the same area. The CPG was advised that the full implementation of such proposed projects is not guaranteed, and that even if such projects are approved and funded, it can be many years before they are initiated.

With that in mind, the communities were advised to decide whether they would be willing to risk the chance of damage over that interim period between the current planning process and the assumed completion of studies and subsequent projects that are not guaranteed to be implemented. However, if the community decides to defer mitigation actions pending studies by other agencies, it is recommended that the study be visited at the five year update to ensure that sufficient progress is being made towards completion of a project, or to determine if another strategy is needed. It is also recommended that each community include at least one mitigation project regardless of hazard or any other plans or proposals, in order to receive credit from FEMA for having a mitigation plan which may be used to aid applications for grants to reduce risks from hazards not affected by the proposed plans.

Table 6.2
Results of Preliminary Analysis/Screening of Mitigation Actions

Mitigation Action	Action	Lewis, County of	Castorland, Village of	Constableville, Village of	*Copenhagen, Village of*	Croghan, Town of	Croghan, Village of	Denmark, Town of	Diana, Town of	Greig, Town of	Harrisburg, Town of	*Harrisville, Village of*	Lewis, Town of	Leyden, Town of	Lowville, Town of	Lowville, Village of	Lyons Falls, Village of	Lyonsdale, Town of	Martinsburg, Town of	Montague, Town of	*New Bremen, Town of*	Osceola, Town of	Pinckney, Town of	Port Leyden, Village of	*Turin, Town of*	*Turin, Village of*	*Watson, Town of*	West Turin, Town of
Promote disaster-resistant development. (can include **all** hazards).	1.A	N	N	N	0	N	N	N	N	N	N	0	N	N	N	N	N	N	N	N	0	N	N	N	0	0	0	N
	1.B	**Y***	**Y***	**Y***	0	**Y***	**Y***	**Y***	**Y***	**Y***	**Y***	0	**Y***	**Y***	**Y***	**Y***	**Y***	**Y***	**Y***	**Y***	0	**Y***	**Y***	**Y***	0	0	0	**Y***
	1.C	N	N	N	0	N	N	N	N	N	N	0	N	N	**Y**		N	N	N	N	0	N	N	N	0	0	0	N
	1.D	N	N	N	0	N	N	N	N	N	N	0	N	N	N	N	N	N	N	N	0	N	N	N	0	0	0	N
	1.E	N	N	N	0	N	N	N	N	N	N	0	N	N	N	N	N	N	N	N	0	N	N	N	0	0	0	N
Build and support local capacity to enable the public to prepare for, respond to, and recover from disasters. (can include **all** hazards).	2.A	**Y***	**Y***	**Y***	0	**Y***	**Y***	**Y***	**Y***	**Y***	**Y***	0	**Y***	**Y***	**Y***	**Y***	**Y***	**Y***	**Y***	**Y***	0	**Y***	**Y***	**Y***	0	0	0	**Y***
	2.B	**Y**	**Y**	N	0	N	N	**Y**	N	N	N	0	N	N	**Y**	N	N	**Y**	N	N	0	N	N	N	0	0	0	N
	2.C	N	N	N	0	N	N	N	N	N	N	0	N	N	N	N	N	N	N	N	0	N	N	N	0	0	0	N
	2.D	N	N	N	0	N	N	N	N	N	N	0	N	N	N	N	N	N	N	N	0	N	N	N	0	0	0	N
	2.E	**Y**	N	N	0	N	N	N	N	N	N	0	N	N	N	N	N	N	N	N	0	N	N	N	0	0	0	N
	2.F	**Y**	N	N	0	N	N	N	N	N	N	0	N	N	**Y**	N	N	N	N	N	0	N	N	N	0	0	0	N
	2.G	N	N	N	0	N	N	N	N	N	N	0	N	N	N	N	N	N	N	N	0	N	N	N	0	0	0	N
	2.H	N	N	N	0	N	N	N	N	N	N	0	N	N	**Y**	N	N	N	N	N	0	N	N	N	0	0	0	N
	2.I	N	**Y**	N	0	N	N	N	N	N	N	0	N	N	**Y**	N	N	N	N	N	0	N	N	N	0	0	0	N
Reduce the possibility of damage and losses due to extreme temperatures.	3.A	N	N	N	0	N	N	N	N	N	N	0	N	N	N	N	N	N	N	N	0	N	N	N	0	0	0	N
	3.B	**Y***	**Y***	**Y***	0	**Y***	**Y***	**Y***	**Y***	**Y***	**Y***	0	**Y***	**Y***	**Y***	**Y***	**Y***	**Y***	**Y***	**Y***	0	**Y***	**Y***	**Y***	0	0	0	**Y***
	3.C	N	N	N	0	N	N	N	N	N	N	0	N	N	N	N	N	N	N	N	0	N	N	N	0	0	0	N
Reduce the possibility of damage and losses due to tornadoes and other high winds.	4.A	N	N	N	0	N	N	N	N	N	N	0	N	N	N	N	N	N	N	N	0	N	N	N	0	0	0	N
	4.B	N	N	N	0	N	N	N	N	N	N	0	N	N	N	N	N	N	N	N	0	N	N	N	0	0	0	N
	4.C	**Y***	**Y***	**Y***	0	**Y***	**Y***	**Y***	**Y***	**Y***	**Y***	0	**Y***	**Y***	**Y***	**Y***	**Y***	**Y***	**Y***	**Y***	0	**Y***	**Y***	**Y***	0	0	0	**Y***
	4.D	N	N	N	0	N	N	N	N	N	N	0	N	N	N	N	N	N	N	N	0	N	N	N	0	0	0	N
	4.E	N	N	N	0	N	N	N	N	N	N	0	N	N	**Y**	N	N	N	N	N	0	N	N	N	0	0	0	N
	4.F	N	N	N	0	N	N	N	N	N	N	0	N	N	N	N	N	N	N	N	0	N	N	N	0	0	0	N
	4.G	N	N	N	0	N	**Y**	N	N	**Y**	N	0	N	N	N	N	**Y**	N	N	N	0	N	**Y**	**Y**	0	0	0	N
	4.H	**Y***	**Y***	**Y***	0	**Y***	**Y***	**Y***	**Y***	**Y***	**Y***	0	**Y***	**Y***	**Y***	**Y***	**Y***	**Y***	**Y***	**Y***	0	**Y***	**Y***	**Y***	0	0	0	**Y***
Reduce the possibility of damage and losses due to winter storms.	5.A	N	N	N	0	**Y**	N	N	N	N	N	0	N	N	N	N	N	N	N	N	0	N	N	N	0	0	0	N
	5.B	**Y**	N	N	0	N	N	N	N	N	N	0	N	N	N	N	N	N	N	N	0	N	N	N	0	0	0	N
	5.C	**Y***	**Y***	**Y***	0	**Y***	**Y***	**Y***	**Y***	**Y***	**Y***	0	**Y***	**Y***	**Y***	**Y***	**Y***	**Y***	**Y***	**Y***	0	**Y***	**Y***	**Y***	0	0	0	**Y***
	5.D	N	N	N	0	N	N	N	N	N	N	0	N	N	N	N	**Y**	N	N	N	0	N	**Y**	**Y**	0	0	0	N
	5.E	N	N	N	0	N	N	N	N	N	N	0	N	N	N	N	N	N	N	N	0	N	N	N	0	0	0	N
	5.F	**Y**	N	N	0	N	N	**Y**	N	N	N	0	**Y**	**Y**	N	N	N	N	N	N	0	N	N	N	0	0	0	**Y**
	5.G	**Y***	**Y***	**Y***	0	**Y***	**Y***	**Y***	**Y***	**Y***	**Y***	0	**Y***	**Y***	**Y***	**Y***	**Y***	**Y***	**Y***	**Y***	0	**Y***	**Y***	**Y***	0	0	0	**Y***
	5.H	**Y***	**Y***	**Y***	0	**Y***	**Y***	**Y***	**Y***	**Y***	**Y***	0	**Y***	**Y***	**Y***	**Y***	**Y***	**Y***	**Y***	**Y***	0	**Y***	**Y***	**Y***	0	0	0	**Y***
	5.J	N	N	N	0	N	N	N	N	N	N	0	N	N	N	N	N	N	**Y**	N	0	N	N	N	0	0	0	**Y**
Reduce the possibility of damage and losses due	6.A	**Y***	**Y***	N/A	0	**Y***	**Y***	**Y***	N/A	N/A	N/A	0	**Y***	**Y***	N/A	N/A	N/A	**Y***	**Y***	N/A	0	N/A	N/A	N/A	0	N/A	0	N/A

Table 6.2
Results of Preliminary Analysis/Screening of Mitigation Actions

Mitigation Action	Action	Lewis, County of	Castorland, Village of	Constableville, Village of	*Copenhagen, Village of*	Croghan, Town of	Croghan, Village of	Denmark, Town of	Diana, Town of	Greig, Town of	Harrisburg, Town of	*Harrisville, Village of*	Lewis, Town of	Leyden, Town of	Lowville, Town of	Lowville, Village of	Lyons Falls, Village of	Lyonsdale, Town of	Martinsburg, Town of	Montague, Town of	*New Bremen, Town of*	Osceola, Town of	Pinckney, Town of	Port Leyden, Village of	*Turin, Town of*	*Turin, Village of*	*Watson, Town of*	West Turin, Town of
to dam failures	6.B	N	N	N/A	0	N	**Y**	N	N/A	N	N/A	N/A	N	**Y**	N/A	N/A	N/A	N	N	N/A	0	N/A	N/A	N/A	0	N/A	0	N/A
	6.C	**Y***	**Y***	N/A	0	**Y***	**Y***	**Y***	N/A	**Y***	N/A	N/A	**Y***	**Y***	N/A	N/A	N/A	**Y***	**Y***	N/A	0	N/A	N/A	N/A	0	N/A	0	N/A
	6.D	N	N	N/A	0	N	N	N	N/A	N	N/A	N/A	N	N	N/A	N/A	N/A	N	N	N/A	0	N/A	N/A	N/A	0	N/A	0	N/A
Reduce the possibility of damage and losses due to drought.	7.A	N	N	N	0	N	N	N	N	N	N	0	N	N	N	N	N	N	N	N	0	N	N	N	0	0	0	N
	7.B	N	N	N	0	N	N	N	N	N	N	0	N	N	N	N	N	N	N	N	0	N	N	N	0	0	0	N
	7.C	N	N	N	0	N	N	N	N	N	N	0	N	N	N	N	N	N	N	N	0	N	N	N	0	0	0	N
	7.D	**Y***	**Y***	**Y***	0	**Y***	**Y***	**Y***	**Y***	**Y***	**Y***	0	**Y***	**Y***	**Y***	**Y***	**Y***	**Y***	**Y***	**Y***	0	**Y***	**Y***	**Y***	0	0	0	**Y***
	7.E	N	N	N	0	N	N	N	N	N	N	0	N	N	N	N	N	N	N	N	0	N	N	N	0	0	0	N
	7.F	N	N	N	0	N	N	N	N	N	N	0	N	N	N	N	N	N	N	N	0	N	N	N	0	0	0	N
	7.G	N	N	N	0	N	N	N	N	N	N	0	N	N	N	N	N	N	N	N	0	N	N	N	0	0	0	N
Reduce the possibility of damage and losses due to flooding.	8.A	N	N	N	0	N	N	N	N	N	N	0	N	N	N	N	N	N	N	N	0	N	N	N	0	0	0	N
	8.B	N	**Y**	**Y**	N/A	**Y**	**Y**	**Y**	**Y**	**Y**	N	0	**Y**	**Y**	**Y**	N	**Y**	**Y**	**Y**	N	0	N	**Y**	**Y**	0	0	0	**Y**
	8.C	**Y**	**Y**	N	N/A	**Y**	**Y**	**Y**	**Y**	**Y**	N	0	**Y**	**Y**	**Y**	N	**Y**	**Y**	**Y**	N	0	N	**Y**	**Y**	0	0	0	N
	8.D	**Y**	N	N	N/A	N	N	**Y**	N	N	N	0	N	N	**Y**	N	N	N	N	N	0	N	N	N	0	0	0	N
	8.E	N	N	N	N/A	N	N	N	N	N	N	0	N	N	N	N	N	N	N	N	0	N	N	N	0	0	0	N
	8.F	**Y**	N	N	N/A	N	N	N	N	N	N	0	N	N	N	N	N	N	N	N	0	N	N	N	0	0	0	N
	8.G	N	N	N	N/A	N	N	N	N	N	N	0	N	N	N	N	N	N	N	N	0	N	N	N	0	0	0	N
	8.H	N	**Y**	N	N/A	N	**Y**	N	N	N	N	0	N	N	**N**	**Y**	N	N	**Y**	N	0	N	N	N	0	0	0	N
	8.I	**Y**	N	N	N/A	N	**Y**	**Y**	N	N	N	0	N	N	N	N	N	N	N	N	0	N	N	N	0	0	0	N
	8.J	N	N	N	N/A	N	N	N	N	**Y**	N	0	N	N	**Y**	N	N	N	N	**Y**	0	N	N	N	0	0	0	N
	8.K	**Y**	**Y**	**Y**	N/A	**Y**	N	**Y**	**Y**	**Y**	**Y**	0	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	0	**Y**	**Y**	**Y**	0	0	0	**Y**
	8.L	N	N	N	N/A	N	N	N	N	N	N	0	N	N	N	N	N	N	N	N	0	N	N	N	0	0	0	N
	8.M	N	N	N	N/A	N	N	N	N	N	N	0	N	N	N	N	N	N	N	N	0	N	N	N	0	0	0	N
	8.N	N	N	N	N/A	N	N	N	N	N	N	0	N	N	N	N	N	N	N	N	0	N	N	N	0	0	0	N
	8.O	N	**Y**	**Y**	N/A	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	0	N	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	N	0	N	**Y**	**Y**	0	0	0	**Y**
Reduce the possibility of damage and losses due to ice jams	9.A	N	N/A	N/A	0	N/A	N/A	N	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N	N/A	N	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	N
	9.B	N	N/A	N/A	0	N/A	N/A	N	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N	N/A	N	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	N
	9.C	N	N/A	N/A	0	N/A	N/A	N	N/A	N/A	N/A	N/A	N/A	N/A	N/A	**Y**	N/A	**Y**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	N
	9.D	N	N	N	0	N	N	N	N	N	N	0	N	N	N	N	N	N	N	N	0	N	N	N	0	0	0	N
Reduce the possibility of damage and losses due to earthquakes.	10.A	N	N	N	0	N	N	N	N	N	N	0	N	N	N	N	N	N	N	N	0	N	N	N	0	0	0	N
	10.B	N	N	N	0	N	N	N	N	N	N	0	N	N	N	N	N	N	N	N	0	N	N	N	0	0	0	N
	10.C	N	N	N	0	N	N	N	N	N	N	0	N	N	N	N	N	N	N	N	0	N	N	N	0	0	0	N
	10.D	N	N	N	0	N	N	N	N	N	N	0	N	N	N	N	N	N	N	N	0	N	N	N	0	0	0	N
	10.E	N	N	N	0	N	N	N	N	N	N	0	N	N	N	N	N	N	N	N	0	N	N	N	0	0	0	N
Reduce the possibility of damage and losses due	11.A	N	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N	N/A	N/A	N/A	N	N	N/A	N	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	N/A

Table 6.2
Results of Preliminary Analysis/Screening of Mitigation Actions

Mitigation Action	Action	Lewis, County of	Castorland, Village of	Constableville, Village of	*Copenhagen, Village of*	Croghan, Town of	Croghan, Village of	Denmark, Town of	Diana, Town of	Greig, Town of	Harrisburg, Town of	*Harrisville, Village of*	Lewis, Town of	Leyden, Town of	Lowville, Town of	Lowville, Village of	Lyons Falls, Village of	Lyonsdale, Town of	Martinsburg, Town of	Montague, Town of	*New Bremen, Town of*	Osceola, Town of	Pinckney, Town of	Port Leyden, Village of	*Turin, Town of*	*Turin, Village of*	*Watson, Town of*	West Turin, Town of
to landslides	11.B	**Y***	**Y***	**Y***	0	**Y***	**Y***	**Y***	**Y***	**Y***	**Y***	0	**Y***	**Y***	**Y***	**Y***	**Y***	**Y***	**Y***	**Y***	0	**Y***	**Y***	**Y***	0	0	0	**Y***
	11.C	N	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N	N/A	N/A	N/A	N	N	N/A	N	N/A	N/A	N	N/A	N/A	N/A	N/A	N/A	N/A	0	N/A
	11.D	N	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N	N/A	N/A	N/A	N	N	N/A	N	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	N/A
	11.E	N	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N	N/A	N/A	N/A	N	N	N/A	N	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	N/A
	11.F	N	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N	N/A	N/A	N/A	N	N	N/A	N	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	N/A
Reduce the possibility of damage and losses due to wildfires	12.A	**Y***	**Y***	**Y***	0	**Y***	**Y***	**Y***	**Y***	**Y***	**Y***	0	**Y***	**Y***	**Y***	**Y***	**Y***	**Y***	**Y***	**Y***	0	**Y***	**Y***	**Y***	0	0	0	**Y***
	12.B	N	N	N	0	N	N	N	N	N	N	0	N	N	N	N	N	N	N	N	0	N	N	N	0	0	0	N
	12.C	N	N	N	0	N	N	N	N	N	N	0	N	N	N	N	N	N	N	N	0	N	N	N	0	0	0	N
	12.D	**Y***	**Y***	**Y***	0	**Y***	**Y***	**Y***	**Y***	**Y***	**Y***	0	**Y***	**Y***	**Y***	**Y***	**Y***	**Y***	**Y***	**Y***	0	**Y***	**Y***	**Y***	0	0	0	**Y***
	12.E	N	N	N	0	N	N	N	N	N	N	0	N	N	N	N	N	N	N	N	0	N	N	N	0	0	0	N
	12.F	N	N	N	0	N	N	N	N	N	N	0	N	N	N	N	N	N	N	N	0	N	N	N	0	0	0	N
	12.G	N	N	N	0	N	N	N	N	N	N	0	N	N	N	N	N	N	N	N	0	N	N	N	0	0	0	N
	12.H	N	N	N	0	N	N	N	N	N	N	0	N	N	N	N	N	N	N	N	0	N	N	N	0	0	0	N
	12.I	N	N	N	0	N	N	N	N	N	N	0	N	N	N	N	N	N	N	N	0	N	N	N	0	0	0	N
	12.J	N	N	N	0	N	N	N	N	N	N	0	N	N	N	N	N	N	N	N	0	N	N	N	0	0	0	N
	12.K	N	N	N	0	N	N	N	N	N	N	0	N	N	N	N	N	N	N	N	0	N	N	N	0	0	0	N
	12.L	N	N	N	0	N	N	N	N	N	N	0	N	N	N	N	N	N	N	N	0	N	N	N	0	0	0	N
Reduce the possibility of damages to emergency and critical facilities from all hazards.	13.A	**Y***	**Y***	**Y***	0	**Y***	**Y***	**Y***	**Y***	**Y***	**Y***	0	**Y***	**Y***	**Y***	**Y***	**Y***	**Y***	**Y***	**Y***	0	**Y***	**Y***	**Y***	0	0	0	**Y***
	13.B	**Y**	**Y**	N	0	N	**Y**	N	N	N	N	0	N	N	N	**Y**	N	N	**Y**	N	0	N	N	N	0	0	0	N

SECTION 7 - ACTION ITEM EVALUATION AND PRIORITIZATION

This section includes information regarding the methodology and process followed by participating jurisdictions to evaluate and prioritize specific hazard mitigation actions for their individual communities.

The action item evaluation and prioritization was undertaken following a working session of the Core Planning Group on March 2nd, 2010 which was attended by representatives from key County Departments and 16 of the Countyôs 26 Municipalities.

The principal purpose of the working session was to impart guidance and advice regarding the evaluation and prioritization of mitigation action items, and the development of an implementation strategy for selected measures. After reviewing all the many types of possible action items suggested in Section 6 and the ñTip Sheetò compiled specifically for this stage of the planning process, each participating jurisdiction was asked to select a manageable number of action items which they considered to be appropriate for their jurisdiction and which their jurisdiction could reasonably commit to achieving in the next five years (the first plan maintenance cycle), and to evaluate these actions using worksheets developed specifically for this task. Ultimately, the County and 20 municipal jurisdictions each evaluated and identified at least two specific action items for the first plan maintenance cycle, and the results of this initial analysis are presented in Table 6.2 in the previous section.

While it was strongly emphasized at the Mitigation Strategy Working Session and in the accompanying guidance that individual jurisdictions should make every effort to identify and evaluate local mitigation actions to address as many profiled hazards as possible, the results of this exercise reflect certain considerations regarding the financial, technical, and staffing resources available to the mostly small, rural communities participating in this plan. To achieve the aim that every participating jurisdiction should include actions to address every applicable hazard, the overall mitigation strategy includes a number of mitigation actions that take the form of County-led initiatives with specific involvement and participation by each participating jurisdiction, which have been assessed separately from the specific local actions identified by each participating jurisdiction.

In total, more than 120 actions were selected by the participating jurisdictions for inclusion in the plan. In addition to the County-led actions mentioned above, some of which address combined/multiple hazards, the participating jurisdictionsô individual implementation strategies include location-specific actions that address the following individual natural hazards to some extent:

Flooding
Winter storms
Extreme cold temperatures
High Winds
Wildfire
Dam failure
Ice jams

In order to evaluate and prioritize the mitigation actions, participants identified the ***benefits*** and ***costs*** of each action using a planning concept called ñSTAPLEEò. The evaluation methodology criteria is presented below in Table 7-1, and the worksheet used for this exercise was taken from STAPLEE Method B on page 10 of FEMA guidance document 386-5 (óHow-To #5), with minor modifications. While this method was recommended for use by Lewis County by the Consultant, preparation for future updates should consider whether an alternative method for prioritizing mitigation actions is appropriate. Core

Planning Group Members who participated in this stage of the planning process were also issued with additional guidance and reference materials, which are included in Appendix D.

Table 7-1
STAPLEE Criteria

Criteria	Detailed Considerations	Sample Benefit and Cost Scenarios
S Social	• Community acceptance • Affect on segment of population	Is the action unfair to one section of the community over others? If yes, it is a social cost associated with the action. If the implementation of the action helps achieve a social goal of the community, it is a social ***benefit*** associated with the action.
T Technical	• Technical feasibility • Long-term solution • Secondary impacts	Is the action a good technical solution to the problem? If yes, it is a ***benefit*** associated with the action. The better the solution, the higher the ***benefits***.
A Administrative	• Staffing • Funding allocation • Maintenance/operations	Is the action difficult to implement because of the administrative problems associated? If yes, it is an administrative ***cost***.
P Political	• Political support • Local champion • Public support	Is the action politically favored? If yes, it is a ***benefit.*** If the action is likely to be politically unacceptable, it is a ***cost*** associated with the action.
L Legal	• State authority • Existing local authority • Potential legal challenge	Are there perceived legal problems in implementing the action? If yes, it is a ***cost*** associated with the action.
E Economic	• Benefit of action • Cost of action • Contributes to economic goals • Outside funding required	Does implementing the action make economic sense? Are the ***costs*** too prohibitive? If yes, it is a cost associated with the action.
E Environmental	• Effect on land/water • Effect on endangered species • Effect on HAZMAT/waste sites • Consistent with local environmental goals • Consistent with federal laws	Does the action have adverse environmental effects? If yes, it is a ***cost*** associated with the action.

Now using the STAPLEE factors discussed above for each action, each jurisdiction rated the overall benefits and costs of each action they had selected, and assigned priorities. To determine overall ñ*benefits*ò for a certain action, each jurisdiction considered qualitatively the individual social, technical, administrative, political, legal, economic, and environmental benefits for the action and then indicated whether the net benefits, overall, could be characterized as high, medium, or low. To determine overall ñ*costs*ò for a certain action, each jurisdiction considered qualitatively individual social, technical, administrative, political, legal, economic, and environmental costs for that action and then indicated whether the net costs, overall, could be characterized as high, medium, or low. These overall ó*benefits'* and ó*costs'* were noted on the worksheet, and the jurisdictions prioritized each action based on its overall benefits and costs.

Since a qualitative approach was taken for the evaluation and prioritization of mitigation actions, jurisdictions were permitted to apply their own internal weightings to the costs and benefits of actions under each category, hence on the completed worksheets the overall priority of an action may not reflect a straightforward arithmetic comparison of its total ñbenefitsò and total ñcostsò.

While this qualitative approach to the evaluation of benefits and costs is acceptable for mitigation actions in this mitigation plan, actions that become the subject of formal grant applications post-plan approval will require the application of a more formal quantitative benefit-cost analysis.

All action items from Table 6-1 that were considered but not selected for evaluation and prioritization effectively received a very low priority. In the future, participating jurisdictions may still seek to pursue other actions which they evaluated but did not select for prioritization at this time, including but not limited to those discussed in Section 6 (and associated studies, funding, etc. for these actions).

In addition to hazard mitigation projects, each jurisdiction was required to evaluate a set of actions specifically aimed at continuing participation in and compliance with FEMAôs National Flood Insurance Program (per FEMA guidance released in July 2008). These actions include updating floodplain management ordinances to comply with the latest FEMA regulations and adopted flood maps, additional employment/training of staff to enforce the ordinances, and participation in FEMAôs Community Rating System (CRS).

Appendix B contains the prioritization worksheets completed by each jurisdiction for their selected actions. Mitigation actions in the form of County-led initiatives requiring significant participation by individual participating jurisdictions are documented separately from the specific local actions identified and prioritized by each individual participating jurisdiction, but are also included in Appendix B. Each jurisdiction identified at least two locally-specific actions for implementation. Worksheets detailing the evaluation and prioritization of actions related to continued and enhanced compliance with the NFIP are contained in Appendix D, while Appendix E contains mitigation guidance and reference materials which were distributed to Core Planning Group members during this stage of the planning process.

Note to the reviewer: The next section in this plan, entitled "Implementation Strategy" will expand upon the prioritization step by identifying the hazard addressed, if the action applies to new and/or existing assets, the primary agency responsible for action item completion, any existing local planning mechanisms through which the action item will be implemented, target date for completion, estimated cost, and funding source.

SECTION 8 - IMPLEMENTATION STRATEGY

Following the evaluation and prioritization of mitigation actions as described in Section 7, the March 2nd, 2010 Working Session participants were asked to develop an implementation strategy for the action items they selected and prioritized using worksheets developed specifically for this task.

The representatives of the County and each jurisdiction participating in the plan also addressed how the actions will be implemented and administered. For each selected and prioritized action item, participants identified the hazard addressed, whether the action applies to new and/or existing assets, the agency to be primarily responsible for execution and completion of the action item, any existing local planning mechanisms or vehicles through which the action item will be implemented, and a target timeframe for completion, an estimated cost, and potential funding sources.

While the participating jurisdictions were strongly encouraged to produce cost estimates for each action, it was recognized that at this stage in the planning process such estimates are subject to a great deal of uncertainty. Therefore for this initial version of the plan participating jurisdictions were permitted to submit implementation strategies in which estimated costs were described simply as ñLowò, ñMediumò, or ñHighò, with the range of values covering these terms approximately defined as:

Low:	$10,000 or less
Medium:	greater than $10,000 but less than $100,000
High:	$100,000 and higher

Participating jurisdictions will be encouraged to refine any approximate cost estimates during future plan updates.

All action items listed in the table in Section 6 that were considered but not selected for prioritization by a given community after considering the STAPLEE factors were assigned a very low priority and are not included in the Implementation Strategy Worksheets. In the future, the participating jurisdictions may still seek to pursue actions which they considered and evaluated but did not select for prioritization at this time, including but not limited to those discussed in Section 6 (and associated studies, funding, etc. for these actions).

After adopting this plan, participating jurisdictions will undertake the following high priority outreach actions at a minimum, as part of their plan maintenance obligation:

County Level:

- The County will continue to maintain the mitigation planning web page with an additional emphasis on public education and outreach;
- The County will maintain contact with external stakeholders mentioned in Section 1 and seek to establish relationships with any additional entities with which the County has yet to initiate mitigation planning-related dialogue;
- The County will create flyers and other outreach documents for dissemination at the annual County Fair and other public events, and also for local distribution in public buildings such as municipal offices and libraries;

Municipal Level:

- Each participating jurisdiction will add a link on their web page (if they maintain one) to the County mitigation planning web page.
- Participating jurisdictions will conduct annual interviews and/or smaller meetings with civic groups, the public and other stakeholders to obtain input on the implementation and progress on the mitigation plan and its actions. This will be accomplished through incorporating discussion of the mitigation plan into other regular meetings.
- Participating jurisdictions will consider regular flyers, newsletters, newspaper advertisements, and Radio/TV announcements, and will implement some or all of the above at the discretion of the jurisdiction.
- Core planning Group representatives will consider additional opportunities to publicize the plan though in-person methods. These will be tailored to the community but at a minimum should include regular discussions of the plan at town/village board meetings, planning and zoning meetings, and other venues or occasions as appropriate.

Appendix C contains completed worksheets detailing implementation strategies covering all selected and prioritized mitigation actions. Mitigation actions in the form of County-led initiatives requiring significant participation by individual participating jurisdictions are documented separately from the specific local actions identified by each individual participating jurisdiction, but are also included in Appendix C. Appendix D contains documentation of the implementation strategies for actions intended to continue and enhance compliance with the NFIP.

SECTION 9 - PLAN MAINTENANCE

It is required by FEMA (as per 44 CFR Part 201.6(c)(4)(i) that, ñ[The plan maintenance process shall include a section describing the] method and schedule of monitoring, evaluating, and updating the mitigation plan within a five-year cycle.ò A formal plan maintenance process must take place to ensure that the Hazard Mitigation Plan remains an active and pertinent document. Regularly scheduled evaluations during the five-year cycle are important to assess the effectiveness of the program and to reflect changes that may affect mitigation priorities.

URS Corporation (URS), as the consulting company, was able to provide the Core Planning Group with guidance on potential means to satisfy the requirement for plan maintenance procedures. However, it was the members of the Core Planning Group who were in the best position to define the process. URS submitted a Guidance Memorandum (Guidance Memorandum #2 ï Plan Maintenance Procedures) to LCFEM on February 15, 2010, to summarize FEMA requirements for plan monitoring, evaluation, and updates. It was also posted to the mitigation planning web site soon after for review by Core Planning Group members, the public, and other stakeholders.

Team members were asked to provide feedback regarding their desires for plan maintenance to LCFEM. LCFEM, in turn, worked with the Consultant to develop this mitigation strategy to best reflect expressed preferences. The information presented below represents these decisions, as provided to URS through LCFEM. These methods will ensure that regular review and updating of the Hazard Mitigation Plan will occur.

Mr. James Martin, Director of the LCFEM, who was identified as Coordinator for this mitigation planning project, will oversee the overall plan maintenance process. LCFEM will take the lead on plan monitoring and evaluation steps (with help from the rest of the County Mitigation Planning Jurisdictional Assessment Team), and the Countyôs Department of Planning will take the lead on any required plan updates (with help from Mr. Martin and the rest of the County Mitigation Planning Jurisdictional Assessment Team).

Monitoring the Plan

An important step in any mitigation planning process is to document the method by which the Core Planning Group will monitor the Hazard Mitigation Plan throughout the five-year period of record.

First, to accomplish this objective, the Core Planning Group has elected to prepare Annual Work Progress Monitoring Reports, prepared by entities responsible for implementing mitigation actions (as identified in the Mitigation Strategy). Progress Monitoring Reports shall be submitted by Core Planning Group members on an annual basis to LCFEM, beginning one year from the date of FEMAôs approval of the Final plan. Work progress reports shall be the FEMA How-To #4 (FEMA 386-4), Worksheet #1, Progress Report and will contain the key performance indicators identified in that document. Using the FEMA Progress Reports will answer the following questions:

- the hazard mitigation action(s) that the agency is responsible for
- the supporting agencies/entities responsible for implementation;
- a delineation of the various stages of work along with timelines (milestones should be included);
- whether the resources needed for implementation, funding, staff time and technical assistance are available, or if other arrangements must be made to obtain them;
- the types of permits or approvals necessary to implement the action;

- details on the ways the actions will be accomplished within the organization;
- whether the duties will be assigned to agency staff or contracted out;
- the current status of the project; and
- identifying any issues that may hinder implementation.

On a case-by-case basis, LCFEM will determine if site visits, phone calls, and/or meetings would be beneficial to supplement Annual Work Progress Monitoring Reports. If so, LCFEM will initiate the site visits/calls/meetings as applicable.

Evaluating the Plan

Post adoption, a mitigation plan should be evaluated on a regular basis in order to assess the effectiveness of the planôs implementation and to reflect changes that may affect the mitigation priorities.

To accomplish this objective, the Core Planning Group will convene once per year for an Annual Plan Evaluation Meeting. Plan Evaluation Meetings will be conducted within three months after each annual batch of Progress Reports are due (see ñMonitoringò, above). At each Plan Evaluation Meeting, the Core Planning Group will review Progress Reports, and use the following criteria to evaluate the plan

- do the goals and objectives address current and expected conditions?
- has the nature and magnitude of risks changed?
- are the current resources appropriate for implementing the plan?
- are there any implementation problems (such as technical, political and/or legal), or coordination issues with the other agencies and/or Committee members?
- have the outcomes occurred as expected?
- have the agencies and other Committee partners participated as proposed?
- where shortcomings are identified, what can be done to bring things back on track?
- what additional data has been collected and can any formal or informal data collection opportunities be identified in advance of the formal update?
- have additional opportunities for public outreach and feedback been identified and exploited?

Following each Annual Plan Evaluation Meeting, the LCFEM will prepare meeting minutes summarizing the outcome of the evaluation meeting. LCFEM will distribute meeting minutes to Core Planning Group members via email, and will post meeting minutes on the web site. While the Annual Plan Evaluation Meetings will be primarily intended for the representatives of participating jurisdictions, the LCFEM will also invite the six non-participating jurisdictions to send representatives to attend these meetings as observers, with a view to encouraging these jurisdictions to formally join the plan at the next update.

Updating the Plan

As part of the process to maintain FEMA mitigation funding eligibility, a plan update must always be submitted to NYSEMO/FEMA for their review. This must occur within five years of the planôs approval by FEMA (and during subsequent five-year cycles thereafter).

To accomplish this objective, LCFEM will take the lead on Plan updates, with support from the Core Planning Group members and the County Planning Department. LCFEM will conduct Update Appraisals. During the Update Appraisal, LCFEM will evaluate the current Plan, Annual Progress Reports, and Annual Plan Evaluation Meeting Minutes. LCFEM will conduct the Update Appraisals at

3.5 years from the date of FEMAôs approval of the Final plan, and at the same point in time during subsequent five-year windows (i.e., from the date of FEMAôs approval of the final plan, Update Appraisals will occur at Year 3.5, Year 8.5, Year 13.5, etc.). The Planning Group has selected Year 3.5 as the point for the Update Appraisals to ensure that sufficient time (18 months) will be available to update the document within the five year cycle, receive FEMAôs re-approval, and for local jurisdictions to formally adopt the updated plan.

The plan update will not only involve a comprehensive review and evaluation of each section of the plan, but also a discussion of the results of evaluation and monitoring activities detailed in the Plan Maintenance section of the previously approved plan. Plan updates may validate the information in the previously approved plan, or may involve a major plan rewrite. A plan update cannot be an annex referring to the previously approved plan; it must stand on its own as a complete and current plan.

Other criteria that will be considered during the update include:

- if changing situations have modified goals/objectives/actions and/or hazards;
- if additional information has become available to perform more accurate vulnerability assessments;
- if there are specific actions that can be added to the mitigation strategy that will result in additional data becoming available to improve the vulnerability assessments for future updates;
- if it is determined that participating jurisdictions wish to be added to and/or removed from the Plan;
- if it is determined that the Plan no longer addresses current and expected future conditions.
- if the current methodology for evaluating and prioritizing mitigation actions remains suitable and whether it would be appropriate to select an alternative methodology from those laid out in FEMA 386-5.

At the time of the update, LCFEM shall consult with FEMA for the latest Guidance in place regarding plan updates to ensure that the latest criteria are addressed in the update process.

LCFEM will prepare an updated plan, and circulate it to Core Planning Group members via email for their review and comment. Comments will be due back to LCFEM within 14 days; lack of response will be assumed to indicate concurrence with the LCFEM appraisal. Comments received which cannot be resolved remotely will trigger an Update Resolution Meeting of the Core Planning Group to resolve differences and develop a joint determination on how to modify the document.

Any plan updates will be released for public review and comment. The updated plan will be posted on the County web site, and made available in hard copy at the LCFEM offices. Notification to the public will also be issued to this same effect, and interested parties will be given 30 days to provide comments to LCFEM.

Public Participation in Plan Maintenance

As per 44 CFR Part 201.6 (c)(4)(iii) states, ñ[The plan maintenance process shall include a] discussion on how the community will continue public participation in the plan maintenance process.ò To meet this requirement, the new Hazard Mitigation Plan should describe what opportunities the public will have during the planôs periodic review to comment on the progress made to date and on any proposed plan revisions.

The following array of activities was selected by LCFEM based on feedback received from Core Planning Group members.

- LCFEM will continue to maintain the mitigation planning website and document repositories.
- Each participating jurisdiction will add a link on their jurisdictionôs web page to the County mitigation planning website, if they have not already done so as part of the plan development process.
- LCFEM will lead efforts to prepare an annual fact sheet on the plan. This fact sheet will be submitted via email to Core Planning Group members for posting on community notice boards, at a minimum, and preferable supplemented with distribution at meetings as applicable. LCFEM will post the fact sheet on the county mitigation plan web site.
- LCFEM will lead efforts to prepare a survey for the public and other stake holders which will be posted on the County mitigation planning web site and in document repositories. Survey forms will be shared with participating jurisdictions for their use, as well. All feedback will be directed to LCFEM as a central location. Survey feedback will be a topic of discussion at Annual Plan Evaluation Meetings.
- Participating jurisdictions will conduct annual interviews and/or smaller meetings with civic groups, the public and other stakeholders. This will be accomplished through incorporating discussion of the mitigation plan into other regularly attended meetings.
- Participating jurisdictions will consider annual flyers, newsletters, newspaper advertisements, and Radio/TV announcements, and will implement some or all of the above at the discretion of the jurisdiction.
- Participating jurisdictions will consider offering working groups by topic area (such as land use, hazard, mitigation action, etc.) if deemed necessary based upon feedback obtained during the plan maintenance cycles.
- Participating jurisdictions will each conduct an annual town hall meeting on the progress of the mitigation plan. This could be its own, separate meeting, or incorporated into another regularly scheduled meeting.

Plan Integration

As per 44 CFR Part 201.6(c)(4)(ii), ñ[The plan shall include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms such as comprehensive or capital improvement plans, when appropriate.ò

URS Corporation (URS), as the consulting company, was able to provide the Planning Group with guidance on potential means to satisfy the requirement for plan integration procedures. However, it was the members of the Core Planning Group who were in the best position to define the process. URS submitted a Guidance Memorandum (Guidance Memorandum #3 ï Plan Integration) to LCFEM on February 15, 2010, to summarize FEMA requirements for integrating the plan into other local planning mechanisms. It was also posted to the mitigation planning web site soon after for review by Core Planning Group members, the public, and other stakeholders.

Team members were asked to provide feedback regarding their desires for plan integration to LCFEM. LCFEM, in turn, worked with the Consultant to develop this mitigation strategy to best reflect expressed preferences. The information presented below represents these decisions, as provided to URS through LCFEM. These methods will ensure that regular integration of the Hazard Mitigation Plan will occur.

LCFEM, with input from URS and the Core Planning Group member feedback, noted the following capabilities in relation to mitigation planning and opportunities to integrate the mitigation plan into daily activities. Progress with regard to Plan Integration will be on the agenda for each Annual Plan Evaluation Meetings.

Participating jurisdictions currently use comprehensive land use planning, capital improvements planning and building codes to guide and control development. After the Hazard Mitigation Plan is formally adopted, these existing mechanisms will have hazard mitigation strategies integrated into them, as follows:

- Within six months after adoption of the Hazard Mitigation Plan, Core Planning Group members for each participating jurisdiction will issue a letter to each of its communityôs department heads to solicit their support and explore opportunities for integrating hazard mitigation planning objectives into their daily activities. Specifically, letters can include:
  - Some participating jurisdictions have Master Plans, General or Comprehensive Plans. In participating jurisdictions where Master Plans, General or Comprehensive Plans exist, Core Planning Group members will work with their respective planning departments to educate them on the Hazard Mitigation Plan and encourage that on the next updates of such plans, hazard mitigation for natural hazards is addressed.
  - Many participating jurisdictions have local building departments responsible for building code enforcement and review of site plans. Local jurisdictions enforce the state-adopted IBC. In these communities, Core Planning Group Members will coordinate with their respective building departments to ensure that they have adopted and are enforcing the minimum standards established in the State-adopted IBC.
  - Many participating jurisdictions participate in FEMAôs National Flood Insurance Program and as such have local floodplain management ordinances. In these communities, Core Planning Group Members can coordinate with their respective Floodplain Administrator to determine if enforcement beyond FEMA minimum requirements would be prudent for the community.
  - In participating jurisdictions with local zoning ordinances, Core Planning Group members will work with their zoning boards to educate them on the Hazard Mitigation Plan and encourage consideration of low occupancy, low-density zoning in hazard areas, when practicable.

- Participating jurisdictions will consider working with their department or agency heads to revise job descriptions of government staff to include mitigation-related duties to further institutionalize hazard mitigation. This change would not necessarily result in great financial expenditures or programmatic changes. For example, the How-To presents the following language which could be considered for adding into job descriptions for a community planner, floodplain manager, emergency manager, building code official, or water resources engineer in the Public Works Department:

Knowledge, Skills and Abilities

Knowledge. Knowledge of the principles of emergency management, specifically hazard mitigation. Knowledge of the principles and practices of sustainable development and how it is incorporated into hazard mitigation planning. Knowledge of FEMAôs pre- and post-disaster mitigation programs, as well as other federal agency programs (HUD, EPA, SBA) that provide technical and/or financial assistance for implementing pre- or post-disaster mitigation planning. Knowledge of private/non-governmental programs that can support reconstruction and mitigation strategies.

Skills. Consensus building and team building, communication (verbal and written), and interpersonal skills.

Abilities. Ability to apply planning principles and tools to the goals of hazard loss reduction.

- Instead of solely relying on funding from hazard mitigation programs or other external sources of grant monies, participating jurisdictions will consider a line item for mitigation project funding in their capital or operational budgets. Having a line item in these budgets may not guarantee funding every year, but it is certainly easier to get the money allocated if it is already there. Examples include:
  - A revolving fund to finance a buyout program.
  - A low-interest loan program to fund retrofits.

- Participating jurisdictions with comprehensive plans will add a hazard element to their plan as one of the most effective mechanisms to institutionalize hazard mitigation for new construction. A primary benefit of combining these processes is that they both influence the location, type, and characteristics of physical growth, specifically buildings and infrastructure. While planning in and of itself may not be regulatory, it uses regulatory mechanisms (zoning, development ordinances, etc.) for implementing goals and objectives. Additionally, in many parts of the country, the comprehensive planning process is an established activity that is already familiar to the public, and it usually generates a great deal of interest and public participation.

Examples of using existing resources to accomplish mitigation, as excerpted from FEMAôs How-To #4, include:

- Core Planning Group members will work with their local Department of Public Works to adopt more rigorous procedures for inspecting and cleaning debris from streams, ditches, and storm drain systems. For example, instead of cleaning only after storms or complaints from citizens, or on an annual basis, the Department could require inspections of streams and ditches at least twice per year and after a significant rain event.
- Participating jurisdictions will seek to add hazard vulnerability to subdivision and site plan review criteria and incorporate any necessary actions at the planning stage.
- LCFEM will seek to identify a community conservation society or other interested voluntary organization which could perform inventories of historic sites in hazard areas that might require special treatment to protect them from specific hazards.
- Nonprofit organizations, community associations and businesses can assist the planning team in a number of ways, by including lending expertise, discounted materials, staff or volunteer time, or meeting space. The planning team can in response offer these entities opportunities for greater public exposure and thus, greater recognition. The planning team can inform partners about the hazards they potentially face, the ways they can mitigate these hazards, and how their staff can mitigate hazards at home. Participating jurisdictions will reach out to partner groups in their communities to identify those who may be willing to donate goods or services and create a database of contact information and indicated goods/services.
- Citizens have an ongoing role to play in project implementation. The planning team should actively seek volunteers to help implement programs and activities. Knowledgeable citizens can also be recruited to provide expertise in specific subject areas. The more the team involves people in implementing the plan, the greater the support it will receive.
- State agencies can lend their time, expertise and funds to the implementation of hazard mitigation projects. LCFEM will make sure the planning teamôs list of state contacts is very broad, as the

resources of one state agency may be unknown to another. LCFEM will assist participating jurisdictions in reaching out to state agencies for support.

- Schools, Colleges and universities can provide technical expertise to projects that may require Geographic Information System (GIS), engineering, planning or other technical assistance. They can also provide meeting space, laboratories and other logistical support. LCFEM will assist participating jurisdictions in reaching out to educational institutions for support.
- Community libraries are an excellent source of information and services, including volunteers. Participating jurisdictions will meet once each five years with their local library staff members to discuss the mitigation plan so they are well-versed in its purpose and understand where to direct interested parties for more information, to provide feedback, or to become involved.

SECTION 10 - FOR MORE INFORMATION

If you have any questions or comments on the Lewis County Hazard Mitigation Plan, additional information can be obtained by contacting:

James Martin
Director,
Lewis County Fire and Emergency Management
5252 Outer Stowe Street
P.O. Box 233
Lowville,
New York 13367
Phone: 315 376 5234
Fax: 315 376 5293
E-Mail: jmartin@lewiscountny.org

APPENDIX A –

DETAILED TABLES: IMPROVED PROPERTY IN DELINEATED HAZARD AREAS

Appendix A contains detailed tables presenting the numbers of parcels wholly or partially within delineated hazard areas (i.e. for those identified hazards for which the occurrence or impact is not considered to apply uniformly across the whole county) and associated improved property values broken down by land use and development type.

Affected improvement values have been calculated on a pro-rata basis: the value of improvements exposed to a hazard on any parcel is assumed to be proportional to the percentage of the parcel area covered by the hazard zone. It should be noted that this method will result in inflated parcel counts where a parcel is covered by more than one unique hazard zone.

Delineated hazards presented in this Appendix:

Flooding
Earthquake (Combined Seismic Hazard/Surficial Soil Type)
Wildfire

Flood **Parcels and Improved Property Value Affected by Estimated 1% Annual Chance Floodplain**

Municipality	Agricultural		Community Services/Institutional		General Business/Commercial		Industrial		Not Yet Classified	
	Improved Value	Improved Parcels	Improved Value	Improved Parcels	Improved Value	Improved Parcels	Improved Value	Improved Parcels	Improved Value	Improved Parcels
Castorland	$0	0	$0	0	$0	0	$0	0	$0	0
Constableville	$21,409	1	$19	1	$0	0	$8,818	1	$329,723	9
Copenhagen	*$0*	*0*	*$0*	*0*	*$0*	*0*	*$0*	*0*	*$0*	*0*
Croghan (Town)	$538,440	40	$1,148,332	8	$170,514	5	$2,410,080	5	$119,508	2
Croghan (Village)	$88,328	2	$0	0	$101,502	1	$788,290	4	$0	0
Denmark	$556,907	29	$0	0	$47,607	2	$29	1	$0	0
Diana	$3,765	1	$2,823	3	$61,683	1	$3,046	1	$0	0
Greig	$55,393	5	$5,209	1	$9,330	1	$0	0	$192,581	2
Harrisburg	$0	0	$0	0	$0	0	$0	0	$0	0
Harrisville	*$0*	*0*	*$0*	*0*	*$101,503*	*5*	*$10,799*	*1*	*$0*	*0*
Lewis (Town)	$1,451	2	$178,575	5	$57,872	4	$758	1	$0	1
Leyden	$85,295	19	$0	0	$448	1	$92,092	2	$0	0
Lowville (Town)	$453,097	44	$12,441	3	$0	0	$16,843	1	$0	0
Lowville (Village)	$0	0	$7,812	1	$51,993	6	$8,349	3	$17,131	1
Lyons Falls	$0	0	$0	0	$0	0	$0	0	$2,601,650	17
Lyonsdale	$54,916	1	$1,233	2	$0	0	$863,200	1	$0	0
Martinsburg	$98,837	16	$4,404	4	$5,034	3	$390	2	$0	0
Montague	$0	0	$0	0	$0	0	$0	0	$0	0
New Bremen	*$47,776*	*22*	*$1,216*	*1*	*$11,225*	*4*	*$171,701*	*4*	*$0*	*0*
Osceola	$0	0	$0	0	$0	0	$0	0	$0	0
Pinckney	$0	0	$0	0	$0	0	$0	0	$0	0
Port Leyden	$0	0	$3,271	1	$0	0	$0	0	$0	0
Turin (Town)	*$22,095*	*9*	*$0*	*0*	*$0*	*0*	*$0*	*0*	*$0*	*0*
Turin (Village)	*$21,404*	*3*	*$23,921*	*1*	*$0*	*0*	*$2,111*	*1*	*$0*	*0*
Watson	*$5,303*	*5*	*$33,594*	*3*	*$13,020*	*2*	*$0*	*0*	*$6,118*	*6*
West Turin	$0	0	$0	0	$0	0	$0	0	$133	2
Totals	**$2,067,481**	**202**	**$1,433,734**	**35**	**$647,511**	**38**	**$4,542,431**	**29**	**$3,266,844**	**40**

Flood **Parcels and Improved Property Value Affected by Estimated 1% Annual Chance Floodplain**

Municipality	Parks/Open Space		Residential		Utilities		Vacant		Totals	
	Improved Value	Improved Parcels	Improved Value	Improved Parcels	Improved Value	Improved Parcels	Improved Value	Improved Parcels	Improved Value	Improved Parcels
Castorland	$0	0	$0	0	$0	0	$0	0	$0	0
Constableville	$0	0	$89,035	9	$21,927	1	$0	0	$470,931	22
Copenhagen	*$0*	*0*	*$0*	*0*	*$0*	*0*	*$0*	*0*	*$0*	*0*
Croghan (Town)	$656,704	53	$8,005,411	266	$24,371,397	6	$84,397,801	11	$121,818,187	396
Croghan (Village)	$0	0	$1,613,184	18	$4,527	4	$0	0	$2,595,831	29
Denmark	$163,886	2	$1,280,941	57	$817,201	3	$9,993	4	$2,876,564	98
Diana	$137,822	39	$4,250,216	324	$84,986	4	$24,499	18	$4,568,841	391
Greig	$27,822	14	$8,937,129	464	$23,829	1	$96,286	10	$9,347,578	498
Harrisburg	$0	0	$4	2	$0	0	$0	0	$4	2
Harrisville	*$0*	*0*	*$288,183*	*28*	*$341,294*	*3*	*$45*	*1*	*$741,824*	*38*
Lewis (Town)	$757	1	$527,567	63	$5,142,568	2	$6,337	11	$5,915,886	90
Leyden	$0	0	$1,075,852	73	$855,255	6	$8,019	5	$2,116,961	106
Lowville (Town)	$11,467	1	$535,562	62	$7,501	5	$11,202	3	$1,048,111	119
Lowville (Village)	$0	0	$166,633	41	$57,524	3	$9,792	4	$319,234	59
Lyons Falls	$0	0	$19,101	3	$0	0	$9,372	1	$2,630,123	21
Lyonsdale	$6,237	7	$514,684	29	$11,139,771	7	$45,357	25	$12,625,399	72
Martinsburg	$0	0	$56,042	44	$25,085	1	$0	0	$189,792	70
Montague	$0	0	$0	0	$0	0	$0	0	$0	0
New Bremen	*$1,088*	*7*	*$279,584*	*156*	*$3,268*	*2*	*$4,373*	*8*	*$520,232*	*204*
Osceola	$12,736	9	$179,260	25	$0	0	$0	0	$191,996	34
Pinckney	$0	0	$0	0	$0	0	$0	0	$0	0
Port Leyden	$0	0	$164,181	11	$572,496	3	$67	1	$740,014	16
Turin (Town)	*$0*	*0*	*$230,803*	*14*	*$0*	*0*	*$0*	*0*	*$252,898*	*23*
Turin (Village)	*$0*	*0*	*$382,630*	*30*	*$0*	*0*	*$0*	*0*	*$430,066*	*35*
Watson	*$1,728*	*11*	*$395,878*	*243*	*$257,766*	*5*	*$4,391*	*20*	*$717,798*	*295*
West Turin	$0	0	$2,557	1	$0	0	$0	0	$2,690	3
Totals	**$1,020,246**	**144**	**$29,010,935**	**1964**	**$43,733,574**	**58**	**$84,629,036**	**124**	**$170,351,792**	**2,634**

Earthquake **Parcels and Improved Property Value Affected by Spectral Accelaration Probability Bands**

Municipality	SA (%g)	Agricultural		Community Services/Institutional		General Business/Commercial		Industrial		Not Yet Classified	
		Improved Value	Improved Parcels	Improved Value	Improved Parcels	Improved Value	Improved Parcels	Improved Value	Improved Parcels	Improved Value	Improved Parcels
Castorland	65 - 75	$53,034	2	$236,444	4	$210,738	5	$485,000	1	$0	0
Constableville	65 - 75	$67,951	2	$39,836	2	$217,722	3	$0	0	$1,046,886	22
Copenhagen	*25 - 35*	*$534,560*	*7*	*$10,465,100*	*11*	*$1,043,700*	*12*	*$175,400*	*1*	*$0*	*0*
Croghan (Town)	35 - 45	$382,771	14	$0	0	$34,718	1	$0	0	$0	0
	45 - 55	$3,190,456	76	$1,101,292	10	$358,122	9	$3,740,600	7	$0	0
	55 - 65	$0	0	$0	0	$0	0	$0	0	$0	0
	65 - 75	$351,080	23	$1,204,563	4	$0	0	$0	0	$110,415	1
	75 - 94	$22,955	1	$44,816	1	$73,653	1	$0	0	$0	0
Croghan (Village)	35 - 45	$1,534	1	$0	0	$0	0	$0	0	$0	0
	45 - 55	$869,547	7	$1,934,734	4	$7,491,721	26	$4,596,915	10	$0	0
Denmark	45 - 55	$348,659	6	$0	0	$99,542	3	$1,399,800	2	$0	0
	65 - 75	$1,488,933	27	$111,023	2	$422,358	4	$203,700	1	$0	0
Diana	35 - 45	$15,200	1	$119,261	3	$114,294	3	$170,047	3	$0	0
	45 - 55	$0	0	$3,500	1	$129,011	2	$11,772	1	$0	0
	55 - 65	$0	0	$65,739	3	$289,300	4	$64,000	1	$0	0
	65 - 75	$0	1	$0	0	$0	0	$0	0	$0	0
	75 - 94	$6,006	1	$19,800	1	$75,945	1	$0	0	$0	0
Greig	35 - 45	$39,905	1	$28,400	1	$503,300	5	$0	0	$1,754,500	3
	45 - 55	$21,876	1	$0	0	$0	0	$0	0	$0	0
	65 - 75	$189,045	7	$0	0	$20,000	1	$0	0	$48,000	1
Harrisburg	65 - 75	$41,733	4	$0	0	$0	0	$0	0	$0	0
Harrisville	*35 - 45*	*$0*	*0*	*$0*	*0*	*$0*	*0*	*$42,995*	*1*	*$0*	*0*
	45 - 55	*$0*	*0*	*$1,746,922*	*3*	*$61,200*	*1*	*$1,098,785*	*3*	*$0*	*0*
	55 - 65	*$0*	*0*	*$872,878*	*12*	*$893,200*	*16*	*$55,800*	*1*	*$0*	*0*
Lewis (Town)	35 - 45	$25,928	1	$0	0	$0	0	$0	0	$0	0
	55 - 65	$3,620	3	$0	0	$0	0	$0	0	$0	0
Leyden	35 - 45	$62,764	6	$0	0	$0	0	$0	0	$0	0
	65 - 75	$175,906	17	$0	0	$31,702	1	$82,266	2	$0	0
Lowville (Town)	35 - 45	$3,123	1	$82,526	1	$56,555	1	$0	0	$0	0
	45 - 55	$9,608	2	$0	0	$0	0	$0	0	$0	0
	65 - 75	$539,796	24	$138,586	1	$211,172	5	$0	0	$0	0

Earthquake **Parcels and Improved Property Value Affected by Spectral Accelaration Probability Bands**

Municipality	SA (%g)	Agricultural		Community Services/Institutional		General Business/Commercial		Industrial		Not Yet Classified	
		Improved Value	Improved Parcels	Improved Value	Improved Parcels	Improved Value	Improved Parcels	Improved Value	Improved Parcels	Improved Value	Improved Parcels
Lowville (Village)	65 - 75	$0	0	$0	0	$0	0	$0	0	$0	0
Lyons Falls	35 - 45	$0	0	$0	0	$1,592,850	1	$158,670	2	$660,328	1
	65 - 75	$0	0	$170,024	3	$658,911	6	$0	0	$4,881,336	23
Lyonsdale	35 - 45	$0	0	$1,333	1	$0	0	$129,800	1	$0	0
	65 - 75	$156,400	1	$20,598	3	$0	0	$0	0	$0	0
Martinsburg	35 - 45	$5,617	9	$0	0	$0	0	$0	0	$0	0
	45 - 55	$1,499	2	$0	0	$0	0	$0	0	$0	0
	65 - 75	$32,880	9	$0	0	$6,365	3	$0	0	$0	0
Montague	35 - 45	$0	0	$0	0	$0	0	$0	0	$0	0
	55 - 65	$0	0	$0	0	$0	0	$0	0	$0	0
	65 - 75	$0	0	$0	0	$0	0	$0	0	$0	0
New Bremen	*35 - 45*	*$37,078*	*10*	*$29,800*	*1*	*$0*	*0*	*$29,899*	*1*	*$0*	*0*
	45 - 55	*$262,457*	*45*	*$885,738*	*12*	*$142,299*	*18*	*$232,281*	*8*	*$0*	*0*
	65 - 75	*$114,035*	*20*	*$0*	*0*	*$0*	*0*	*$60,700*	*1*	*$0*	*0*
Osceola	35 - 45	$0	0	$0	0	$0	0	$0	0	$0	0
	55 - 65	$0	0	$0	0	$0	0	$0	0	$0	0
Pinckney	55 - 65	$0	0	$0	0	$0	0	$0	0	$0	0
	65 - 75	$1,541	1	$0	0	$0	0	$0	0	$40,915	2
Port Leyden	35 - 45	$0	0	$0	0	$0	0	$0	0	$0	0
	65 - 75	$0	0	$51,026	2	$0	0	$0	0	$0	0
Turin	*35 - 45*	*$376,554*	*13*	*$11,381*	*1*	*$404,422*	*7*	*$0*	*0*	*$0*	*0*
	65 - 75	*$18,461*	*4*	*$0*	*0*	*$60,300*	*1*	*$0*	*0*	*$0*	*0*
Turin (Village)	*35 - 45*	*$6,502*	*1*	*$0*	*0*	*$0*	*0*	*$0*	*0*	*$0*	*0*
Watson	*35 - 45*	*$0*	*0*	*$20,254*	*1*	*$0*	*0*	*$0*	*0*	*$5,500*	*3*
	45 - 55	*$25,384*	*4*	*$82,525*	*5*	*$0*	*0*	*$4,404*	*2*	*$18,880*	*3*
	55 - 65	*$0*	*0*	*$0*	*0*	*$0*	*0*	*$0*	*0*	*$0*	*0*
	65 - 75	*$20,516*	*8*	*$6,020*	*3*	*$43,850*	*5*	*$0*	*0*	*$12,423*	*6*
West Turin	35 - 45	$86,237	2	$0	0	$0	0	$0	0	$64,396	2
	55 - 65	$0	0	$0	0	$0	0	$0	0	$0	0
	65 - 75	$138,311	7	$0	0	$0	0	$0	0	$21,961	3
Totals		**$45,789,560**	**1,283**	**$67,100,738**	**238**	**$31,587,270**	**411**	**$24,853,781**	**108**	**$16,692,238**	**300**

Earthquake

Municipality	SA (%g)	Parks/Open Space		Residential		Utilities		Vacant		Totals	
		Improved Value	Improved Parcels	Improved Value	Improved Parcels	Improved Value	Improved Parcels	Improved Value	Improved Parcels	Improved Value	Improved Parcels
Castorland	65 - 75	$6,073	1	$539,793	31	$23,588	3	$5,000	4	$1,559,671	51
Constableville	65 - 75	$0	0	$853,597	20	$61,668	1	$9,879	2	$2,297,539	52
Copenhagen	*25 - 35*	*$1,000*	*1*	*$13,221,600*	*201*	*$314,900*	*3*	*$120,050*	*5*	*$25,876,310*	*241*
Croghan (Town)	35 - 45	$603,810	50	$4,305,422	135	$1,117,754	6	$6,495	2	$6,450,970	208
	45 - 55	$552,690	54	$32,246,549	611	$3,523,923	6	$111,101,399	17	$155,815,032	790
	55 - 65	$404,780	7	$200,778	7	$0	0	$0	0	$605,557	14
	65 - 75	$8,156	2	$4,538,158	118	$9,263,984	3	$87,942	3	$15,564,298	154
	75 - 94	$33,255	14	$1,663,865	58	$19,545,734	6	$0	0	$21,384,278	81
Croghan (Village)	35 - 45	$16,764	3	$257,423	14	$0	0	$0	0	$275,721	18
	45 - 55	$0	0	$32,542,670	195	$627,051	5	$185,145	8	$48,247,782	255
Denmark	45 - 55	$0	0	$1,601,261	38	$0	0	$0	0	$3,449,262	49
	65 - 75	$450,721	3	$3,551,108	103	$296,000	2	$12,100	5	$6,535,943	147
Diana	35 - 45	$618,560	65	$11,435,663	412	$408,209	9	$128,773	31	$13,010,007	527
	45 - 55	$76,415	9	$3,076,822	137	$137,809	8	$17,499	7	$3,452,828	165
	55 - 65	$150,254	26	$3,178,910	135	$7,705	2	$19,673	6	$3,775,581	177
	65 - 75	$533	1	$145,587	11	$0	0	$0	0	$146,120	13
	75 - 94	$132,973	17	$6,628,211	211	$26,197	1	$48,394	20	$6,937,527	252
Greig	35 - 45	$72,608	6	$29,892,555	578	$25,500	1	$427,746	18	$32,744,514	613
	45 - 55	$0	0	$61,504	8	$0	0	$0	0	$83,380	9
	65 - 75	$39,233	7	$2,932,590	144	$0	0	$59,871	6	$3,288,739	166
Harrisburg	65 - 75	$0	0	$291,720	14	$0	0	$0	0	$333,452	18
Harrisville	*35 - 45*	*$0*	*0*	*$279,341*	*17*	*$12,321*	*1*	*$1,286*	*1*	*$335,942*	*20*
	45 - 55	*$0*	*0*	*$1,137,385*	*50*	*$323,369*	*2*	*$7,601*	*7*	*$4,375,261*	*66*
	55 - 65	*$1,300*	*1*	*$5,761,223*	*195*	*$502,209*	*4*	*$14,314*	*7*	*$8,100,924*	*236*
Lewis (Town)	35 - 45	$5,148	3	$1,027,610	41	$8,638,708	1	$92,050	8	$9,789,444	54
	55 - 65	$28	1	$9,375	6	$0	0	$132	2	$13,155	12
Leyden	35 - 45	$0	0	$459,809	19	$0	0	$0	0	$522,573	25
	65 - 75	$0	0	$1,285,288	55	$808,340	5	$4,317	3	$2,387,819	83
Lowville (Town)	35 - 45	$0	0	$106,235	6	$0	0	$0	0	$248,439	9
	45 - 55	$0	0	$34,203	3	$0	0	$0	0	$43,812	5
	65 - 75	$19,189	1	$3,473,002	63	$306,545	7	$14,328	3	$4,702,617	104

Earthquake

Municipality	SA (%g)	Parks/Open Space		Residential		Utilities		Vacant		Totals	
		Improved Value	Improved Parcels	Improved Value	Improved Parcels	Improved Value	Improved Parcels	Improved Value	Improved Parcels	Improved Value	Improved Parcels
Lowville (Village)	65 - 75	$0	0	$0	0	$266,641	10	$0	0	$266,641	10
Lyons Falls	35 - 45	$0	0	$6,480,594	15	$0	0	$0	0	$8,892,442	19
	65 - 75	$0	0	$9,398,381	93	$5,129	1	$327,180	2	$15,440,961	128
Lyonsdale	35 - 45	$146,034	10	$3,677,821	135	$350,690	5	$40,140	14	$4,345,819	166
	65 - 75	$12,708	6	$1,709,168	42	$5,544,827	4	$40,961	8	$7,484,661	64
Martinsburg	35 - 45	$0	0	$6,790	3	$0	0	$350	1	$12,756	13
	45 - 55	$0	0	$0	0	$0	0	$0	0	$1,499	2
	65 - 75	$0	0	$100,733	54	$49,900	1	$0	1	$189,879	68
Montague	35 - 45	$179	1	$0	0	$0	0	$244	1	$423	2
	55 - 65	$0	0	$0	0	$0	0	$0	0	$0	0
	65 - 75	$5,324	2	$0	0	$0	0	$0	0	$5,324	2
New Bremen	*35 - 45*	*$9,218*	*18*	*$276,511*	*68*	*$0*	*0*	*$1,347*	*5*	*$383,852*	*103*
	45 - 55	*$51,957*	*20*	*$2,581,529*	*494*	*$188,233*	*14*	*$45,430*	*21*	*$4,389,924*	*632*
	65 - 75	*$705*	*1*	*$283,762*	*65*	*$8,522*	*1*	*$383*	*3*	*$468,107*	*91*
Osceola	35 - 45	$11,195	4	$107,972	11	$0	0	$0	0	$119,168	15
	55 - 65	$9,355	3	$210,583	14	$0	0	$0	0	$219,937	17
Pinckney	55 - 65	$0	0	$24,082	3	$0	0	$0	0	$24,082	3
	65 - 75	$0	0	$5,123	1	$0	0	$0	0	$47,578	4
Port Leyden	35 - 45	$0	0	$23,282	4	$0	0	$0	0	$23,282	4
	65 - 75	$0	0	$1,211,808	37	$846,009	3	$2,300	1	$2,111,142	43
Turin	*35 - 45*	*$90,448*	*3*	*$1,396,832*	*40*	*$0*	*0*	*$18,200*	*2*	*$2,297,837*	*66*
	65 - 75	*$0*	*0*	*$150,817*	*6*	*$0*	*0*	*$0*	*0*	*$229,578*	*11*
Turin (Village)	*35 - 45*	*$0*	*0*	*$280,686*	*7*	*$0*	*0*	*$0*	*0*	*$287,187*	*8*
Watson	*35 - 45*	*$22,214*	*18*	*$826,268*	*269*	*$135,655*	*3*	*$3,829*	*12*	*$1,013,720*	*306*
	45 - 55	*$1,197*	*11*	*$917,287*	*279*	*$32,495*	*3*	*$4,206*	*14*	*$1,086,379*	*321*
	55 - 65	*$0*	*0*	*$0*	*0*	*$0*	*0*	*$0*	*0*	*$0*	*0*
	65 - 75	*$2,003*	*7*	*$1,119,715*	*350*	*$800*	*1*	*$9,277*	*27*	*$1,214,604*	*407*
West Turin	35 - 45	$0	0	$306,266	10	$0	0	$0	0	$456,898	14
	55 - 65	$0	0	$102,813	13	$0	0	$353	1	$103,166	14
	65 - 75	$29,083	9	$310,435	15	$0	0	$112,508	2	$612,298	36
Totals		**$9,782,798**	**845**	**$385,348,095**	**12,597**	**$109,126,516**	**251**	**$122,040,207**	**843**	**$812,321,201**	**16,876**

Wildfire **Parcels and Improved Property Affected by Wildfire Hazard Zones**

Municipality	Agricultural		Community Services/Institutional		General Business/Commercial		Industrial		Not Yet Classified	
	Improved Value	Improved Parcels	Improved Value	Improved Parcels	Improved Value	Improved Parcels	Improved Value	Improved Parcels	Improved Value	Improved Parcels
Castorland	$47,506	3	$326,554	5	$3,248	2	$168,840	2	$0	0
Constableville	$62,677	2	$1,907,337	3	$164,798	6	$19,271	1	$520,630	26
Copenhagen	*$46,678*	*5*	*$1,128,726*	*3*	*$0*	*0*	*$6,834*	*1*	*$0*	*0*
Croghan	$1,846,329	79	$442,513	11	$480,487	8	$347,401	5	$8,054	2
Croghan (Village)	$30,410	4	$0	0	$24,062	1	$1,132,512	7	$0	0
Denmark	$1,791,031	104	$21,543	2	$76,963	4	$10,715	2	$2	4
Diana	$13,890	2	$132,288	4	$294,562	7	$543,500	3	$0	0
Greig	$150,835	8	$62,335	5	$412,513	7	$0	0	$1,379,963	4
Harrisburg	$2,096,503	50	$16,047	1	$128,944	2	$131,797	1	$0	0
Harrisville	*$0*	*0*	*$1,117,545*	*8*	*$155,492*	*8*	*$599,211*	*4*	*$0*	*0*
Lewis (Town)	$353,559	21	$74,095	3	$184,829	2	$9,343	1	$1	1
Leyden	$1,237,749	75	$49,563	5	$49,081	6	$174,155	6	$0	0
Lowville	$1,161,305	115	$130,429	7	$165,415	5	$77,306	6	$79,328	2
Lowville (Village)	$8,150	1	$3,485,280	6	$56,347	4	$231,744	6	$17,574	1
Lyons Falls	$0	0	$75,786	4	$1,173,123	10	$79,438	2	$1,675,631	27
Lyonsdale	$119,252	2	$142,062	5	$0	0	$30,391	1	$0	0
Martinsburg	$129,585	75	$67,828	7	$10,330	8	$14,115	2	$8,252	12
Montague	$0	0	$579	1	$110,554	2	$0	0	$170,100	14
New Bremen	*$185,169*	*55*	*$368,415*	*11*	*$48,329*	*8*	*$85,191*	*8*	*$0*	*0*
Osceola	$12,677	1	$70,059	3	$89,636	2	$0	0	$17,477	3
Pinckney	$459,264	10	$56,899	3	$12,569	1	$0	0	$875,245	26
Port Leyden	$0	0	$136,890	3	$19,385	3	$4,501	1	$3,564	2
Turin (Town)	*$1,442,263*	*65*	*$8,171,752*	*3*	*$409,694*	*11*	*$30,653*	*1*	*$0*	*0*
Turin (Village)	*$21,413*	*6*	*$15,218*	*3*	*$30,094*	*2*	*$4,490*	*1*	*$0*	*0*
Watson	*$25,052*	*9*	*$31,244*	*10*	*$27,049*	*6*	*$2,276*	*2*	*$330,016*	*33*
West Turin	$1,947,253	67	$6	1	$110,579	2	$0	0	$1,036,868	52
Totals	**$13,188,550**	**759**	**$18,030,994**	**117**	**$4,238,082**	**117**	**$3,703,685**	**63**	**$6,122,704**	**209**

Wildfire **Parcels and Improved Property Affected by Wildfire Hazard Zones**

Municipality	Parks/Open Space		Residential		Utilities		Vacant		Totals	
	Improved Value	Improved Parcels	Improved Value	Improved Parcels	Improved Value	Improved Parcels	Improved Value	Improved Parcels	Improved Value	Improved Parcels
Castorland	$0	0	$919,854	48	$6,246	3	$2,242	2	$1,474,491	65
Constableville	$0		$1,326,921	55	$25,864	1	$3,599	2	$4,031,098	96
Copenhagen	*$0*		*$1,451,874*	*54*	*$39,321*	*1*	*$506*	*1*	*$2,673,939*	*65*
Croghan	$2,152,472	127	$26,502,613	817	$30,498,749	14	$37,935,678	22	$100,214,297	1,085
Croghan (Village)	$0		$5,469,778	84	$4,440	3	$0	0	$6,661,202	99
Denmark	$689,335	7	$4,934,867	242	$676,128	7	$15,829	9	$8,216,413	381
Diana	$923,578	88	$16,758,558	772	$517,568	17	$160,844	53	$19,344,788	946
Greig	$271,893	19	$34,254,428	1,030	$137,705	2	$482,661	33	$37,152,334	1,108
Harrisburg	$0	0	$2,576,993	132	$0		$36,442	30	$4,986,725	216
Harrisville	*$1,202*	*1*	*$2,599,887*	*156*	*$388,416*	*5*	*$8,930*	*7*	*$4,870,684*	*189*
Lewis (Town)	$90,277	22	$6,884,348	301	$6,517,735	1	$168,326	32	$14,282,513	384
Leyden	$36,762	6	$5,950,850	314	$1,168,145	21	$55,324	27	$8,721,629	460
Lowville	$10,994	1	$1,064,850	138	$483,380	10	$2,865,382	5	$6,038,388	289
Lowville (Village)	$9,556	2	$2,876,523	264	$60,677	5	$17,528	8	$6,763,379	297
Lyons Falls	$0	0	$11,317,367	160	$54,150	4	$292,490	10	$14,667,986	217
Lyonsdale	$552,680	54	$9,596,524	376	$11,560,883	12	$435,201	96	$22,436,993	546
Martinsburg	$7,214	24	$225,026	273	$51,315	2	$16,190	24	$529,855	427
Montague	$313,220	57	$1,598,054	113	$0		$290,801	60	$2,483,308	247
New Bremen	*$65,673*	*41*	*$2,187,050*	*616*	*$92,613*	*15*	*$35,267*	*42*	*$3,067,706*	*796*
Osceola	$636,593	47	$6,398,534	340	$0	0	$123,731	3	$7,348,707	399
Pinckney	$7,102	1	$2,873,685	135	$1,986,453	2	$371,002	62	$6,642,220	240
Port Leyden	$38,631	3	$3,096,715	171	$265,698	4	$9,496	6	$3,574,881	193
Turin (Town)	*$558,004*	*20*	*$3,863,101*	*173*	*$130,319*	*2*	*$34,709*	*6*	*$14,640,495*	*281*
Turin (Village)	*$0*	*0*	*$951,626*	*56*	*$0*	*0*	*$1,810*	*1*	*$1,024,652*	*69*
Watson	*$33,359*	*44*	*$3,461,512*	*1,150*	*$124,918*	*6*	*$33,008*	*73*	*$4,068,434*	*1,333*
West Turin	$218,381	39	$8,049,065	369	$28,200	1	$295,566	33	$11,685,918	564
Totals	**$6,616,927**	**603**	**$167,190,604**	**8,339**	**$54,818,924**	**138**	**$43,692,564**	**647**	**$317,603,033**	**10,992**

APPENDIX B –

PARTICIPATING JURISDICTIONS MITIGATION ACTION EVALUATION AND PRIORITIZATION

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF ACTIONS

(Name of Jurisdiction) **County of Lewis**

Before completing this form, your jurisdiction should already have considered the full range of possible mitigation actions set forth in the Risk Assessment Interim Deliverable, and selected a subset of the actions that your jurisdiction would like to implement. This worksheet is intended to help you consider a range of factors to prioritize the actions that you have selected.

First, in order to prioritize the mitigation actions your jurisdiction has selected, identify the ***benefits*** and ***costs*** of each action using a FEMA planning concept called **STAPLEE**.

S	Social	Is the action unfair to one section of the community over others? If yes, it is a social cost associated with the action. If the implementation of the action helps achieve a social goal of the community, it is a social ***benefit*** associated with the action.
T	Technical	Is the action a good technical solution to the problem? If yes, it is a ***benefit*** associated with the action. The better the solution, the higher the ***benefits***.
A	Administrative	Is the action difficult to implement because of the administrative problems associated? If yes, it is an administrative ***cost***.
P	Political	Is the action politically favored? If yes, it is a ***benefit.*** If the action is likely to be politically unacceptable, it is a ***cost*** associated with the action.
L	Legal	Are there perceived legal problems in implementing the action? If yes, it is a ***cost*** associated with the action.
E	Economic	Does implementing the action make economic sense? If yes, it is a ***benefit***. If the project costs are too prohibitive, it is a ***cost.***
E	Environmental	Does the action have adverse environmental effects? If yes, it is a ***cost*** associated with the action.

After determining if something is a ótenefitô or a ócostô, use the following sliding scale to document your findings:

-	0	+
Cost (Unfavorable)	Neutral or Not Applicable	Benefit (Favorable)

Third, using the same scale, consider three factors: (1) Can the project be implemented easily?, (2) Does the project achieve multiple objectives?, and (3) Can the project be implemented quickly? If the answer is ñyesò it is a ***benefit*** and if the answer is ñnoò it is a ***cost***. If the answer is not particularly favorable or unfavorable, place a ó0ô in the cell.

Finally, using ALL factors discussed above, compare OVERALL benefits to OVERALL costs for each action (high, medium, or low). Use this comparison to assign a priority (also high, medium, or low) for each action item; i.e., a project with low benefits and high costs would be ranked as a low priority. Relative scores are assigned to each criterion for a qualitative assessment ï you do not have to tally up ñ+ósò and ñ-ósò. You may find that in your community, one or several criterion outweigh the others. (For example, even if a project gets ñ+ò scores all the way across the board except the ñLò column, you donôt have to give this a high priority. Specific legal issues might outweigh all the other benefits, and result in your assessment that the action should receive a low priority, despite its many benefits.)

Action	**"-" = cost (unfavorable)**							**"0"=neutral or not applicable**		**"+" = benefit (favorable)**	**(high, medium, or low)**		
	S	**T**	**A**	**P**	**L**	**E**	**E**	**Can be implemented easily**	**Achieves multiple objectives**	**Can be implemented quickly**	**Overall Benefits**	**Overall Costs**	**Priority**
SAMPLE MITIGATION ACTION #1 *(great project with benefits in every category, except specific legal issues that really outweigh all other project benefits)*	+	+	+	+	-	+	+	+	+	+	**Med**	**High**	**Low**
SAMPLE MITIGATION ACTION #2 *(great project, with some minor political and legal issues, neither of which outweighs the rest of the project's benefits)*	+	+	+	-	-	+	+	+	+	+	**High**	**Low**	**High**
SAMPLE MITIGATION ACTION #3 *(technically feasible and reasonable cost project which can be implemented quickly, easily, and achieves multiple objectives but has limited administrative, social, and environmental issues)*	-	+	-	**0**	**0**	+	-	+	+	+	**Medium**	**Medium**	**Medium**

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF ACTIONS

(Name of Jurisdiction) **County of Lewis**

Action	"-" = cost (unfavorable)				"0"=neutral or not applicable			"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
GIS Enhancement (2.A) Investigate expansion of hazard-related GIS capabilities via acquisition of HAZUS-MH to collect and develop more sophisticated hazard mapping and loss estimation. Use information in future plan updates. Ensure information will be available to the public and to local communities and agencies.	+	+	+	+	**0**	+	+	+	+	-	**High**	**Medium**	**Medium**
Critical Facilities Survey (13.A) Undertake a year built and level of protection survey for all critical/emergency facilities and shelters to highlight structures built before codes and standards were put in place to provide protection from natural hazards, and pursue potential mitigation opportunities to protect these sites as funding becomes available.	+	+	+	+	**0**	+	+	+	+	+	**High**	**Medium**	**Medium**
Landslide Study (11.B) Conduct surveys to determine local vulnerabilities to landslides threatening property and roads, coordinate with municipalities to limit development in these areas and develop remedial measures for existing vulnerabilities.	-	+	+	0	**0**	+	+	+	**0**	-	**Medium**	**Medium**	**Low**
Dam Safety (6.A, 6.C) Coordinate with NYSDEC and owners of all high and moderate hazard dams to work towards full compliance with applicable dam safety programs and development/updating of Emergency Action Plans including inundation mapping.	-	+	**0**	+	**0**	+	+	+	+	+	**High**	**Low**	**Medium**
Plan Review for Mitigation (1.B) Ensure that local comprehensive plans incorporate disaster mitigation techniques through a courtesy review of all draft plans by the County Economic Development and Planning Department	+	+	**0**	**0**	**0**	+	+	+	+	+	**Medium**	**Low**	**Low**

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF ACTIONS

(Name of Jurisdiction) **County of Lewis**

Action	"-" = cost (unfavorable)				"0"=neutral or not applicable			"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Drought Preparedness (7.D) Publish and distribute literature (via the County web site, supplemented by hard copy distribution) on water conservation techniques and drought management strategies.	+	+	**0**	+	**0**	+	+	+	+	+	**High**	**Low**	**Medium**
East Martinsburg Road, Town of Martinsburg (8.K) Stabilize eroding roadbank	**0**	+	+	+	+	+	+	+	+	+	**High**	**High**	**Med**
Town of Watson Streambank Erosion (8.K) Stabilize streambank along Black River	**-**	+	+	+	+	+	+	+	+	+	**High**	**Med**	**High**
Roaring Brook, Town of Martinsburg (8.K) Stabilize eroding streambank	**-**	+	+	0	+	**0**	+	+	+	+	**Med**	**Med**	**Med**
East Martinsburg Road, Town of Watson (8.I) Road elevation along major floodplain	**0**	+	+	+	+	**0**	**0**	+	+	+	**High**	**Med**	**Med**

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF ACTIONS

(Name of Jurisdiction) **County of Lewis**

Action	"-" = cost (unfavorable)				"0"=neutral or not applicable			"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Mill Creek, Village of Lowville (8.J) Debris removal and erosion control	-	+	0	0	0	0	+	+	+	+	Med	Med	Med
Flood gauging (8.F) Update flood gauging technology within county	+	+	+	+	+	+	+	+	+	+	High	Med	Med
Emergency Communications (2.B) Purchase high band portable radio communications equipment	+	+	+	+	+	+	+	+	+	+	High	Med	High
Weather stations (2.E) Purchase weather monitoring system	+	+	+	+	+	+	+	+	+	+	High	Med	Med
Snow fencing (5.F) Purchase snow fence (living and other) to be used for wind and snow control throughout county	+	+	+	+	+	+	+	+	+	+	High	Med	Med

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF ACTIONS

(Name of Jurisdiction) **County of Lewis**

Action	"-" = cost (unfavorable)					"0"=neutral or not applicable		"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Emergency Water Source Utilization of emergency water source centrally located in county	+	+	-	-	-	+	+	+	+	+	**Med**	**Med**	**Med**
Countywide FIRM Update (8.D) Update flood hazard mapping for Black River and other areas	-	+	+	+	+	+	+	+	+	-	**High**	**Med**	**High**
Certified Floodplain Managers (8.C) Obtain/host specialist training and certification for floodplain managers	+	+	+	+	+	+	+	+	+	+	**High**	**Low**	**Med**
Wildfire Mapping (12.A, 12.D) Create and distribute mapping and database of wildland access points for firefighters, develop enhanced mapping of urban/wildland interface.	+	+	+	+	+	**0**	+	+	+	+	**High**	**Med**	**Med**
Stormwater Retention, Lewis County General Hospital Install stormwater drainage system	**0**	+	+	+	+	**0**	+	+	+	+	**High**	**Med**	**High**

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF ACTIONS

(Name of Jurisdiction) **County of Lewis**

Action	"-" = cost (unfavorable)				"0"=neutral or not applicable			"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Winter Driving and Vehicle Preparation Education (5.C) Provide education opportunities for residents to learn winter driving techniques.	+	+	-	+	0	+	0	+	+	+	High	Low	High
Winter Storm Public Awareness and Preparation (5.C) Increase public awareness of personal responsibilities during emergencies, specifically winter storm events	+	+	-	+	0	+	0	+	+	+	High	Low	High
Emergency Warming Shelters (5.G) Establish warming shelters for vulnerable populations, including residents and stranded motorists	-	+	-	+	0	+	0	-	+	-	Med	Med	Low
Outreach Program (5.H, 3.B) County coordination with local governments and other agencies to systematically contact isolated, vulnerable or special-needs population during severe winter storm events	-	+	-	+	0	+	0	+	+	-	High	Med	Med
Auxiliary Power Supply (4.C) Conduct a countywide survey on status of auxiliary power supplies at all critical facilities.	+	+	-	+	0	+	+	+	+	+	High	Low	Med

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF ACTIONS

(Name of Jurisdiction) **County of Lewis**

Action	"-" = cost (unfavorable)				"0"=neutral or not applicable			"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Wind Hazards Training (4.H) Provide trainings to municipalities regarding the development and implementation of programs to mitigate wind damage to private and public properties.	+	+	+	+	0	+	+	+	+	+	High	Low	Low

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF ACTIONS

(Name of Jurisdiction) **Village of Castorland**

Action	"-" = cost (unfavorable)				"0"=neutral or not applicable			"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Replace current sewage treatment facility: relocate out of the floodplain, with improvements and enlargements to accommodate future flows	0	+	+	+	+	+	+	-	+	-	High	High	High
Install new storm sewers	0	+	+	+	+	+	+	-	+	-	High	High	High
Relocate and replace current emergency alarm system	0	+	+	+	+	+	+	-	+	-	High	High	High
Purchase a large generator (20,000kw) for use during long periods of power outages	0	+	+	+	0	+	+	+	+	+	High	High	High

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF ACTIONS

(Name of Jurisdiction) Village of Constableville

Action	"-" = cost (unfavorable)				"0"=neutral or not applicable			"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Rebuild High Street - Install bigger culverts under driveways to enable better storm water flow.	+	0	0	0	-	-	0	-	+	-	High	High	Medium
Upgrade existing Storm Drains by removing old Concrete Storm Drains and replacing with new ones on North Main St.	+	0	0	0	-	-	0	-	+	-	High	High	Low
Replace old box culvert under Main Street thats runs from Schuyler Street into Sugar River (200' Culvert)	+	0	0	0	-	-	0	-	+	-	High	High	Medium

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF ACTIONS

(Name of Jurisdiction) **Town of Croghan, NY**

Action	"-" = cost (unfavorable)				"0"=neutral or not applicable			"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Culvert Pipe on Steiner Road	0	+	+	0	+	+	+	+	+	+	High	Med	High
Prevent ice damage to back wall of town highway garage	+	+	+	+	+	+	+	+	+	+	High	Med	High
Bridge repair on Jerden Falls Road Bridge is too narrow to handle flooding of stream	0	+	+	+	+	+	+	+	+	+	High	High	Med

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF ACTIONS

(Name of Jurisdiction) **Village of Croghan**

Action	"-" = cost (unfavorable)				"0"=neutral or not applicable			"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Removing of trees that in a high wind threaten damage to emergency power (which kicks in during power outages) that operates the water plant supplying water to the Village of Croghan.	+	+	+	+	+	+	+	+	+	+	**HIGH**	**HIGH**	**HIGH**
Prevent flooding of the sewer beds from high water (flooding) of the Beaver River and inflow and infiltration to the sewer system caused by extreme weather related occurrences.													
A. Raise berms at the WWTF to mitigate inflow.	+	+	+	+	**0**	+	+	**-**	+	**-**	**LOW**	**HIGH**	**A. LOW**
B. Improve consumer compliance with existing Sewer Law.	+	+	+	**-**	**-**	+	+	**0**	+	+	**HIGH**	**LOW**	**B. MED**
C. Locate and eliminate I & I in sewer infrastructure.	+	+	+	+	+	+	+	**-**	+	**-**	**HIGH**	**HIGH**	**C. MED**
Clearing a 25ô wide swath the 4.76 miles the Village of Croghan water line runs from the wellhead to the Village to protect the line from wind damage from uprooting of trees.	+	+	+	+	+	+	+	+	+	**0**	**HIGH**	**HIGH**	**MED**
Repair/ rehabilitate the Croghan Dam	+	+	**-**	+	**-**	+	+	**-**	+	**-**	**HIGH**	**HIGH**	**HIGH**

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF ACTIONS

(Name of Jurisdiction) DENMARK

Action	"-" = cost (unfavorable) "0"=neutral or not applicable "+" = benefit (favorable)										(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
WILSON Rd, HALTAN, STODDARD, DORAN SNOW FENCE PURCHASE LIVE AND OTHER TO BE USED FOR WIND AND SNOW CONTROL	0	+	0	+	+	+	0	Yes	Yes	Yes	high	high	Med
[redacted] ROAD ELEVATION ALONG MAJOR FLOOD PLAIN 3 RDS	0	+	0	+	+	+	0	Yes	Yes	NO	High	high	Med
[redacted] FIRM UPDATE : UPDATE FLOOD PLAIN MAPS	0	+	0	+	+	+	0	Yes	Yes		med	med	Med
EMERGENCY COMMUNICATIONS MOBILE TOWNS, COUNTY, STATE RADIOS WITH FREQUENCIES ON THE SAME CHANNEL TO COMMUNICATE WITH EACH DEPT.	-	+	0	+	+	+	0	Yes	Yes	Yes	High	High	High
CULVERT REPLACEMENT	-	+	0	+	+	+	0	Yes	Yes	Yes	med	med	med

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF ACTIONS

(Name of Jurisdiction) TOWN OF DIANA _____

Action	"-" = cost (unfavorable)				"0"=neutral or not applicable			"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Replace bride on Henry Rd with culvert Bridge is too narrow And restricts water flow causing flooding	0	+	+	0	+	+	+	+	+	+	HIGH	MED	HIGH
Culvert Patchin Rd	0	+	+	0	+	+	+	+	+	+	HIGH	MED	HIGH
Replace small, narrow bridge with large culvert	0	+	+	0	+	+	+	+	+	+	HIGH	MED	HIGH

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF ACTIONS

(Name of Jurisdiction) **Town of Greig**

Action	"-" = cost (unfavorable)							"0"=neutral or not applicable		"+" = benefit (favorable)	(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Eatonville Road ï Replace 3 culverts with larger size. Clean ditch line for ¾ miles on the North Side of the road.	+	+	+	0	-	+	+	+	+	+	High	Med	Med
Jones Road ï Clean ditch line and replace 2 culverts with larger size.	+	+	+	0	-	+	+	+	+	+	Med	Low	Low
Chases Lake Road ï Remove large trees that are dead or have several dead limbs that will fall into roadway in high winds.	+	+	+	0	-	+	0	+	0	+	High	High	High
Chases Lake Road (Hill Section) ï Repair shoulders and replace shoulder material with non-erosive materials (stone).	+	+	+	0	-	+	+	+	+	+	High	Med	Med
Rumble Road ï Repair and line ditches so run-off water will not destroy shoulder and edges of roadway.	+	+	+	0	-	+	+	+	+	+	High	Low	High

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF ACTIONS

(Name of Jurisdiction) **Town of Greig**

Action	"-" = cost (unfavorable)							"0"=neutral or not applicable		"+" = benefit (favorable)	(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Partridgeville Road Bridge ï Repair Southside Wingwall, remove storm debris from the upside of the bridge.	0	+	0	+	+	+	0	+	+	+	+	Med	Med

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF ACTIONS

(Name of Jurisdiction) TOWN OF HARRISBURG

Action	"-" = cost (unfavorable) "0"=neutral or not applicable "+" = benefit (favorable)										(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Kubinski Rd Bridge Embankment - Upstream from Bridge	+	+	0	+	+	+	+	+	+	+	medium	$50,000	HIGH
Intersection Obrien + Moody Rd - Build up road + replace culverts	0	+	+	+	+	+	+	0	+	+	HIGH	$150,000	HIGH
BOSHART RD - Increase culvert size and improve approach	0	+	+	+	+	+	+	+	+	+	MEDIUM	$20,000	LOW
AUSTIN RD - River Rd Increase Culvert size and protect bank	0	+	+	+	+	+	+	+	+	+	medium	$10,000	medium
BOSHART RD - Increase culvert size and build up road	0	+	+	+	+	+	+	+	+	+	LOW	$10,000	LOW

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF ACTIONS

(Name of Jurisdiction) **Town of Lewis**

Action	"-" = cost (unfavorable)							"0"=neutral or not applicable		"+" = benefit (favorable)	(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Rome City Dam Improve communication between Town of Lewis, City of Rome and DEC to ensure compliance with dam regulations	**0**	+	-	+	-	+	+	-	+	-	**High**	**Med**	**High**
Firemanôs Pond Located along East Branch Mohawk River in West Leyden Ensure water supply for fire department during emergency situations.	+	+	**0**	+	**0**	+	+	+	+	+	**High**	**Low**	**High**
Statzer Road ï between Kirk Road and Mowers Road Flash flooding and sudden snowmelt Rehabilitate culvert to allow for flash flooding events	+	+	**0**	+	**0**	+	+	+	+	+	**High**	**Low**	**Low**
Statzer Road ï half mile west of Kirk Road Flash flooding and sudden snowmelt Rehabilitate culvert to allow for flash flooding events	+	+	**0**	+	**0**	+	+	+	+	+	**High**	**Low**	**Low**
Snowfencing 4 miles on Osceola Road Chronic drifting concerns	+	+	**0**	+	**0**	+	+	+	+	+	**High**	**Low**	**Low**

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF ACTIONS

(Name of Jurisdiction) **Town of Leyden**

Action	"-" = cost (unfavorable)							"0"=neutral or not applicable		"+" = benefit (favorable)	(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Build up streambanks along Black River at Denley Dam	+	+	-	+	-	+	+	-	+	+	**Med**	**Med**	**Low**
Enforce compliance with dam safety procedures at Denley Dam	+	+	-	+	-	+	+	-	+	-	**High**	**Med**	**High**
Build up streambanks along Black River at Port Leyden ï Lower Dam	+	+	-	+	-	+	+	-	+	+	**Med**	**Med**	**Low**
Enforce compliance with dam safety procedures at Port Leyden ï Lower Dam	+	+	-	+	-	+	+	-	+	-	**High**	**Med**	**High**
Hydrologic and hydraulic analysis to study existing flooding and waterflow concerns at Davis Bridge along Black River	+	+	+	+	+	+	+	+	+	+	**High**	**High**	**Low**

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF ACTIONS

(Name of Jurisdiction) **Town of Leyden**

Action	"-" = cost (unfavorable)				"0"=neutral or not applicable			"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Snowfencing for snow drifting control ï throughout town	+	+	+	+	+	+	+	+	+	+	**Med**	**Med**	**Low**
Replace culvert along Stuckie Road because of high water flooding events	+	+	+	+	**0**	+	+	+	+	+	**High**	**Low**	**Med**
Replace culvert along Iseneker Road because of high water flooding events.	+	+	+	+	**0**	+	+	+	+	+	**High**	**Low**	**Med**

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF ACTIONS

(Name of Jurisdiction) **Town of Lowville**

Action	"-" = cost (unfavorable)							"0"=neutral or not applicable		"+" = benefit (favorable)	(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Training for Staff to include Code/Zoning Office, T/V Public Works Departments and Village Police	+	+	+	+	+	-	+	+	+	+	**High**	**Medium**	**High**
Generator/Power Plan for T/V Offices located at 5533 Bostwick Street	+	+	+	+	+	-	+	+	+	+	**High**	**High**	**High**
Bridge Replacement Due to Under Sizing, choking, halo water upstream Boshart Road, Town of Lowville	+	+	+	+	+	-	+	+	+	+	**High**	**High**	**High**
Culvert Replacement due to insufficient flow, flooding properties and structures, East Road, Town of Lowville	+	+	+	+	+	-	+	+	+	+	**High**	**Medium**	**High**
Culvert Replacement due to insufficient flow, flooding the roadway, creating damage to infrastructure, East Road, Town of Lowville	+	+	+	+	+	-	+	+	+	+	**High**	**Medium**	**High**

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF ACTIONS

(Name of Jurisdiction) **Town of Lowville**

Action	"-" = cost (unfavorable)							"0"=neutral or not applicable		"+" = benefit (favorable)	(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Early warning to persons located in the flood plain ï Coordinate with County	+	+	+	+	+	-	+	+	+	+	**High**	**Unknown**	**High**
Review exiting local information to ensure consistency with goals and objectives	+	+	+	+	+	-	+	+	+	+	**High**	**Medium**	**High**
Initiate River Bank Clean Up ï Potential for Black River Dredging to clear of items which contribute to flooding ï Consider non-structural flood hazards including roadways and other Town/Village infrastructure	+	+	+	+	+	-	+	+	+	+	**High**	**High**	**High**
Evaluate participation in the CRS, training for two (2) individuals	+	+	+	+	+	-	+	+	+	+	**High**	**Medium**	**High**
Encourage development and enforcement of wind-resistant building siting and construction codes.	+	+	+	+	+	-	+	+	+	+	**High**	**Medium**	**High**

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF ACTIONS

(Name of Jurisdiction) **Town of Lowville**

Action	"-" = cost (unfavorable)				"0"=neutral or not applicable			"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Identify and address obstructions to surface water drainage	+	+	+	+	+	-	+	+	+	+	**High**	**Medium**	**High**
Coordinate protocol with County Emergency Services Coordinator for notification of key officials involved with the CRS	+	+	+	+	+	+	+	+	+	+	**High**	**Low**	**High**
Identification of evacuation plans, routes, policies and procedures for the full range of contingencies and geographic areas of the jurisdictions and coordinate with County.	+	+	+	+	+	+	+	+	+	+	**High**	**Low**	**High**
Identify areas and specific residents who would need evacuation assistance, including residence who lack transportation, and develop evacuation assistance plans.	+	+	+	+	+	+	+	+	+	+	**High**	**Low**	**High**
Monitor condition and maintain repair of town roads and road banks in high flood hazard areas.	+	+	+	+	+	+	+	+	+	+	**High**	**Low**	**High**

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF ACTIONS

(Name of Jurisdiction) **Town of Lowville**

Action	"-" = cost (unfavorable)							"0"=neutral or not applicable		"+" = benefit (favorable)	(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Identify and address obstructions to surface water drainage.	+	+	+	+	+	+	+	+	+	+	**High**	**Low**	**High**
Review existing local plans and efforts to ensure consistency with this plan's goals and objectives, and integrate the goals, objectives and activities from this plan into existing regulatory documents and programs, where appropriate (including zoning ordinances, building codes, and land use policies.)	+	+	+	+	+	+	+	+	+	+	**High**	**Low**	**High**
Assist in updating the flood plain (FIRM) maps.	+	+	+	+	+	+	+	+	+	+	**High**	**Low**	**High**
Continue participation in the National Flood Insurance Program (NFIP)	+	+	+	+	+	+	+	+	+	+	**High**	**Low**	**High**

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF ACTIONS

(Name of Jurisdiction) **Village of Lowville**

Action	"-" = cost (unfavorable)				"0"=neutral or not applicable			"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Construction of concrete or other type retaining wall on South side of Mill Creek at a location just East of the East State Street bridge. Flooding and/or Ice Jams of Mill Creek at this location could potentially exceed the banks and penetrate the waste water treatment ponds causing waste water to flood into the Black River.	+	+	+	0	-	-	+	-	+	-	High	Low	High
Reinforce or reconstruct the stone/earthen wall on the North side of Mill Creek at a location just West of the State Street bridge. Currently this location has approximately a 10 to 12 foot diameter section that has already fallen out of the wall and bottom third of the wall is bowing outwards towards Mill Creek.	-	+	-	-	-	0	+	-	-	-	Medium	Low	Medium
Implementation of a portable power generating plant at the Town/Village of Lowville Offices so that daily operations may continue during power outages. This location may also be considered for a possible shelter location in the event of stranded motorists or residents left without electricity for extended periods.	+	+	+	0	+	+	+	0	+	-	High	Low	Medium
Maintain winter parking regulations to allow for proper snow removal	+	+	+	+	+	+	+	+	+	+	High	Low	Medium
Snow removal ï Site alternate snow dumping area for village snow removal.	+	+	+	+	+	+	+	+	+	+	High	Low	Medium

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF ACTIONS

(Name of Jurisdiction) **Village of Lowville**

Action	"-" = cost (unfavorable)							"0"=neutral or not applicable		"+" = benefit (favorable)	(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Retaining Wall and/or Elevation of Wastewater Treatment Plant	+	+	+	+	+	-	+	+	+	+	High	High	Medium

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF ACTIONS

(Name of Jurisdiction) **Village of Lyons Falls**

Action	"-" = cost (unfavorable)					"0"=neutral or not applicable		"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Village of Lyons Falls Flooding; Replace bridge/culvert on Center St.	+	+	+	+	+	-	+	+	+	+	high	high	high
Ice, snow and windstorms ï Tree trimming and removal through out the village of Lyons Falls	+	+	+	+	+	-	+	+	+	0	high	Low	Med
Flooding & Erosion: Repair present and install new storm water drainage system through out the village of Lyons Falls	+	_	+	+	0	-	-	-	+	-	med	high	low

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF ACTIONS

(Name of Jurisdiction) Town of Lyonsdale

Action	"-" = cost (unfavorable) "0"=neutral or not applicable "+" = benefit (favorable)										(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Bridge replacement - North side Moose River on Lowdale Road (Raise Road)	+	+	+	+	-	+	+	+	+	-	High	High	High
Gould Town Bridge South side Moose River on Shibley Rd. (Raise Road)	+	+	+	+	-	+	+	+	+	-	High	High	Med
Wash outs - Big hill on Shibley Rd and John Smith's drive way (hill) on Pearl ST. Culverts & ditching	+	+	-	+	-	-	+	+	+	+	Med	Med	Med
Culvert replacement - Larger Hoag Rd - Shibley Rd intersection (Dave Post) Rumble Rd (Ronald Farr) Moose River Rd (Mike Scouten) River Rd. 3 Knolters Bend, by cattle pass & Sand pit	+	+	-	+	-	+	+	+	+	+	High	High	High
Portable Generators & pumps for Port Leyden and Lyons Falls Fire Departments Used for flooded cellers, Forest fires etc	+	+	-	+	-	+	+	+	+	+	High	Med	High
Replace old Fire hydrants and water lines	+	+	+	+	-	+	+	+	+	-	High	High	High

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF ACTIONS

(Name of Jurisdiction) **Town of Martinsburg**

Action	"-" = cost (unfavorable)							"0"=neutral or not applicable		"+" = benefit (favorable)	(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Connecting sump pumps to storm drain in the Village of Glenfield	+	+	+	+	+	+	+	+	+	+	**Med**	**Med**	**Medium**
Move sewer treatment facility to a location outside of the floodplain (Glenfield)	+	+	+	+	+	+	+	**0**	+	**-**	**High**	**High**	**Low**
Whitaker Road, Flat Rock Road Extend Shoulders and line ditches with asphalt to prevent erosion from melting snow	+	+	+	+	+	+	+	+	+	+	**High**	**High**	**High**

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF ACTIONS

(Name of Jurisdiction) **Town of Montague**

Action	"-" = cost (unfavorable)				"0"=neutral or not applicable			"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Gardner Rd. Appx 1 mile west of Sears Pond Rd. Larger culvert and ditch downstream	+	+	+	-	+	+	+	+	+	+	**High**	**Medium**	**High**
Gardner Rd. appx. 1.2 miles west of Sears Pond Rd. Ditch downstream	+	+	+	-	+	+	+	+	+	+	**High**	**Medium**	**High**
Gardner Rd. appx. 2.2 miles west of Sears Pond Rd. Ditch downstream	+	+	+	-	+	+	+	+	+	+	**High**	**Medium**	**High**
Parker Rd. 1.4 miles south of Sears Pond Rd. Ditch Downstream	+	+	+	-	+	+	+	+	+	+	**High**	**Medium**	**High**
Comments. Most of these projects can be easily accomplished by lifting restrictions placed by D.E.C. on the land that they control													

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF ACTIONS

(Name of Jurisdiction) Town of Osceol – Lewis Co.

Action	"-" = cost (unfavorable) "0"=neutral or not applicable "+" = benefit (favorable)										(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Ryan Road - replace culverts Raise road height and replace gravel fill. This is a constant problem due to flooding	0	+	0	+	0	–	–	–	+	–	+	–	High
Potter Rd – Replace culvert with larger culvert - raise height of gravel Rd. Beaver are constantly flooding and washing out road Flooding	0	+	0	+	0	–	0	+	+	+	+	0	Low
~~Jackson Rd~~ – North Oscal Rd – Replace Culvert - and raise gravel. Culvert plugs and water washes out roadway. Flooding	+	+	0	+	0	–	0	–	+	–	+	–	Med
North Osceola Rd Replace Culvert. Concrete base broken + Road needs gravel work Flooding	+	+	0	+	0	0	+	+	+	+	+	0	High

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF ACTIONS

(Name of Jurisdiction) **Town of Pinckney**

Action	"-" = cost (unfavorable)				"0"=neutral or not applicable			"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Drainage ditching River Road approximately 2 miles north of Intersection of Route 177 ï road banks and ditch repair	+	+	**0**	+	**0**	+	+	+	+	+	**High**	**Med**	**Med**
Drainage ditching River Road approximately 3 miles north of Intersection of Route 177 ï road banks and ditch repair	+	+	**0**	+	**0**	+	+	+	+	+	**High**	**Med**	**Med**
Snowfencing and Tree Plantings Throughout town ï plant trees as living fences and other snow fencing to mitigate snow drifting due to heavy snows and winds	+	+	**0**	+	**0**	+	+	+	+	+	**High**	**Low**	**High**

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF ACTIONS

(Name of Jurisdiction) Village Of Port Leyden

	Action	"-" = cost (unfavorable)							"0"=neutral or not applicable		"+" = benefit (favorable)	(high, medium, or low)		
		S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Project #1	Removal Of Hazardous Trees Within The Village Streets, Which May Cause Village Wide Power/Phone/Cable Services Outages In The Event Of Severe Winds (Thunder Storms/Tornados/Blizzards) This Project Would Entail Tree/Stump Removal And Site Restoration. Goal Of "Hazardous Trees" Prior To Severe Storms Would Improved Utility Integrety In The Event The Above Catastrophic Natural Occur. Note: Village Is Currently Working With Regional Utility Company To Accomplish This Project Goal.	+	+	+	+	0	+	+	+	+	+	High	Medium	High
Project #2	Culvert/Storm Water Drainage Placement On North Quarry Street: Plan Of Action To Minimize/Divert High Flow Run Off, Which Has Caused Significant Street, Lawn, Basement Home Owner Property Damage. Note: Village Has Started Project Utilizing "NYS" "CHIPS" Funds. However, Significant Funds Are Required.	+	+	+	+	0	+	+	+	+	+	High	Medium	High

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF ACTIONS

(Name of Jurisdiction) TOWN OF WEST TURIN

Action	"-" = cost (unfavorable)							"0"=neutral or not applicable		"+" = benefit (favorable)	(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
CULVERT REPLACEMENT ON CROFOOT HILL RD. BETWEEN THE TOWN LINE AND SMITH RD. THE CULVERT IS A 4' BY 240' DOWN UNDER THE ROAD 25'. WOULD LIKE TO INSTALLE A 8' BY 240' HEAVY STEEL WALL PIPE.	+	0	+	0	0	−	0	−	+	−	HIGH	HIGH	MEDIUM
CULVERT REPLACEMENT ON CROFOOT HILL RD JUST WEST OF THE SMITH RD. INTERSECTION. THE OLD CULVERT IS 4' BY 100' REPLACE WITH A 8' BY 100' HEAVY STEEL WALL PIPE.	+	0	+	0	0	−	0	−	+	−	HIGH	MEDIUM	MEDIUM
REPLACE OLD CONCRETE BOX CULVERT ON CROFOOT HILL ROAD BETWEEN PLAMMER RD INTERSECTION AND THE MACKEY ROAD REPLACE WITH NEW BOX CULVERT	+	0	+	0	0	−	0	−	+	−	HIGH	HIGH	MEDIUM
PURCHASE LAND FOR WIDER RIGHT OF WAY IN HIGH WIND DRIFTING AREA'S TO PLANT ROW'S OF TREES AS A NATUREL SNOW FENCE	0	0	0	+	0	+	0	+	+	+	HIGH	LOW	MEDIUM

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) **Village of Castorland**

Action	"-" = cost (unfavorable)				"0"=neutral or not applicable			"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Plan Review for Mitigation (1.B) Ensure that local comprehensive plans incorporate disaster mitigation techniques through a courtesy review of all draft plans by the County Economic Development and Planning Department	+	+	0	0	0	+	+	+	+	+	Medium	Low	Low
GIS Enhancement (2.A) Investigate expansion of hazard-related GIS capabilities via acquisition of HAZUS-MH to collect and develop more sophisticated hazard mapping and loss estimation. Use information in future plan updates. Ensure information will be available to the public and to local communities and agencies.	+	+	+	+	0	+	+	+	+	-	High	Medium	Medium
Outreach Program (3.B, 5.H) County coordination with local governments and other agencies to systematically contact isolated, vulnerable or special-needs population during severe winter storm events	-	+	-	+	0	+	0	+	+	-	High	Med	Medium
Auxiliary Power Supply (4.C) Conduct a countywide survey on status of auxiliary power supplies at all critical facilities.	+	+	-	+	0	+	+	+	+	+	High	Low	Medium
Wind Hazards Training (4.H) Provide trainings to municipalities regarding the development and implementation of programs to mitigate wind damage to private and public properties.	+	+	+	+	0	+	+	+	+	+	High	Low	Low

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) **Village of Castorland**

Action	"-" = cost (unfavorable)				"0"=neutral or not applicable			"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Winter Driving and Vehicle Preparation Education (5.C) Provide education opportunities for residents to learn winter driving techniques.	+	+	-	+	0	+	0	+	+	+	High	Low	High
Winter Storm Public Awareness and Preparation (5.C) Increase public awareness of personal responsibilities during emergencies, specifically winter storm events	+	+	-	+	0	+	0	+	+	+	High	Low	High
Emergency Warming Shelters (5.G) Establish warming shelters for vulnerable populations, including residents and stranded motorists	-	+	-	+	0	+	0	-	+	-	Medium	Medium	Low
Dam Safety (6.A, 6.C) Coordinate with NYSDEC and owners of all high and moderate hazard dams to work towards full compliance with applicable dam safety programs and development/updating of Emergency Action Plans including inundation mapping.	-	+	0	+	0	+	+	+	+	+	High	Low	Medium
Drought Preparedness (7.D) Publish and distribute literature (via the County web site, supplemented by hard copy distribution) on water conservation techniques and drought management strategies.	+	+	0	+	0	+	+	+	+	+	High	Low	Medium

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) **Village of Castorland**

Action	"-" = cost (unfavorable)				"0"=neutral or not applicable			"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Landslide Study (11.B) Conduct surveys to determine local vulnerabilities to landslides threatening property and roads, coordinate with municipalities to limit development in these areas and develop remedial measures for existing vulnerabilities.	-	+	+	0	**0**	+	+	+	**0**	-	**Medium**	**Medium**	**Low**
Wildfire Mapping (12.A, 12.D) Create and distribute mapping and database of wildland access points for firefighters, develop enhanced mapping of urban/wildland interface.	+	+	+	+	+	**0**	+	+	+	+	**High**	**Medium**	**Medium**
Critical Facilities Survey (13.A) Undertake a year built and level of protection survey for all critical/emergency facilities and shelters to highlight structures built before codes and standards were put in place to provide protection from natural hazards, and pursue potential mitigation opportunities to protect these sites as funding becomes available.	+	+	+	+	**0**	+	+	+	+	+	**High**	**Medium**	**Medium**

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) **Village of Constableville**

Action	"-" = cost (unfavorable)				"0"=neutral or not applicable			"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Plan Review for Mitigation (1.B) Ensure that local comprehensive plans incorporate disaster mitigation techniques through a courtesy review of all draft plans by the County Economic Development and Planning Department	+	+	0	0	0	+	+	+	+	+	Medium	Low	Low
GIS Enhancement (2.A) Investigate expansion of hazard-related GIS capabilities via acquisition of HAZUS-MH to collect and develop more sophisticated hazard mapping and loss estimation. Use information in future plan updates. Ensure information will be available to the public and to local communities and agencies.	+	+	+	+	0	+	+	+	+	-	High	Medium	Medium
Outreach Program (3.B, 5.H) County coordination with local governments and other agencies to systematically contact isolated, vulnerable or special-needs population during severe winter storm events	-	+	-	+	0	+	0	+	+	-	High	Med	Medium
Auxiliary Power Supply (4.C) Conduct a countywide survey on status of auxiliary power supplies at all critical facilities.	+	+	-	+	0	+	+	+	+	+	High	Low	Medium
Wind Hazards Training (4.H) Provide trainings to municipalities regarding the development and implementation of programs to mitigate wind damage to private and public properties.	+	+	+	+	0	+	+	+	+	+	High	Low	Low

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) **Village of Constableville**

Action	"-" = cost (unfavorable)				"0"=neutral or not applicable			"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Winter Driving and Vehicle Preparation Education (5.C) Provide education opportunities for residents to learn winter driving techniques.	+	+	-	+	0	+	0	+	+	+	High	Low	High
Winter Storm Public Awareness and Preparation (5.C) Increase public awareness of personal responsibilities during emergencies, specifically winter storm events	+	+	-	+	0	+	0	+	+	+	High	Low	High
Emergency Warming Shelters (5.G) Establish warming shelters for vulnerable populations, including residents and stranded motorists	-	+	-	+	0	+	0	-	+	-	Medium	Medium	Low
Dam Safety (6.A, 6.C) Coordinate with NYSDEC and owners of all high and moderate hazard dams to work towards full compliance with applicable dam safety programs and development/updating of Emergency Action Plans including inundation mapping.	-	+	0	+	0	+	+	+	+	+	High	Low	Medium
Drought Preparedness (7.D) Publish and distribute literature (via the County web site, supplemented by hard copy distribution) on water conservation techniques and drought management strategies.	+	+	0	+	0	+	+	+	+	+	High	Low	Medium

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) **Village of Constableville**

Action	"-" = cost (unfavorable)				"0"=neutral or not applicable			"+" = benefit (favorable)			(high, medium, or low)		
	S	**T**	**A**	**P**	**L**	**E**	**E**	**Can be implemented easily**	**Achieves multiple objectives**	**Can be implemented quickly**	**Overall Benefits**	**Overall Costs**	**Priority**
Landslide Study (11.B) Conduct surveys to determine local vulnerabilities to landslides threatening property and roads, coordinate with municipalities to limit development in these areas and develop remedial measures for existing vulnerabilities.	-	+	+	0	**0**	+	+	+	**0**	-	**Medium**	**Medium**	**Low**
Wildfire Mapping (12.A, 12.D) Create and distribute mapping and database of wildland access points for firefighters, develop enhanced mapping of urban/wildland interface.	+	+	+	+	+	**0**	+	+	+	+	**High**	**Medium**	**Medium**
Critical Facilities Survey (13.A) Undertake a year built and level of protection survey for all critical/emergency facilities and shelters to highlight structures built before codes and standards were put in place to provide protection from natural hazards, and pursue potential mitigation opportunities to protect these sites as funding becomes available.	+	+	+	+	**0**	+	+	+	+	+	**High**	**Medium**	**Medium**

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) **Town of Croghan**

Action	"-" = cost (unfavorable)				"0"=neutral or not applicable			"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Plan Review for Mitigation (1.B) Ensure that local comprehensive plans incorporate disaster mitigation techniques through a courtesy review of all draft plans by the County Economic Development and Planning Department	+	+	0	0	0	+	+	+	+	+	Medium	Low	Low
GIS Enhancement (2.A) Investigate expansion of hazard-related GIS capabilities via acquisition of HAZUS-MH to collect and develop more sophisticated hazard mapping and loss estimation. Use information in future plan updates. Ensure information will be available to the public and to local communities and agencies.	+	+	+	+	0	+	+	+	+	-	High	Medium	Medium
Outreach Program (3.B, 5.H) County coordination with local governments and other agencies to systematically contact isolated, vulnerable or special-needs population during severe winter storm events	-	+	-	+	0	+	0	+	+	-	High	Med	Medium
Auxiliary Power Supply (4.C) Conduct a countywide survey on status of auxiliary power supplies at all critical facilities.	+	+	-	+	0	+	+	+	+	+	High	Low	Medium
Wind Hazards Training (4.H) Provide trainings to municipalities regarding the development and implementation of programs to mitigate wind damage to private and public properties.	+	+	+	+	0	+	+	+	+	+	High	Low	Low

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) **Town of Croghan**

Action	"-" = cost (unfavorable)				"0"=neutral or not applicable			"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Winter Driving and Vehicle Preparation Education (5.C) Provide education opportunities for residents to learn winter driving techniques.	+	+	-	+	0	+	0	+	+	+	High	Low	High
Winter Storm Public Awareness and Preparation (5.C) Increase public awareness of personal responsibilities during emergencies, specifically winter storm events	+	+	-	+	0	+	0	+	+	+	High	Low	High
Emergency Warming Shelters (5.G) Establish warming shelters for vulnerable populations, including residents and stranded motorists	-	+	-	+	0	+	0	-	+	-	Medium	Medium	Low
Dam Safety (6.A, 6.C) Coordinate with NYSDEC and owners of all high and moderate hazard dams to work towards full compliance with applicable dam safety programs and development/updating of Emergency Action Plans including inundation mapping.	-	+	0	+	0	+	+	+	+	+	High	Low	Medium
Drought Preparedness (7.D) Publish and distribute literature (via the County web site, supplemented by hard copy distribution) on water conservation techniques and drought management strategies.	+	+	0	+	0	+	+	+	+	+	High	Low	Medium

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) **Town of Croghan**

Action	"-" = cost (unfavorable)				"0"=neutral or not applicable			"+" = benefit (favorable)			(high, medium, or low)		
	S	**T**	**A**	**P**	**L**	**E**	**E**	**Can be implemented easily**	**Achieves multiple objectives**	**Can be implemented quickly**	**Overall Benefits**	**Overall Costs**	**Priority**
Landslide Study (11.B) Conduct surveys to determine local vulnerabilities to landslides threatening property and roads, coordinate with municipalities to limit development in these areas and develop remedial measures for existing vulnerabilities.	-	+	+	0	**0**	+	+	+	**0**	-	**Medium**	**Medium**	**Low**
Wildfire Mapping (12.A, 12.D) Create and distribute mapping and database of wildland access points for firefighters, develop enhanced mapping of urban/wildland interface.	+	+	+	+	+	**0**	+	+	+	+	**High**	**Medium**	**Medium**
Critical Facilities Survey (13.A) Undertake a year built and level of protection survey for all critical/emergency facilities and shelters to highlight structures built before codes and standards were put in place to provide protection from natural hazards, and pursue potential mitigation opportunities to protect these sites as funding becomes available.	+	+	+	+	**0**	+	+	+	+	+	**High**	**Medium**	**Medium**

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) **Village of Croghan**

Action	"-" = cost (unfavorable)				"0"=neutral or not applicable			"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Plan Review for Mitigation (1.B) Ensure that local comprehensive plans incorporate disaster mitigation techniques through a courtesy review of all draft plans by the County Economic Development and Planning Department	+	+	0	0	0	+	+	+	+	+	Medium	Low	Low
GIS Enhancement (2.A) Investigate expansion of hazard-related GIS capabilities via acquisition of HAZUS-MH to collect and develop more sophisticated hazard mapping and loss estimation. Use information in future plan updates. Ensure information will be available to the public and to local communities and agencies.	+	+	+	+	0	+	+	+	+	-	High	Medium	Medium
Outreach Program (3.B, 5.H) County coordination with local governments and other agencies to systematically contact isolated, vulnerable or special-needs population during severe winter storm events	-	+	-	+	0	+	0	+	+	-	High	Med	Medium
Auxiliary Power Supply (4.C) Conduct a countywide survey on status of auxiliary power supplies at all critical facilities.	+	+	-	+	0	+	+	+	+	+	High	Low	Medium
Wind Hazards Training (4.H) Provide trainings to municipalities regarding the development and implementation of programs to mitigate wind damage to private and public properties.	+	+	+	+	0	+	+	+	+	+	High	Low	Low

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) **Village of Croghan**

Action	"-" = cost (unfavorable)				"0"=neutral or not applicable			"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Winter Driving and Vehicle Preparation Education (5.C) Provide education opportunities for residents to learn winter driving techniques.	+	+	-	+	0	+	0	+	+	+	High	Low	High
Winter Storm Public Awareness and Preparation (5.C) Increase public awareness of personal responsibilities during emergencies, specifically winter storm events	+	+	-	+	0	+	0	+	+	+	High	Low	High
Emergency Warming Shelters (5.G) Establish warming shelters for vulnerable populations, including residents and stranded motorists	-	+	-	+	0	+	0	-	+	-	Medium	Medium	Low
Dam Safety (6.A, 6.C) Coordinate with NYSDEC and owners of all high and moderate hazard dams to work towards full compliance with applicable dam safety programs and development/updating of Emergency Action Plans including inundation mapping.	-	+	0	+	0	+	+	+	+	+	High	Low	Medium
Drought Preparedness (7.D) Publish and distribute literature (via the County web site, supplemented by hard copy distribution) on water conservation techniques and drought management strategies.	+	+	0	+	0	+	+	+	+	+	High	Low	Medium

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) **Village of Croghan**

Action	"-" = cost (unfavorable)				"0"=neutral or not applicable			"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Landslide Study (11.B) Conduct surveys to determine local vulnerabilities to landslides threatening property and roads, coordinate with municipalities to limit development in these areas and develop remedial measures for existing vulnerabilities.	-	+	+	0	**0**	+	+	+	**0**	-	**Medium**	**Medium**	**Low**
Wildfire Mapping (12.A, 12.D) Create and distribute mapping and database of wildland access points for firefighters, develop enhanced mapping of urban/wildland interface.	+	+	+	+	+	**0**	+	+	+	+	**High**	**Medium**	**Medium**
Critical Facilities Survey (13.A) Undertake a year built and level of protection survey for all critical/emergency facilities and shelters to highlight structures built before codes and standards were put in place to provide protection from natural hazards, and pursue potential mitigation opportunities to protect these sites as funding becomes available.	+	+	+	+	**0**	+	+	+	+	+	**High**	**Medium**	**Medium**

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) **Town of Denmark**

Action	"-" = cost (unfavorable)				"0"=neutral or not applicable			"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Plan Review for Mitigation (1.B) Ensure that local comprehensive plans incorporate disaster mitigation techniques through a courtesy review of all draft plans by the County Economic Development and Planning Department	+	+	0	0	0	+	+	+	+	+	Medium	Low	Low
GIS Enhancement (2.A) Investigate expansion of hazard-related GIS capabilities via acquisition of HAZUS-MH to collect and develop more sophisticated hazard mapping and loss estimation. Use information in future plan updates. Ensure information will be available to the public and to local communities and agencies.	+	+	+	+	0	+	+	+	+	-	High	Medium	Medium
Outreach Program (3.B, 5.H) County coordination with local governments and other agencies to systematically contact isolated, vulnerable or special-needs population during severe winter storm events	-	+	-	+	0	+	0	+	+	-	High	Med	Medium
Auxiliary Power Supply (4.C) Conduct a countywide survey on status of auxiliary power supplies at all critical facilities.	+	+	-	+	0	+	+	+	+	+	High	Low	Medium
Wind Hazards Training (4.H) Provide trainings to municipalities regarding the development and implementation of programs to mitigate wind damage to private and public properties.	+	+	+	+	0	+	+	+	+	+	High	Low	Low

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) **Town of Denmark**

Action	"-" = cost (unfavorable)				"0"=neutral or not applicable			"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Winter Driving and Vehicle Preparation Education (5.C) Provide education opportunities for residents to learn winter driving techniques.	+	+	-	+	0	+	0	+	+	+	High	Low	High
Winter Storm Public Awareness and Preparation (5.C) Increase public awareness of personal responsibilities during emergencies, specifically winter storm events	+	+	-	+	0	+	0	+	+	+	High	Low	High
Emergency Warming Shelters (5.G) Establish warming shelters for vulnerable populations, including residents and stranded motorists	-	+	-	+	0	+	0	-	+	-	Medium	Medium	Low
Dam Safety (6.A, 6.C) Coordinate with NYSDEC and owners of all high and moderate hazard dams to work towards full compliance with applicable dam safety programs and development/updating of Emergency Action Plans including inundation mapping.	-	+	0	+	0	+	+	+	+	+	High	Low	Medium
Drought Preparedness (7.D) Publish and distribute literature (via the County web site, supplemented by hard copy distribution) on water conservation techniques and drought management strategies.	+	+	0	+	0	+	+	+	+	+	High	Low	Medium

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) **Town of Denmark**

Action	"-" = cost (unfavorable)				"0"=neutral or not applicable			"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Landslide Study (11.B) Conduct surveys to determine local vulnerabilities to landslides threatening property and roads, coordinate with municipalities to limit development in these areas and develop remedial measures for existing vulnerabilities.	-	+	+	0	**0**	+	+	+	**0**	-	**Medium**	**Medium**	**Low**
Wildfire Mapping (12.A, 12.D) Create and distribute mapping and database of wildland access points for firefighters, develop enhanced mapping of urban/wildland interface.	+	+	+	+	+	**0**	+	+	+	+	**High**	**Medium**	**Medium**
Critical Facilities Survey (13.A) Undertake a year built and level of protection survey for all critical/emergency facilities and shelters to highlight structures built before codes and standards were put in place to provide protection from natural hazards, and pursue potential mitigation opportunities to protect these sites as funding becomes available.	+	+	+	+	**0**	+	+	+	+	+	**High**	**Medium**	**Medium**

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) **Town of Diana**

Action	"-" = cost (unfavorable)				"0"=neutral or not applicable			"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Plan Review for Mitigation (1.B) Ensure that local comprehensive plans incorporate disaster mitigation techniques through a courtesy review of all draft plans by the County Economic Development and Planning Department	+	+	0	0	0	+	+	+	+	+	Medium	Low	Low
GIS Enhancement (2.A) Investigate expansion of hazard-related GIS capabilities via acquisition of HAZUS-MH to collect and develop more sophisticated hazard mapping and loss estimation. Use information in future plan updates. Ensure information will be available to the public and to local communities and agencies.	+	+	+	+	0	+	+	+	+	-	High	Medium	Medium
Outreach Program (3.B, 5.H) County coordination with local governments and other agencies to systematically contact isolated, vulnerable or special-needs population during severe winter storm events	-	+	-	+	0	+	0	+	+	-	High	Med	Medium
Auxiliary Power Supply (4.C) Conduct a countywide survey on status of auxiliary power supplies at all critical facilities.	+	+	-	+	0	+	+	+	+	+	High	Low	Medium
Wind Hazards Training (4.H) Provide trainings to municipalities regarding the development and implementation of programs to mitigate wind damage to private and public properties.	+	+	+	+	0	+	+	+	+	+	High	Low	Low

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) **Town of Diana**

Action	"-" = cost (unfavorable)				"0"=neutral or not applicable			"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Winter Driving and Vehicle Preparation Education (5.C) Provide education opportunities for residents to learn winter driving techniques.	+	+	-	+	0	+	0	+	+	+	High	Low	High
Winter Storm Public Awareness and Preparation (5.C) Increase public awareness of personal responsibilities during emergencies, specifically winter storm events	+	+	-	+	0	+	0	+	+	+	High	Low	High
Emergency Warming Shelters (5.G) Establish warming shelters for vulnerable populations, including residents and stranded motorists	-	+	-	+	0	+	0	-	+	-	Medium	Medium	Low
Dam Safety (6.A, 6.C) Coordinate with NYSDEC and owners of all high and moderate hazard dams to work towards full compliance with applicable dam safety programs and development/updating of Emergency Action Plans including inundation mapping.	-	+	0	+	0	+	+	+	+	+	High	Low	Medium
Drought Preparedness (7.D) Publish and distribute literature (via the County web site, supplemented by hard copy distribution) on water conservation techniques and drought management strategies.	+	+	0	+	0	+	+	+	+	+	High	Low	Medium

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) **Town of Diana**

Action	"-" = cost (unfavorable)				"0"=neutral or not applicable			"+" = benefit (favorable)			(high, medium, or low)		
	S	**T**	**A**	**P**	**L**	**E**	**E**	**Can be implemented easily**	**Achieves multiple objectives**	**Can be implemented quickly**	**Overall Benefits**	**Overall Costs**	**Priority**
Landslide Study (11.B) Conduct surveys to determine local vulnerabilities to landslides threatening property and roads, coordinate with municipalities to limit development in these areas and develop remedial measures for existing vulnerabilities.	-	+	+	0	**0**	+	+	+	**0**	-	**Medium**	**Medium**	**Low**
Wildfire Mapping (12.A, 12.D) Create and distribute mapping and database of wildland access points for firefighters, develop enhanced mapping of urban/wildland interface.	+	+	+	+	+	**0**	+	+	+	+	**High**	**Medium**	**Medium**
Critical Facilities Survey (13.A) Undertake a year built and level of protection survey for all critical/emergency facilities and shelters to highlight structures built before codes and standards were put in place to provide protection from natural hazards, and pursue potential mitigation opportunities to protect these sites as funding becomes available.	+	+	+	+	**0**	+	+	+	+	+	**High**	**Medium**	**Medium**

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) **Town of Greig**

Action	"-" = cost (unfavorable)				"0"=neutral or not applicable			"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Plan Review for Mitigation (1.B) Ensure that local comprehensive plans incorporate disaster mitigation techniques through a courtesy review of all draft plans by the County Economic Development and Planning Department	+	+	0	0	0	+	+	+	+	+	Medium	Low	Low
GIS Enhancement (2.A) Investigate expansion of hazard-related GIS capabilities via acquisition of HAZUS-MH to collect and develop more sophisticated hazard mapping and loss estimation. Use information in future plan updates. Ensure information will be available to the public and to local communities and agencies.	+	+	+	+	0	+	+	+	+	-	High	Medium	Medium
Outreach Program (3.B, 5.H) County coordination with local governments and other agencies to systematically contact isolated, vulnerable or special-needs population during severe winter storm events	-	+	-	+	0	+	0	+	+	-	High	Med	Medium
Auxiliary Power Supply (4.C) Conduct a countywide survey on status of auxiliary power supplies at all critical facilities.	+	+	-	+	0	+	+	+	+	+	High	Low	Medium
Wind Hazards Training (4.H) Provide trainings to municipalities regarding the development and implementation of programs to mitigate wind damage to private and public properties.	+	+	+	+	0	+	+	+	+	+	High	Low	Low

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) **Town of Greig**

Action	"-" = cost (unfavorable)				"0"=neutral or not applicable			"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Winter Driving and Vehicle Preparation Education (5.C) Provide education opportunities for residents to learn winter driving techniques.	+	+	-	+	0	+	0	+	+	+	High	Low	High
Winter Storm Public Awareness and Preparation (5.C) Increase public awareness of personal responsibilities during emergencies, specifically winter storm events	+	+	-	+	0	+	0	+	+	+	High	Low	High
Emergency Warming Shelters (5.G) Establish warming shelters for vulnerable populations, including residents and stranded motorists	-	+	-	+	0	+	0	-	+	-	Medium	Medium	Low
Dam Safety (6.A, 6.C) Coordinate with NYSDEC and owners of all high and moderate hazard dams to work towards full compliance with applicable dam safety programs and development/updating of Emergency Action Plans including inundation mapping.	-	+	0	+	0	+	+	+	+	+	High	Low	Medium
Drought Preparedness (7.D) Publish and distribute literature (via the County web site, supplemented by hard copy distribution) on water conservation techniques and drought management strategies.	+	+	0	+	0	+	+	+	+	+	High	Low	Medium

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) **Town of Greig**

Action	"-" = cost (unfavorable)				"0"=neutral or not applicable			"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Landslide Study (11.B) Conduct surveys to determine local vulnerabilities to landslides threatening property and roads, coordinate with municipalities to limit development in these areas and develop remedial measures for existing vulnerabilities.	-	+	+	0	**0**	+	+	+	**0**	-	**Medium**	**Medium**	**Low**
Wildfire Mapping (12.A, 12.D) Create and distribute mapping and database of wildland access points for firefighters, develop enhanced mapping of urban/wildland interface.	+	+	+	+	+	**0**	+	+	+	+	**High**	**Medium**	**Medium**
Critical Facilities Survey (13.A) Undertake a year built and level of protection survey for all critical/emergency facilities and shelters to highlight structures built before codes and standards were put in place to provide protection from natural hazards, and pursue potential mitigation opportunities to protect these sites as funding becomes available.	+	+	+	+	**0**	+	+	+	+	+	**High**	**Medium**	**Medium**

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) **Town of Harrisburg**

Action	"-" = cost (unfavorable)				"0"=neutral or not applicable			"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Plan Review for Mitigation (1.B) Ensure that local comprehensive plans incorporate disaster mitigation techniques through a courtesy review of all draft plans by the County Economic Development and Planning Department	+	+	0	0	0	+	+	+	+	+	Medium	Low	Low
GIS Enhancement (2.A) Investigate expansion of hazard-related GIS capabilities via acquisition of HAZUS-MH to collect and develop more sophisticated hazard mapping and loss estimation. Use information in future plan updates. Ensure information will be available to the public and to local communities and agencies.	+	+	+	+	0	+	+	+	+	-	High	Medium	Medium
Outreach Program (3.B, 5.H) County coordination with local governments and other agencies to systematically contact isolated, vulnerable or special-needs population during severe winter storm events	-	+	-	+	0	+	0	+	+	-	High	Med	Medium
Auxiliary Power Supply (4.C) Conduct a countywide survey on status of auxiliary power supplies at all critical facilities.	+	+	-	+	0	+	+	+	+	+	High	Low	Medium
Wind Hazards Training (4.H) Provide trainings to municipalities regarding the development and implementation of programs to mitigate wind damage to private and public properties.	+	+	+	+	0	+	+	+	+	+	High	Low	Low

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) **Town of Harrisburg**

Action	"-" = cost (unfavorable)				"0"=neutral or not applicable			"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Winter Driving and Vehicle Preparation Education (5.C) Provide education opportunities for residents to learn winter driving techniques.	+	+	-	+	0	+	0	+	+	+	High	Low	High
Winter Storm Public Awareness and Preparation (5.C) Increase public awareness of personal responsibilities during emergencies, specifically winter storm events	+	+	-	+	0	+	0	+	+	+	High	Low	High
Emergency Warming Shelters (5.G) Establish warming shelters for vulnerable populations, including residents and stranded motorists	-	+	-	+	0	+	0	-	+	-	Medium	Medium	Low
Dam Safety (6.A, 6.C) Coordinate with NYSDEC and owners of all high and moderate hazard dams to work towards full compliance with applicable dam safety programs and development/updating of Emergency Action Plans including inundation mapping.	-	+	0	+	0	+	+	+	+	+	High	Low	Medium
Drought Preparedness (7.D) Publish and distribute literature (via the County web site, supplemented by hard copy distribution) on water conservation techniques and drought management strategies.	+	+	0	+	0	+	+	+	+	+	High	Low	Medium

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) **Town of Harrisburg**

Action	"-" = cost (unfavorable)				"0"=neutral or not applicable			"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Landslide Study (11.B) Conduct surveys to determine local vulnerabilities to landslides threatening property and roads, coordinate with municipalities to limit development in these areas and develop remedial measures for existing vulnerabilities.	-	+	+	0	**0**	+	+	+	**0**	-	**Medium**	**Medium**	**Low**
Wildfire Mapping (12.A, 12.D) Create and distribute mapping and database of wildland access points for firefighters, develop enhanced mapping of urban/wildland interface.	+	+	+	+	+	**0**	+	+	+	+	**High**	**Medium**	**Medium**
Critical Facilities Survey (13.A) Undertake a year built and level of protection survey for all critical/emergency facilities and shelters to highlight structures built before codes and standards were put in place to provide protection from natural hazards, and pursue potential mitigation opportunities to protect these sites as funding becomes available.	+	+	+	+	**0**	+	+	+	+	+	**High**	**Medium**	**Medium**

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) **Town of Lewis**

Action	"-" = cost (unfavorable)				"0"=neutral or not applicable			"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Plan Review for Mitigation (1.B) Ensure that local comprehensive plans incorporate disaster mitigation techniques through a courtesy review of all draft plans by the County Economic Development and Planning Department	+	+	0	0	0	+	+	+	+	+	Medium	Low	Low
GIS Enhancement (2.A) Investigate expansion of hazard-related GIS capabilities via acquisition of HAZUS-MH to collect and develop more sophisticated hazard mapping and loss estimation. Use information in future plan updates. Ensure information will be available to the public and to local communities and agencies.	+	+	+	+	0	+	+	+	+	-	High	Medium	Medium
Outreach Program (3.B, 5.H) County coordination with local governments and other agencies to systematically contact isolated, vulnerable or special-needs population during severe winter storm events	-	+	-	+	0	+	0	+	+	-	High	Med	Medium
Auxiliary Power Supply (4.C) Conduct a countywide survey on status of auxiliary power supplies at all critical facilities.	+	+	-	+	0	+	+	+	+	+	High	Low	Medium
Wind Hazards Training (4.H) Provide trainings to municipalities regarding the development and implementation of programs to mitigate wind damage to private and public properties.	+	+	+	+	0	+	+	+	+	+	High	Low	Low

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) **Town of Lewis**

Action	"-" = cost (unfavorable)				"0"=neutral or not applicable			"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Winter Driving and Vehicle Preparation Education (5.C) Provide education opportunities for residents to learn winter driving techniques.	+	+	-	+	0	+	0	+	+	+	High	Low	High
Winter Storm Public Awareness and Preparation (5.C) Increase public awareness of personal responsibilities during emergencies, specifically winter storm events	+	+	-	+	0	+	0	+	+	+	High	Low	High
Emergency Warming Shelters (5.G) Establish warming shelters for vulnerable populations, including residents and stranded motorists	-	+	-	+	0	+	0	-	+	-	Medium	Medium	Low
Dam Safety (6.A, 6.C) Coordinate with NYSDEC and owners of all high and moderate hazard dams to work towards full compliance with applicable dam safety programs and development/updating of Emergency Action Plans including inundation mapping.	-	+	0	+	0	+	+	+	+	+	High	Low	Medium
Drought Preparedness (7.D) Publish and distribute literature (via the County web site, supplemented by hard copy distribution) on water conservation techniques and drought management strategies.	+	+	0	+	0	+	+	+	+	+	High	Low	Medium

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) **Town of Lewis**

Action	"-" = cost (unfavorable)				"0"=neutral or not applicable			"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Landslide Study (11.B) Conduct surveys to determine local vulnerabilities to landslides threatening property and roads, coordinate with municipalities to limit development in these areas and develop remedial measures for existing vulnerabilities.	-	+	+	0	**0**	+	+	+	**0**	-	**Medium**	**Medium**	**Low**
Wildfire Mapping (12.A, 12.D) Create and distribute mapping and database of wildland access points for firefighters, develop enhanced mapping of urban/wildland interface.	+	+	+	+	+	**0**	+	+	+	+	**High**	**Medium**	**Medium**
Critical Facilities Survey (13.A) Undertake a year built and level of protection survey for all critical/emergency facilities and shelters to highlight structures built before codes and standards were put in place to provide protection from natural hazards, and pursue potential mitigation opportunities to protect these sites as funding becomes available.	+	+	+	+	**0**	+	+	+	+	+	**High**	**Medium**	**Medium**

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) **Town of Leyden**

Action	"-" = cost (unfavorable)				"0"=neutral or not applicable			"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Plan Review for Mitigation (1.B) Ensure that local comprehensive plans incorporate disaster mitigation techniques through a courtesy review of all draft plans by the County Economic Development and Planning Department	+	+	0	0	0	+	+	+	+	+	Medium	Low	Low
GIS Enhancement (2.A) Investigate expansion of hazard-related GIS capabilities via acquisition of HAZUS-MH to collect and develop more sophisticated hazard mapping and loss estimation. Use information in future plan updates. Ensure information will be available to the public and to local communities and agencies.	+	+	+	+	0	+	+	+	+	-	High	Medium	Medium
Outreach Program (3.B, 5.H) County coordination with local governments and other agencies to systematically contact isolated, vulnerable or special-needs population during severe winter storm events	-	+	-	+	0	+	0	+	+	-	High	Med	Medium
Auxiliary Power Supply (4.C) Conduct a countywide survey on status of auxiliary power supplies at all critical facilities.	+	+	-	+	0	+	+	+	+	+	High	Low	Medium
Wind Hazards Training (4.H) Provide trainings to municipalities regarding the development and implementation of programs to mitigate wind damage to private and public properties.	+	+	+	+	0	+	+	+	+	+	High	Low	Low

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) **Town of Leyden**

Action	"-" = cost (unfavorable)				"0"=neutral or not applicable			"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Winter Driving and Vehicle Preparation Education (5.C) Provide education opportunities for residents to learn winter driving techniques.	+	+	-	+	0	+	0	+	+	+	High	Low	High
Winter Storm Public Awareness and Preparation (5.C) Increase public awareness of personal responsibilities during emergencies, specifically winter storm events	+	+	-	+	0	+	0	+	+	+	High	Low	High
Emergency Warming Shelters (5.G) Establish warming shelters for vulnerable populations, including residents and stranded motorists	-	+	-	+	0	+	0	-	+	-	Medium	Medium	Low
Dam Safety (6.A, 6.C) Coordinate with NYSDEC and owners of all high and moderate hazard dams to work towards full compliance with applicable dam safety programs and development/updating of Emergency Action Plans including inundation mapping.	-	+	0	+	0	+	+	+	+	+	High	Low	Medium
Drought Preparedness (7.D) Publish and distribute literature (via the County web site, supplemented by hard copy distribution) on water conservation techniques and drought management strategies.	+	+	0	+	0	+	+	+	+	+	High	Low	Medium

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) **Town of Leyden**

Action	"-" = cost (unfavorable)				"0"=neutral or not applicable			"+" = benefit (favorable)			(high, medium, or low)		
	S	**T**	**A**	**P**	**L**	**E**	**E**	**Can be implemented easily**	**Achieves multiple objectives**	**Can be implemented quickly**	**Overall Benefits**	**Overall Costs**	**Priority**
Landslide Study (11.B) Conduct surveys to determine local vulnerabilities to landslides threatening property and roads, coordinate with municipalities to limit development in these areas and develop remedial measures for existing vulnerabilities.	-	+	+	0	**0**	+	+	+	**0**	-	**Medium**	**Medium**	**Low**
Wildfire Mapping (12.A, 12.D) Create and distribute mapping and database of wildland access points for firefighters, develop enhanced mapping of urban/wildland interface.	+	+	+	+	+	**0**	+	+	+	+	**High**	**Medium**	**Medium**
Critical Facilities Survey (13.A) Undertake a year built and level of protection survey for all critical/emergency facilities and shelters to highlight structures built before codes and standards were put in place to provide protection from natural hazards, and pursue potential mitigation opportunities to protect these sites as funding becomes available.	+	+	+	+	**0**	+	+	+	+	+	**High**	**Medium**	**Medium**

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) **Town of Lowville**

Action	"-" = cost (unfavorable)				"0"=neutral or not applicable			"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Plan Review for Mitigation (1.B) Ensure that local comprehensive plans incorporate disaster mitigation techniques through a courtesy review of all draft plans by the County Economic Development and Planning Department	+	+	0	0	0	+	+	+	+	+	Medium	Low	Low
GIS Enhancement (2.A) Investigate expansion of hazard-related GIS capabilities via acquisition of HAZUS-MH to collect and develop more sophisticated hazard mapping and loss estimation. Use information in future plan updates. Ensure information will be available to the public and to local communities and agencies.	+	+	+	+	0	+	+	+	+	-	High	Medium	Medium
Outreach Program (3.B, 5.H) County coordination with local governments and other agencies to systematically contact isolated, vulnerable or special-needs population during severe winter storm events	-	+	-	+	0	+	0	+	+	-	High	Med	Medium
Auxiliary Power Supply (4.C) Conduct a countywide survey on status of auxiliary power supplies at all critical facilities.	+	+	-	+	0	+	+	+	+	+	High	Low	Medium
Wind Hazards Training (4.H) Provide trainings to municipalities regarding the development and implementation of programs to mitigate wind damage to private and public properties.	+	+	+	+	0	+	+	+	+	+	High	Low	Low

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) **Town of Lowville**

Action	"-" = cost (unfavorable)				"0"=neutral or not applicable			"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Winter Driving and Vehicle Preparation Education (5.C) Provide education opportunities for residents to learn winter driving techniques.	+	+	-	+	0	+	0	+	+	+	High	Low	High
Winter Storm Public Awareness and Preparation (5.C) Increase public awareness of personal responsibilities during emergencies, specifically winter storm events	+	+	-	+	0	+	0	+	+	+	High	Low	High
Emergency Warming Shelters (5.G) Establish warming shelters for vulnerable populations, including residents and stranded motorists	-	+	-	+	0	+	0	-	+	-	Medium	Medium	Low
Dam Safety (6.A, 6.C) Coordinate with NYSDEC and owners of all high and moderate hazard dams to work towards full compliance with applicable dam safety programs and development/updating of Emergency Action Plans including inundation mapping.	-	+	0	+	0	+	+	+	+	+	High	Low	Medium
Drought Preparedness (7.D) Publish and distribute literature (via the County web site, supplemented by hard copy distribution) on water conservation techniques and drought management strategies.	+	+	0	+	0	+	+	+	+	+	High	Low	Medium

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) **Town of Lowville**

Action	"-" = cost (unfavorable)				"0"=neutral or not applicable			"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Landslide Study (11.B) Conduct surveys to determine local vulnerabilities to landslides threatening property and roads, coordinate with municipalities to limit development in these areas and develop remedial measures for existing vulnerabilities.	-	+	+	0	**0**	+	+	+	**0**	-	**Medium**	**Medium**	**Low**
Wildfire Mapping (12.A, 12.D) Create and distribute mapping and database of wildland access points for firefighters, develop enhanced mapping of urban/wildland interface.	+	+	+	+	+	**0**	+	+	+	+	**High**	**Medium**	**Medium**
Critical Facilities Survey (13.A) Undertake a year built and level of protection survey for all critical/emergency facilities and shelters to highlight structures built before codes and standards were put in place to provide protection from natural hazards, and pursue potential mitigation opportunities to protect these sites as funding becomes available.	+	+	+	+	**0**	+	+	+	+	+	**High**	**Medium**	**Medium**

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) **Village of Lowville**

Action	"-" = cost (unfavorable)				"0"=neutral or not applicable			"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Plan Review for Mitigation (1.B) Ensure that local comprehensive plans incorporate disaster mitigation techniques through a courtesy review of all draft plans by the County Economic Development and Planning Department	+	+	0	0	0	+	+	+	+	+	Medium	Low	Low
GIS Enhancement (2.A) Investigate expansion of hazard-related GIS capabilities via acquisition of HAZUS-MH to collect and develop more sophisticated hazard mapping and loss estimation. Use information in future plan updates. Ensure information will be available to the public and to local communities and agencies.	+	+	+	+	0	+	+	+	+	-	High	Medium	Medium
Outreach Program (3.B, 5.H) County coordination with local governments and other agencies to systematically contact isolated, vulnerable or special-needs population during severe winter storm events	-	+	-	+	0	+	0	+	+	-	High	Med	Medium
Auxiliary Power Supply (4.C) Conduct a countywide survey on status of auxiliary power supplies at all critical facilities.	+	+	-	+	0	+	+	+	+	+	High	Low	Medium
Wind Hazards Training (4.H) Provide trainings to municipalities regarding the development and implementation of programs to mitigate wind damage to private and public properties.	+	+	+	+	0	+	+	+	+	+	High	Low	Low

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) **Village of Lowville**

Action	"-" = cost (unfavorable)				"0"=neutral or not applicable			"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Winter Driving and Vehicle Preparation Education (5.C) Provide education opportunities for residents to learn winter driving techniques.	+	+	-	+	0	+	0	+	+	+	High	Low	High
Winter Storm Public Awareness and Preparation (5.C) Increase public awareness of personal responsibilities during emergencies, specifically winter storm events	+	+	-	+	0	+	0	+	+	+	High	Low	High
Emergency Warming Shelters (5.G) Establish warming shelters for vulnerable populations, including residents and stranded motorists	-	+	-	+	0	+	0	-	+	-	Medium	Medium	Low
Dam Safety (6.A, 6.C) Coordinate with NYSDEC and owners of all high and moderate hazard dams to work towards full compliance with applicable dam safety programs and development/updating of Emergency Action Plans including inundation mapping.	-	+	0	+	0	+	+	+	+	+	High	Low	Medium
Drought Preparedness (7.D) Publish and distribute literature (via the County web site, supplemented by hard copy distribution) on water conservation techniques and drought management strategies.	+	+	0	+	0	+	+	+	+	+	High	Low	Medium

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) **Village of Lowville**

Action	"-" = cost (unfavorable)				"0"=neutral or not applicable			"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Landslide Study (11.B) Conduct surveys to determine local vulnerabilities to landslides threatening property and roads, coordinate with municipalities to limit development in these areas and develop remedial measures for existing vulnerabilities.	-	+	+	0	**0**	+	+	+	**0**	-	**Medium**	**Medium**	**Low**
Wildfire Mapping (12.A, 12.D) Create and distribute mapping and database of wildland access points for firefighters, develop enhanced mapping of urban/wildland interface.	+	+	+	+	+	**0**	+	+	+	+	**High**	**Medium**	**Medium**
Critical Facilities Survey (13.A) Undertake a year built and level of protection survey for all critical/emergency facilities and shelters to highlight structures built before codes and standards were put in place to provide protection from natural hazards, and pursue potential mitigation opportunities to protect these sites as funding becomes available.	+	+	+	+	**0**	+	+	+	+	+	**High**	**Medium**	**Medium**

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) **Village of Lyons Falls**

Action	"-" = cost (unfavorable)				"0"=neutral or not applicable			"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Plan Review for Mitigation (1.B) Ensure that local comprehensive plans incorporate disaster mitigation techniques through a courtesy review of all draft plans by the County Economic Development and Planning Department	+	+	0	0	0	+	+	+	+	+	Medium	Low	Low
GIS Enhancement (2.A) Investigate expansion of hazard-related GIS capabilities via acquisition of HAZUS-MH to collect and develop more sophisticated hazard mapping and loss estimation. Use information in future plan updates. Ensure information will be available to the public and to local communities and agencies.	+	+	+	+	0	+	+	+	+	-	High	Medium	Medium
Outreach Program (3.B, 5.H) County coordination with local governments and other agencies to systematically contact isolated, vulnerable or special-needs population during severe winter storm events	-	+	-	+	0	+	0	+	+	-	High	Med	Medium
Auxiliary Power Supply (4.C) Conduct a countywide survey on status of auxiliary power supplies at all critical facilities.	+	+	-	+	0	+	+	+	+	+	High	Low	Medium
Wind Hazards Training (4.H) Provide trainings to municipalities regarding the development and implementation of programs to mitigate wind damage to private and public properties.	+	+	+	+	0	+	+	+	+	+	High	Low	Low

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) **Village of Lyons Falls**

Action	"-" = cost (unfavorable)				"0"=neutral or not applicable			"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Winter Driving and Vehicle Preparation Education (5.C) Provide education opportunities for residents to learn winter driving techniques.	+	+	-	+	0	+	0	+	+	+	High	Low	High
Winter Storm Public Awareness and Preparation (5.C) Increase public awareness of personal responsibilities during emergencies, specifically winter storm events	+	+	-	+	0	+	0	+	+	+	High	Low	High
Emergency Warming Shelters (5.G) Establish warming shelters for vulnerable populations, including residents and stranded motorists	-	+	-	+	0	+	0	-	+	-	Medium	Medium	Low
Dam Safety (6.A, 6.C) Coordinate with NYSDEC and owners of all high and moderate hazard dams to work towards full compliance with applicable dam safety programs and development/updating of Emergency Action Plans including inundation mapping.	-	+	0	+	0	+	+	+	+	+	High	Low	Medium
Drought Preparedness (7.D) Publish and distribute literature (via the County web site, supplemented by hard copy distribution) on water conservation techniques and drought management strategies.	+	+	0	+	0	+	+	+	+	+	High	Low	Medium

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) **Village of Lyons Falls**

Action	"-" = cost (unfavorable)			"0"=neutral or not applicable				"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Landslide Study (11.B) Conduct surveys to determine local vulnerabilities to landslides threatening property and roads, coordinate with municipalities to limit development in these areas and develop remedial measures for existing vulnerabilities.	-	+	+	0	**0**	+	+	+	**0**	-	**Medium**	**Medium**	**Low**
Wildfire Mapping (12.A, 12.D) Create and distribute mapping and database of wildland access points for firefighters, develop enhanced mapping of urban/wildland interface.	+	+	+	+	+	**0**	+	+	+	+	**High**	**Medium**	**Medium**
Critical Facilities Survey (13.A) Undertake a year built and level of protection survey for all critical/emergency facilities and shelters to highlight structures built before codes and standards were put in place to provide protection from natural hazards, and pursue potential mitigation opportunities to protect these sites as funding becomes available.	+	+	+	+	**0**	+	+	+	+	+	**High**	**Medium**	**Medium**

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) **Town of Lyonsdale**

Action	"-" = cost (unfavorable)				"0"=neutral or not applicable			"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Plan Review for Mitigation (1.B) Ensure that local comprehensive plans incorporate disaster mitigation techniques through a courtesy review of all draft plans by the County Economic Development and Planning Department	+	+	0	0	0	+	+	+	+	+	Medium	Low	Low
GIS Enhancement (2.A) Investigate expansion of hazard-related GIS capabilities via acquisition of HAZUS-MH to collect and develop more sophisticated hazard mapping and loss estimation. Use information in future plan updates. Ensure information will be available to the public and to local communities and agencies.	+	+	+	+	0	+	+	+	+	-	High	Medium	Medium
Outreach Program (3.B, 5.H) County coordination with local governments and other agencies to systematically contact isolated, vulnerable or special-needs population during severe winter storm events	-	+	-	+	0	+	0	+	+	-	High	Med	Medium
Auxiliary Power Supply (4.C) Conduct a countywide survey on status of auxiliary power supplies at all critical facilities.	+	+	-	+	0	+	+	+	+	+	High	Low	Medium
Wind Hazards Training (4.H) Provide trainings to municipalities regarding the development and implementation of programs to mitigate wind damage to private and public properties.	+	+	+	+	0	+	+	+	+	+	High	Low	Low

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) **Town of Lyonsdale**

Action	"-" = cost (unfavorable)				"0"=neutral or not applicable			"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Winter Driving and Vehicle Preparation Education (5.C) Provide education opportunities for residents to learn winter driving techniques.	+	+	-	+	0	+	0	+	+	+	High	Low	High
Winter Storm Public Awareness and Preparation (5.C) Increase public awareness of personal responsibilities during emergencies, specifically winter storm events	+	+	-	+	0	+	0	+	+	+	High	Low	High
Emergency Warming Shelters (5.G) Establish warming shelters for vulnerable populations, including residents and stranded motorists	-	+	-	+	0	+	0	-	+	-	Medium	Medium	Low
Dam Safety (6.A, 6.C) Coordinate with NYSDEC and owners of all high and moderate hazard dams to work towards full compliance with applicable dam safety programs and development/updating of Emergency Action Plans including inundation mapping.	-	+	0	+	0	+	+	+	+	+	High	Low	Medium
Drought Preparedness (7.D) Publish and distribute literature (via the County web site, supplemented by hard copy distribution) on water conservation techniques and drought management strategies.	+	+	0	+	0	+	+	+	+	+	High	Low	Medium

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) **Town of Lyonsdale**

Action	"-" = cost (unfavorable)				"0"=neutral or not applicable			"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Landslide Study (11.B) Conduct surveys to determine local vulnerabilities to landslides threatening property and roads, coordinate with municipalities to limit development in these areas and develop remedial measures for existing vulnerabilities.	-	+	+	0	**0**	+	+	+	**0**	-	**Medium**	**Medium**	**Low**
Wildfire Mapping (12.A, 12.D) Create and distribute mapping and database of wildland access points for firefighters, develop enhanced mapping of urban/wildland interface.	+	+	+	+	+	**0**	+	+	+	+	**High**	**Medium**	**Medium**
Critical Facilities Survey (13.A) Undertake a year built and level of protection survey for all critical/emergency facilities and shelters to highlight structures built before codes and standards were put in place to provide protection from natural hazards, and pursue potential mitigation opportunities to protect these sites as funding becomes available.	+	+	+	+	**0**	+	+	+	+	+	**High**	**Medium**	**Medium**

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) **Town of Martinsburg**

Action	"-" = cost (unfavorable)				"0"=neutral or not applicable			"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Plan Review for Mitigation (1.B) Ensure that local comprehensive plans incorporate disaster mitigation techniques through a courtesy review of all draft plans by the County Economic Development and Planning Department	+	+	0	0	0	+	+	+	+	+	Medium	Low	Low
GIS Enhancement (2.A) Investigate expansion of hazard-related GIS capabilities via acquisition of HAZUS-MH to collect and develop more sophisticated hazard mapping and loss estimation. Use information in future plan updates. Ensure information will be available to the public and to local communities and agencies.	+	+	+	+	0	+	+	+	+	-	High	Medium	Medium
Outreach Program (3.B, 5.H) County coordination with local governments and other agencies to systematically contact isolated, vulnerable or special-needs population during severe winter storm events	-	+	-	+	0	+	0	+	+	-	High	Med	Medium
Auxiliary Power Supply (4.C) Conduct a countywide survey on status of auxiliary power supplies at all critical facilities.	+	+	-	+	0	+	+	+	+	+	High	Low	Medium
Wind Hazards Training (4.H) Provide trainings to municipalities regarding the development and implementation of programs to mitigate wind damage to private and public properties.	+	+	+	+	0	+	+	+	+	+	High	Low	Low

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) **Town of Martinsburg**

Action	"-" = cost (unfavorable)				"0"=neutral or not applicable			"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Winter Driving and Vehicle Preparation Education (5.C) Provide education opportunities for residents to learn winter driving techniques.	+	+	-	+	0	+	0	+	+	+	High	Low	High
Winter Storm Public Awareness and Preparation (5.C) Increase public awareness of personal responsibilities during emergencies, specifically winter storm events	+	+	-	+	0	+	0	+	+	+	High	Low	High
Emergency Warming Shelters (5.G) Establish warming shelters for vulnerable populations, including residents and stranded motorists	-	+	-	+	0	+	0	-	+	-	Medium	Medium	Low
Dam Safety (6.A, 6.C) Coordinate with NYSDEC and owners of all high and moderate hazard dams to work towards full compliance with applicable dam safety programs and development/updating of Emergency Action Plans including inundation mapping.	-	+	0	+	0	+	+	+	+	+	High	Low	Medium
Drought Preparedness (7.D) Publish and distribute literature (via the County web site, supplemented by hard copy distribution) on water conservation techniques and drought management strategies.	+	+	0	+	0	+	+	+	+	+	High	Low	Medium

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) **Town of Martinsburg**

Action	"-" = cost (unfavorable)				"0"=neutral or not applicable			"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Landslide Study (11.B) Conduct surveys to determine local vulnerabilities to landslides threatening property and roads, coordinate with municipalities to limit development in these areas and develop remedial measures for existing vulnerabilities.	-	+	+	0	**0**	+	+	+	**0**	-	**Medium**	**Medium**	**Low**
Wildfire Mapping (12.A, 12.D) Create and distribute mapping and database of wildland access points for firefighters, develop enhanced mapping of urban/wildland interface.	+	+	+	+	+	**0**	+	+	+	+	**High**	**Medium**	**Medium**
Critical Facilities Survey (13.A) Undertake a year built and level of protection survey for all critical/emergency facilities and shelters to highlight structures built before codes and standards were put in place to provide protection from natural hazards, and pursue potential mitigation opportunities to protect these sites as funding becomes available.	+	+	+	+	**0**	+	+	+	+	+	**High**	**Medium**	**Medium**

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) **Town of Montague**

Action	"-" = cost (unfavorable)				"0"=neutral or not applicable			"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Plan Review for Mitigation (1.B) Ensure that local comprehensive plans incorporate disaster mitigation techniques through a courtesy review of all draft plans by the County Economic Development and Planning Department	+	+	0	0	0	+	+	+	+	+	Medium	Low	Low
GIS Enhancement (2.A) Investigate expansion of hazard-related GIS capabilities via acquisition of HAZUS-MH to collect and develop more sophisticated hazard mapping and loss estimation. Use information in future plan updates. Ensure information will be available to the public and to local communities and agencies.	+	+	+	+	0	+	+	+	+	-	High	Medium	Medium
Outreach Program (3.B, 5.H) County coordination with local governments and other agencies to systematically contact isolated, vulnerable or special-needs population during severe winter storm events	-	+	-	+	0	+	0	+	+	-	High	Med	Medium
Auxiliary Power Supply (4.C) Conduct a countywide survey on status of auxiliary power supplies at all critical facilities.	+	+	-	+	0	+	+	+	+	+	High	Low	Medium
Wind Hazards Training (4.H) Provide trainings to municipalities regarding the development and implementation of programs to mitigate wind damage to private and public properties.	+	+	+	+	0	+	+	+	+	+	High	Low	Low

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) **Town of Montague**

Action	"-" = cost (unfavorable)				"0"=neutral or not applicable			"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Winter Driving and Vehicle Preparation Education (5.C) Provide education opportunities for residents to learn winter driving techniques.	+	+	-	+	0	+	0	+	+	+	High	Low	High
Winter Storm Public Awareness and Preparation (5.C) Increase public awareness of personal responsibilities during emergencies, specifically winter storm events	+	+	-	+	0	+	0	+	+	+	High	Low	High
Emergency Warming Shelters (5.G) Establish warming shelters for vulnerable populations, including residents and stranded motorists	-	+	-	+	0	+	0	-	+	-	Medium	Medium	Low
Dam Safety (6.A, 6.C) Coordinate with NYSDEC and owners of all high and moderate hazard dams to work towards full compliance with applicable dam safety programs and development/updating of Emergency Action Plans including inundation mapping.	-	+	0	+	0	+	+	+	+	+	High	Low	Medium
Drought Preparedness (7.D) Publish and distribute literature (via the County web site, supplemented by hard copy distribution) on water conservation techniques and drought management strategies.	+	+	0	+	0	+	+	+	+	+	High	Low	Medium

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) **Town of Montague**

Action	"-" = cost (unfavorable)				"0"=neutral or not applicable			"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Landslide Study (11.B) Conduct surveys to determine local vulnerabilities to landslides threatening property and roads, coordinate with municipalities to limit development in these areas and develop remedial measures for existing vulnerabilities.	-	+	+	0	**0**	+	+	+	**0**	-	**Medium**	**Medium**	**Low**
Wildfire Mapping (12.A, 12.D) Create and distribute mapping and database of wildland access points for firefighters, develop enhanced mapping of urban/wildland interface.	+	+	+	+	+	**0**	+	+	+	+	**High**	**Medium**	**Medium**
Critical Facilities Survey (13.A) Undertake a year built and level of protection survey for all critical/emergency facilities and shelters to highlight structures built before codes and standards were put in place to provide protection from natural hazards, and pursue potential mitigation opportunities to protect these sites as funding becomes available.	+	+	+	+	**0**	+	+	+	+	+	**High**	**Medium**	**Medium**

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) **Town of Osceola**

Action	"-" = cost (unfavorable)				"0"=neutral or not applicable			"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Plan Review for Mitigation (1.B) Ensure that local comprehensive plans incorporate disaster mitigation techniques through a courtesy review of all draft plans by the County Economic Development and Planning Department	+	+	0	0	0	+	+	+	+	+	Medium	Low	Low
GIS Enhancement (2.A) Investigate expansion of hazard-related GIS capabilities via acquisition of HAZUS-MH to collect and develop more sophisticated hazard mapping and loss estimation. Use information in future plan updates. Ensure information will be available to the public and to local communities and agencies.	+	+	+	+	0	+	+	+	+	-	High	Medium	Medium
Outreach Program (3.B, 5.H) County coordination with local governments and other agencies to systematically contact isolated, vulnerable or special-needs population during severe winter storm events	-	+	-	+	0	+	0	+	+	-	High	Med	Medium
Auxiliary Power Supply (4.C) Conduct a countywide survey on status of auxiliary power supplies at all critical facilities.	+	+	-	+	0	+	+	+	+	+	High	Low	Medium
Wind Hazards Training (4.H) Provide trainings to municipalities regarding the development and implementation of programs to mitigate wind damage to private and public properties.	+	+	+	+	0	+	+	+	+	+	High	Low	Low

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) **Town of Osceola**

Action	"-" = cost (unfavorable)				"0"=neutral or not applicable			"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Winter Driving and Vehicle Preparation Education (5.C) Provide education opportunities for residents to learn winter driving techniques.	+	+	-	+	0	+	0	+	+	+	High	Low	High
Winter Storm Public Awareness and Preparation (5.C) Increase public awareness of personal responsibilities during emergencies, specifically winter storm events	+	+	-	+	0	+	0	+	+	+	High	Low	High
Emergency Warming Shelters (5.G) Establish warming shelters for vulnerable populations, including residents and stranded motorists	-	+	-	+	0	+	0	-	+	-	Medium	Medium	Low
Dam Safety (6.A, 6.C) Coordinate with NYSDEC and owners of all high and moderate hazard dams to work towards full compliance with applicable dam safety programs and development/updating of Emergency Action Plans including inundation mapping.	-	+	0	+	0	+	+	+	+	+	High	Low	Medium
Drought Preparedness (7.D) Publish and distribute literature (via the County web site, supplemented by hard copy distribution) on water conservation techniques and drought management strategies.	+	+	0	+	0	+	+	+	+	+	High	Low	Medium

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) **Town of Osceola**

Action	"-" = cost (unfavorable)				"0"=neutral or not applicable			"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Landslide Study (11.B) Conduct surveys to determine local vulnerabilities to landslides threatening property and roads, coordinate with municipalities to limit development in these areas and develop remedial measures for existing vulnerabilities.	-	+	+	0	**0**	+	+	+	**0**	-	**Medium**	**Medium**	**Low**
Wildfire Mapping (12.A, 12.D) Create and distribute mapping and database of wildland access points for firefighters, develop enhanced mapping of urban/wildland interface.	+	+	+	+	+	**0**	+	+	+	+	**High**	**Medium**	**Medium**
Critical Facilities Survey (13.A) Undertake a year built and level of protection survey for all critical/emergency facilities and shelters to highlight structures built before codes and standards were put in place to provide protection from natural hazards, and pursue potential mitigation opportunities to protect these sites as funding becomes available.	+	+	+	+	**0**	+	+	+	+	+	**High**	**Medium**	**Medium**

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) **Town of Pinckney**

Action	"-" = cost (unfavorable)				"0"=neutral or not applicable			"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Plan Review for Mitigation (1.B) Ensure that local comprehensive plans incorporate disaster mitigation techniques through a courtesy review of all draft plans by the County Economic Development and Planning Department	+	+	0	0	0	+	+	+	+	+	Medium	Low	Low
GIS Enhancement (2.A) Investigate expansion of hazard-related GIS capabilities via acquisition of HAZUS-MH to collect and develop more sophisticated hazard mapping and loss estimation. Use information in future plan updates. Ensure information will be available to the public and to local communities and agencies.	+	+	+	+	0	+	+	+	+	-	High	Medium	Medium
Outreach Program (3.B, 5.H) County coordination with local governments and other agencies to systematically contact isolated, vulnerable or special-needs population during severe winter storm events	-	+	-	+	0	+	0	+	+	-	High	Med	Medium
Auxiliary Power Supply (4.C) Conduct a countywide survey on status of auxiliary power supplies at all critical facilities.	+	+	-	+	0	+	+	+	+	+	High	Low	Medium
Wind Hazards Training (4.H) Provide trainings to municipalities regarding the development and implementation of programs to mitigate wind damage to private and public properties.	+	+	+	+	0	+	+	+	+	+	High	Low	Low

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) **Town of Pinckney**

Action	"-" = cost (unfavorable)				"0"=neutral or not applicable			"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Winter Driving and Vehicle Preparation Education (5.C) Provide education opportunities for residents to learn winter driving techniques.	+	+	-	+	0	+	0	+	+	+	High	Low	High
Winter Storm Public Awareness and Preparation (5.C) Increase public awareness of personal responsibilities during emergencies, specifically winter storm events	+	+	-	+	0	+	0	+	+	+	High	Low	High
Emergency Warming Shelters (5.G) Establish warming shelters for vulnerable populations, including residents and stranded motorists	-	+	-	+	0	+	0	-	+	-	Medium	Medium	Low
Dam Safety (6.A, 6.C) Coordinate with NYSDEC and owners of all high and moderate hazard dams to work towards full compliance with applicable dam safety programs and development/updating of Emergency Action Plans including inundation mapping.	-	+	0	+	0	+	+	+	+	+	High	Low	Medium
Drought Preparedness (7.D) Publish and distribute literature (via the County web site, supplemented by hard copy distribution) on water conservation techniques and drought management strategies.	+	+	0	+	0	+	+	+	+	+	High	Low	Medium

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) **Town of Pinckney**

Action	"-" = cost (unfavorable)				"0"=neutral or not applicable			"+" = benefit (favorable)			(high, medium, or low)		
	S	**T**	**A**	**P**	**L**	**E**	**E**	**Can be implemented easily**	**Achieves multiple objectives**	**Can be implemented quickly**	**Overall Benefits**	**Overall Costs**	**Priority**
Landslide Study (11.B) Conduct surveys to determine local vulnerabilities to landslides threatening property and roads, coordinate with municipalities to limit development in these areas and develop remedial measures for existing vulnerabilities.	-	+	+	0	**0**	+	+	+	**0**	-	**Medium**	**Medium**	**Low**
Wildfire Mapping (12.A, 12.D) Create and distribute mapping and database of wildland access points for firefighters, develop enhanced mapping of urban/wildland interface.	+	+	+	+	+	**0**	+	+	+	+	**High**	**Medium**	**Medium**
Critical Facilities Survey (13.A) Undertake a year built and level of protection survey for all critical/emergency facilities and shelters to highlight structures built before codes and standards were put in place to provide protection from natural hazards, and pursue potential mitigation opportunities to protect these sites as funding becomes available.	+	+	+	+	**0**	+	+	+	+	+	**High**	**Medium**	**Medium**

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) **Village of Port Leyden**

Action	"-" = cost (unfavorable)				"0"=neutral or not applicable			"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Plan Review for Mitigation (1.B) Ensure that local comprehensive plans incorporate disaster mitigation techniques through a courtesy review of all draft plans by the County Economic Development and Planning Department	+	+	0	0	0	+	+	+	+	+	Medium	Low	Low
GIS Enhancement (2.A) Investigate expansion of hazard-related GIS capabilities via acquisition of HAZUS-MH to collect and develop more sophisticated hazard mapping and loss estimation. Use information in future plan updates. Ensure information will be available to the public and to local communities and agencies.	+	+	+	+	0	+	+	+	+	-	High	Medium	Medium
Outreach Program (3.B, 5.H) County coordination with local governments and other agencies to systematically contact isolated, vulnerable or special-needs population during severe winter storm events	-	+	-	+	0	+	0	+	+	-	High	Med	Medium
Auxiliary Power Supply (4.C) Conduct a countywide survey on status of auxiliary power supplies at all critical facilities.	+	+	-	+	0	+	+	+	+	+	High	Low	Medium
Wind Hazards Training (4.H) Provide trainings to municipalities regarding the development and implementation of programs to mitigate wind damage to private and public properties.	+	+	+	+	0	+	+	+	+	+	High	Low	Low

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) **Village of Port Leyden**

Action	"-" = cost (unfavorable)				"0"=neutral or not applicable			"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Winter Driving and Vehicle Preparation Education (5.C) Provide education opportunities for residents to learn winter driving techniques.	+	+	-	+	0	+	0	+	+	+	High	Low	High
Winter Storm Public Awareness and Preparation (5.C) Increase public awareness of personal responsibilities during emergencies, specifically winter storm events	+	+	-	+	0	+	0	+	+	+	High	Low	High
Emergency Warming Shelters (5.G) Establish warming shelters for vulnerable populations, including residents and stranded motorists	-	+	-	+	0	+	0	-	+	-	Medium	Medium	Low
Dam Safety (6.A, 6.C) Coordinate with NYSDEC and owners of all high and moderate hazard dams to work towards full compliance with applicable dam safety programs and development/updating of Emergency Action Plans including inundation mapping.	-	+	0	+	0	+	+	+	+	+	High	Low	Medium
Drought Preparedness (7.D) Publish and distribute literature (via the County web site, supplemented by hard copy distribution) on water conservation techniques and drought management strategies.	+	+	0	+	0	+	+	+	+	+	High	Low	Medium

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) **Village of Port Leyden**

Action	"-" = cost (unfavorable)				"0"=neutral or not applicable			"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Landslide Study (11.B) Conduct surveys to determine local vulnerabilities to landslides threatening property and roads, coordinate with municipalities to limit development in these areas and develop remedial measures for existing vulnerabilities.	-	+	+	0	**0**	+	+	+	**0**	-	**Medium**	**Medium**	**Low**
Wildfire Mapping (12.A, 12.D) Create and distribute mapping and database of wildland access points for firefighters, develop enhanced mapping of urban/wildland interface.	+	+	+	+	+	**0**	+	+	+	+	**High**	**Medium**	**Medium**
Critical Facilities Survey (13.A) Undertake a year built and level of protection survey for all critical/emergency facilities and shelters to highlight structures built before codes and standards were put in place to provide protection from natural hazards, and pursue potential mitigation opportunities to protect these sites as funding becomes available.	+	+	+	+	**0**	+	+	+	+	+	**High**	**Medium**	**Medium**

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) **Town of West Turin**

Action	"-" = cost (unfavorable)				"0"=neutral or not applicable			"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Plan Review for Mitigation (1.B) Ensure that local comprehensive plans incorporate disaster mitigation techniques through a courtesy review of all draft plans by the County Economic Development and Planning Department	+	+	0	0	0	+	+	+	+	+	Medium	Low	Low
GIS Enhancement (2.A) Investigate expansion of hazard-related GIS capabilities via acquisition of HAZUS-MH to collect and develop more sophisticated hazard mapping and loss estimation. Use information in future plan updates. Ensure information will be available to the public and to local communities and agencies.	+	+	+	+	0	+	+	+	+	-	High	Medium	Medium
Outreach Program (3.B, 5.H) County coordination with local governments and other agencies to systematically contact isolated, vulnerable or special-needs population during severe winter storm events	-	+	-	+	0	+	0	+	+	-	High	Med	Medium
Auxiliary Power Supply (4.C) Conduct a countywide survey on status of auxiliary power supplies at all critical facilities.	+	+	-	+	0	+	+	+	+	+	High	Low	Medium
Wind Hazards Training (4.H) Provide trainings to municipalities regarding the development and implementation of programs to mitigate wind damage to private and public properties.	+	+	+	+	0	+	+	+	+	+	High	Low	Low

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) **Town of West Turin**

Action	"-" = cost (unfavorable)				"0"=neutral or not applicable			"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Winter Driving and Vehicle Preparation Education (5.C) Provide education opportunities for residents to learn winter driving techniques.	+	+	-	+	0	+	0	+	+	+	High	Low	High
Winter Storm Public Awareness and Preparation (5.C) Increase public awareness of personal responsibilities during emergencies, specifically winter storm events	+	+	-	+	0	+	0	+	+	+	High	Low	High
Emergency Warming Shelters (5.G) Establish warming shelters for vulnerable populations, including residents and stranded motorists	-	+	-	+	0	+	0	-	+	-	Medium	Medium	Low
Dam Safety (6.A, 6.C) Coordinate with NYSDEC and owners of all high and moderate hazard dams to work towards full compliance with applicable dam safety programs and development/updating of Emergency Action Plans including inundation mapping.	-	+	0	+	0	+	+	+	+	+	High	Low	Medium
Drought Preparedness (7.D) Publish and distribute literature (via the County web site, supplemented by hard copy distribution) on water conservation techniques and drought management strategies.	+	+	0	+	0	+	+	+	+	+	High	Low	Medium

LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) **Town of West Turin**

Action	"-" = cost (unfavorable)			"0"=neutral or not applicable				"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Landslide Study (11.B) Conduct surveys to determine local vulnerabilities to landslides threatening property and roads, coordinate with municipalities to limit development in these areas and develop remedial measures for existing vulnerabilities.	-	+	+	0	**0**	+	+	+	**0**	-	**Medium**	**Medium**	**Low**
Wildfire Mapping (12.A, 12.D) Create and distribute mapping and database of wildland access points for firefighters, develop enhanced mapping of urban/wildland interface.	+	+	+	+	+	**0**	+	+	+	+	**High**	**Medium**	**Medium**
Critical Facilities Survey (13.A) Undertake a year built and level of protection survey for all critical/emergency facilities and shelters to highlight structures built before codes and standards were put in place to provide protection from natural hazards, and pursue potential mitigation opportunities to protect these sites as funding becomes available.	+	+	+	+	**0**	+	+	+	+	+	**High**	**Medium**	**Medium**

APPENDIX C –

PARTICIPATING JURISDICTIONS MITIGATION ACTION IMPLEMENTATION STRATEGIES

LEWIS COUNTY HAZARD MITIGATION PLAN - IMPLEMENTATION STRATEGY WORKSHEE

(Name of Jurisdiction) **County of Lewis**

Before completing this form, your jurisdiction should already have considered the full range of possible mitigation actions set forth in the Risk Assessment Interim Deliverable, selected a subset of the actions your jurisdiction would like to implement, AND filled out the "Prioritization Worksheet". Now, on this page, translate from the "Prioritization Worksheets" each action and its priority rank, then fill in the remainder of the row

PRIORITY*	Mitigation Action *	Please list the hazards that the action will address.	Please say whether the action will affect existing assets, future assets, or both?	What municipal department will take the lead on moving forward with the project?	What is the existing authority or local planning mechanism through which the action can be implemented?	What is the target date for project completion?	What is the estimated cost of the project? *(order of magnitude dollars, or qualitative high/med/low)*	What funding source do you anticipate? *(i.e., local staff time, local budget, grant funding, etc.)*
MEDIUM	GIS Enhancement Investigate expansion of hazard-related GIS capabilities via acquisition of HAZUS-MH to collect and develop more sophisticated hazard mapping and loss estimation. Use information in future plan updates. Ensure information will be available to the public and to local communities and agencies.	Earthquakes, Wind, and Flood	Both	Lewis County Emergency Management and local municipal agencies	Lewis County Emergency Management	2012	$50,000	Local budget Staff time HMGP
MEDIUM	Critical Facilities Survey Undertake a year built and level of protection survey for all critical/emergency facilities and shelters to highlight structures built before codes and standards were put in place to provide protection from natural hazards, and pursue potential mitigation opportunities to protect these sites as funding becomes available.	Wind/Tornado, Winter Storms, Earthquakes, and Flooding (including Ice Jams)	Existing	Lewis County Emergency Management and local municipal agencies	Lewis County Emergency Management and Building Codes	2012	$50,000	Local budget Staff time HMGP
LOW	Landslide Study Conduct surveys to determine local vulnerabilities to landslides threatening property and roads, coordinate with municipalities to limit development in these areas and develop remedial measures for existing vulnerabilities.	Landslides	Both	Lewis County Emergency Management and local municipal agencies	Soil and Water Conservation District	2015	$25,000	Local budget Staff time HMGP
MEDIUM	Dam Safety Coordinate with NYSDEC and owners of all high and moderate hazard dams to work towards full compliance with applicable dam safety programs and development/updating of Emergency Action Plans including inundation mapping.	Dam Failure	Both	Lewis County Emergency Management and local municipal agencies	Lewis County Emergency Management	2012	$10,000	Local budget Staff time HMGP
LOW	Plan Review for Mitigation Ensure that local comprehensive plans incorporate disaster mitigation techniques through a courtesy review of all draft plans by the County Economic Development and Planning Department	All Hazards	Both	Lewis County Department of Economic Development and Planning and local municipal agencies	Lewis County Dept. of Economic Development & Planning	2011 (continuous)	Low	Local budget Staff time

- ***"Priority" and "Mitigation Action" to be carried over from the STAPLEE worksheet***

LEWIS COUNTY HAZARD MITIGATION PLAN - IMPLEMENTATION STRATEGY WORKSHEET

(Name of Jurisdiction) **County of Lewis**

Before completing this form, your jurisdiction should already have considered the full range of possible mitigation actions set forth in the Risk Assessment Interim Deliverable, selected a subset of the actions that your jurisdiction would like to implement, AND filled out the "Prioritization Worksheet". Now, on this page, translate from the "Prioritization Worksheets" each action and its priority rank, then fill in the remainder of the row

PRIORITY*	Mitigation Action *	Please list the hazards that the action will address.	Please say whether the action will affect existing assets, future assets, or both?	What municipal department will take the lead on moving forward with the project?	What is the existing authority or local planning mechanism through which the action can be implemented?	What is the target date for project completion?	What is the estimated cost of the project? *(order of magnitude dollars, or qualitative high/med/low)*	What funding source do you anticipate? *(i.e., local staff time, local budget, grant funding, etc.)*
MED	Drought Preparedness Publish and distribute literature (via the County web site, supplemented by hard copy distribution) on water conservation techniques and drought management strategies.	Drought	Both	Lewis County Emergency Management and local municipal agencies	Lewis County Emergency Management	2012	$5,000	Budget HMGP PDM
HIGH	Town of Watson Streambank Erosion Stabilize streambank along Black River.	Public and private property damage, flooding	Both	Lewis County Highway Dept.	Lewis County Highway Dept.	2011	$250,000	HMGP
HIGH	Stormwater Retention, Lewis County General Hospital Install stormwater drainage system.	Public and private property damage and flooding	Both	Lewis County Highway Dept.	Lewis County Highway Dept.	2010	$200,000	HMGP
HIGH	Countywide FIRM Update Update flood hazard mapping for Black River and other areas.	Flooding	Both	Lewis County Soil and Water	Lewis County Soil and Water	2012	$200,000	Budget PDM
HIGH	Emergency Communications Purchase high band portable radio communications equipment.	Portable communications equipment for highway personnel during all hazard events	Both	Lewis County Highway Dept.	Lewis County Highway Dept.	2010	$85,000	HMGP Budget
MEDIUM	East Martinsburg Road, Town of Martinsburg Stabilize eroding roadbank.	Public and private property damage, flooding	Both	Lewis County Highway Dept.	Lewis County Highway Dept.	2011	$250,000	HMGP Budget

- ***"Priority" and "Mitigation Action" to be carried over from the STAPLEE worksheet***

LEWIS COUNTY HAZARD MITIGATION PLAN - IMPLEMENTATION STRATEGY WORKSHEET

(Name of Jurisdiction) **County of Lewis**

Before completing this form, your jurisdiction should already have considered the full range of possible mitigation actions set forth in the Risk Assessment Interim Deliverable, selected a subset of the actions that your jurisdiction would like to implement, AND filled out the "Prioritization Worksheet". Now, on this page, translate from the "Prioritization Worksheets" each action and its priority rank, then fill in the remainder of the row

PRIORITY*	Mitigation Action *	Please list the hazards that the action will address.	Please say whether the action will affect existing assets, future assets, or both?	What municipal department will take the lead on moving forward with the project?	What is the existing authority or local planning mechanism through which the action can be implemented?	What is the target date for project completion?	What is the estimated cost of the project? *(order of magnitude dollars, or qualitative high/med/low)*	What funding source do you anticipate? *(i.e., local staff time, local budget, grant funding, etc.)*
MEDIUM	Roaring Brook, Town of Martinsburg Stabilize eroding streambank.	Flooding and private property damage	Both	Lewis County Highway Dept.	Lewis County Highway Dept.	2013	$350,000	HMGP Budget
MEDIUM	East Martinsburg Road, Town of Watson Road elevation along major floodplain.	Flooding (including Ice Jams); Road closure and emergency response	Both	Lewis County Highway Dept.	Lewis County Highway Dept.	2014	$500,000	HMGP Budget
MEDIUM	Mill Creek, Village of Lowville Debris removal and erosion control.	Flooding (including Ice Jams); Property Damage	Both	Lewis County Soil and Water	Lewis County Soil and Water	2011	$10,000	HMGP
MEDIUM	Flood gauging Update flood gauging technology within county.	Computer software to identify flood elevations during flood event.	Both	Lewis County Emergency Management	Lewis County Emergency Management	2010	$20,000	HMGP
MEDIUM	Weather stations Purchase weather monitoring system.	All Atmospheric hazards: Computer software to monitor severe weather conditions in county and on Tug Hill.	Both	Lewis County Emergency Management	Lewis County Emergency Management	2011	$10,000	HMGP

- ***"Priority" and "Mitigation Action" to be carried over from the STAPLEE worksheet***

LEWIS COUNTY HAZARD MITIGATION PLAN - IMPLEMENTATION STRATEGY WORKSHEET

(Name of Jurisdiction) **County of Lewis**

Before completing this form, your jurisdiction should already have considered the full range of possible mitigation actions set forth in the Risk Assessment Interim Deliverable, selected a subset of the actions that your jurisdiction would like to implement, AND filled out the "Prioritization Worksheet". Now, on this page, translate from the "Prioritization Worksheets" each action and its priority rank, then fill in the remainder of the row

PRIORITY*	Mitigation Action *	Please list the hazards that the action will address.	Please say whether the action will affect existing assets, future assets, or both?	What municipal department will take the lead on moving forward with the project?	What is the existing authority or local planning mechanism through which the action can be implemented?	What is the target date for project completion?	What is the estimated cost of the project? *(order of magnitude dollars, or qualitative high/med/low)*	What funding source do you anticipate? *(i.e., local staff time, local budget, grant funding, etc.)*
MEDIUM	Snow fencing Purchase snow fence (living and other) to be used for wind and snow control throughout county.	Wind and Winter Storms	Both	Lewis County Soil and Water/Lewis County Highway	Lewis County Soil and Water/Lewis County Highway	2011	$25,000	HMGP PDM Budget
MEDIUM	Emergency Water Source Utilization of emergency water source centrally located in county.	Provide emergency water source for residents of county during all hazard events	Future	Lewis County Emergency Management	Lewis County Emergency Management	2012	$25,000	HMGP PDM Budget
MEDIUM	Certified Floodplain Managers Obtain/host specialist training and certification for floodplain managers.	Flooding	Future	Lewis County Emergency Management/Lewis County Codes Dept.	Lewis County Codes Dept.	2011	$1,500	HMGP Budget
MEDIUM	Wildfire Mapping Create and distribute mapping and database of wildland access points for firefighters, develop enhanced mapping of urban/wildland interface.	Wildfire	Both	Lewis County Emergency Management/Lewis County Planning and local municipal agencies	Lewis County Emergency Management/Lewis County Planning	2012	$1,000	HMGP Budget
MEDIUM	Winter Driving and Vehicle Preparation Education Provide education opportunities for residents to learn winter driving techniques.	Winter Storms and Wind	Both	Lewis County Emergency Management	Lewis County Emergency Management	2011	$1,000	Budget Local Staff Grant

- ***"Priority" and "Mitigation Action" to be carried over from the STAPLEE worksheet***

LEWIS COUNTY HAZARD MITIGATION PLAN - IMPLEMENTATION STRATEGY WORKSHEET

(Name of Jurisdiction) **County of Lewis**

Before completing this form, your jurisdiction should already have considered the full range of possible mitigation actions set forth in the Risk Assessment Interim Deliverable, selected a subset of the actions that your jurisdiction would like to implement, AND filled out the "Prioritization Worksheet". Now, on this page, translate from the "Prioritization Worksheets" each action and its priority rank, then fill in the remainder of the row

PRIORITY*	Mitigation Action *	Please list the hazards that the action will address.	Please say whether the action will affect existing assets, future assets, or both?	What municipal department will take the lead on moving forward with the project?	What is the existing authority or local planning mechanism through which the action can be implemented?	What is the target date for project completion?	What is the estimated cost of the project? *(order of magnitude dollars, or qualitative high/med/low)*	What funding source do you anticipate? *(i.e., local staff time, local budget, grant funding, etc.)*
HIGH	Winter Storm Preparedness and Awareness Increase public awareness of personal responsibilities during emergencies, specifically winter storm events.	Winter Storms and Snow	Both	Lewis County Emergency Management and local municipal agencies	Lewis County Emergency Management	2011	$2,000	HMGP Staff Budget
LOW	Emergency Warming Shelters Establish warming shelters for vulnerable populations, including residents and stranded motorists.	Extreme Temperatures and Winter Storms	Future	Lewis County Emergency Management and local municipal agencies	Lewis County Emergency Management	2012	$25,000	HMGP PDM Budget
MEDIUM	Outreach Program County coordination with local governments and other agencies to systematically contact isolated, vulnerable or special-needs populations during severe winter storm events.	Winter Storms and Extreme temperatures	Future	Lewis County Emergency Management and local municipal agencies	Lewis County Emergency management	2012	$1,500	HMGP Budget Staff
MEDIUM	Auxiliary Power Supply Conduct a countywide survey of the status of auxiliary power supplies at all critical facilities in all municipalities.	Winter Storms, Wind, Tornado	Existing	Lewis County Emergency Management and local municipal agencies	Lewis County Emergency Management/Lewis County Planning	2012	$5,000	HMGP Budget
LOW	Wind Hazards Training Provide training to municipalities regarding the development and implementation of programs to mitigate wind damage to private and public properties.	Wind, Tornado	Both	Lewis County Emergency Management and local municipal agencies	Lewis County Emergency Management	2011	$2,500	Budget Local Staff Grant

- ***"Priority" and "Mitigation Action" to be carried over from the STAPLEE worksheet***

LEWIS COUNTY HAZARD MITIGATION PLAN - IMPLEMENTATION STRATEGY WORKSHEET

(Name of Jurisdiction) **Village of Castorland**

Before completing this form, your jurisdiction should already have considered the full range of possible mitigation actions set forth in the Risk Assessment Interim Deliverable, selected a subset of the actions that your jurisdiction would like to implement, AND filled out the "Prioritization Worksheet". Now, on this page, translate from the "Prioritization Worksheets" each action and its priority rank, then fill in the remainder of the row

PRIORITY*	Mitigation Action *	Please list the hazards that the action will address.	Please say whether the action will affect existing assets, future assets, or both?	What municipal department will take the lead on moving forward with the project?	What is the existing authority or local planning mechanism through which the action can be implemented?	What is the target date for project completion?	What is the estimated cost of the project? *(order of magnitude dollars, or qualitative high/med/low)*	What funding source do you anticipate? *(i.e., local staff time, local budget, grant funding, etc.)*
High	Replace current sewage treatment facility: relocate out of the floodplain, with improvements and enlargements to accommodate future flows	Flooding of critical facility, pollution of Black River	Existing	Public works, Clerk/Treasurer	Trustees, DEC	2012	$5,000,000	Local funding Grants Bonds
High	Install new storm sewers	Flooding	Both	Public Works	Trustees	2012	$20,000	Local funds Grants
High	Relocate and replace current emergency alarm system	Multiple: Provide better access to emergency personnel and community	Both	Public Works Fire Company	Trustees Fire Company	2011	$10,000	Local funds Grants
High	Purchase a large generator (20,000kw) for use during long periods of power outages	Multiple, provide water in case of emergency	Both	Public Works	Trustees	2011	$5,000	Local funds Grants

**** "Priority" and "Mitigation Action" to be carried over from the STAPLEE worksheet***

LEWIS COUNTY HAZARD MITIGATION PLAN - IMPLEMENTATION STRATEGY WORKSHEET

(Name of Jurisdiction) Village of Constableville

Before completing this form, your jurisdiction should already have considered the full range of possible mitigation actions set forth in the Risk Assessment Interim Deliverable, selected a subset of the actions that your jurisdiction would like to implement, AND filled out the "Prioritization Worksheet". Now, on this page, translate from the "Prioritization Worksheets" each action and its priority rank, then fill in the remainder of the row

PRIORITY*	Mitigation Action *	Please list the hazards that the action will address.	Please say whether the action will affect existing assets, future assets, or both?	What municipal department will take the lead on moving forward with the project?	What is the existing authority or local planning mechanism through which the action can be implemented?	What is the target date for project completion?	What is the estimated cost of the project? *(order of magnitude dollars, or qualitative high/med/low)*	What funding source do you anticipate? *(i.e., local staff time, local budget, grant funding, etc.)*
Med.	Rebuild High St.	Flooding of + Washing out of High St.	Both	Village of Constableville	Mayor	Within 5 years	$50,000.00 to $100,000.00	Local Budget
Low.	Upgrade existing storm drains on North Main Street	Flooding in cellars of residents + ponding in road	Both	Village of Constableville	Mayor	Within 7 years	$100,000.00 to $150,000.00	Local Budget
Med.	Replace box culvert under Main Street	Chance of collapse, and possible flooding of Village of Constableville	Both	Village of Constableville	Mayor	Within 9 years	$100,000.00 to 150,000.00	Local Budget

**** "Priority" and "Mitigation Action" to be carried over from the STAPLEE worksheet***

LEWIS COUNTY HAZARD MITIGATION PLAN - IMPLEMENTATION STRATEGY WORKSHEET

(Name of Jurisdiction) Town of Croghan, NY

Before completing this form, your jurisdiction should already have considered the full range of possible mitigation actions set forth in the Risk Assessment Interim Deliverable, selected a subset of the actions that your jurisdiction would like to implement, AND filled out the "Prioritization Worksheet". Now, on this page, translate from the "Prioritization Worksheets" each action and its priority rank, then fill in the remainder of the row

PRIORITY*	Mitigation Action *	Please list the hazards that the action will address.	Please say whether the action will affect existing assets, future assets, or both?	What municipal department will take the lead on moving forward with the project?	What is the existing authority or local planning mechanism through which the action can be implemented?	What is the target date for project completion?	What is the estimated cost of the project? *(order of magnitude dollars, or qualitative high/med/low)*	What funding source do you anticipate? *(i.e., local staff time, local budget, grant funding, etc.)*
High	Culvert Pipe on Steiner Road Add culvert to increase water flow	Road Damage; Flooding; Private Property Damage; Silting of Water	Existing	Town of Croghan Highway Dept.	Town of Croghan Highway Dept.	2011	$20,000	Local staff Local budget HMGP
High	Prevent ice damage to back wall of town highway garage	Public property damage during winter storms/extreme cold temperatures	Both	Town of Croghan Highway Dept.	Town of Croghan Highway Dept.	2011	$45,000	Local staff Local budget HMGP
Med	Bridge repair on Jerden Falls Road Change bridge structure to better accommodate water flow	Public property damage; flooding	Both	Town of Croghan Highway Dept. and Lewis County Highway Dept.	Town of Croghan Highway Dept. and Lewis County Highway Dept.	2012	$500,000-$1,000,000	Local staff Local budget HMGP

LEWIS COUNTY HAZARD MITIGATION PLAN - IMPLEMENTATION STRATEGY WORKSHEET

(Name of Jurisdiction) Village of Croghan

Before completing this form, your jurisdiction should already have considered the full range of possible mitigation actions set forth in the Risk Assessment Interim Deliverable, selected a subset of the actions that your jurisdiction would like to implement, AND filled out the "Prioritization Worksheet". Now, on this page, translate from the "Prioritization Worksheets" each action and its priority rank, then fill in the remainder of the row

PRIORITY*	Mitigation Action *	Please list the hazards that the action will address.	Please say whether the action will affect existing assets, future assets, or both?	What municipal department will take the lead on moving forward with the project?	What is the existing authority or local planning mechanism through which the action can be implemented?	What is the target date for project completion?	What is the estimated cost of the project? *(order of magnitude dollars, or qualitative high/med/low)*	What funding source do you anticipate? *(i.e., local staff time, local budget, grant funding, etc.)*
HIGH	Removing of trees that in a high wind threaten damage to emergency power (which kicks in during power outages) that operates the water plant supplying water to the Village of Croghan.	Wind damage to water plant, well heads and emergency generator.	Existing	Village Board and Dept. of Public Works	Village Board	Fall 2011	$2,000	Local Budget
A. LOW **B. MED** **C. MED**	Prevent flooding of the sewer beds from high water (flooding) of the Beaver River and inflow and infiltration to the sewer system caused by extreme weather related occurrences. A. Raise berms at the WWTF to mitigate inflow. B. Improve consumer compliance with existing Sewer Law. C. Locate and eliminate I & I in sewer infrastructure.	A. Inundation from Beaver River overflowing its banks. B. High I&I from extreme weather. C. High I&I from extreme weather.	A. Both B. Both C. Both	A. Village Board B. Village Board C. Village Board	A. Village Board B. Village Board C. Village Board	A. Ongoing B. Ongoing C. Ongoing	A.. High B. Low C. High	A. Local Budget B. Local Budget C. Local Budget
MED	Clearing a 25ô wide swath the 4.76 miles the Village of Croghan water line runs from the wellhead to the Village to protect the line from wind damage from uprooting of trees.	Uprooting trees damaging the waterline during high wind events.	Both	Village Board and Dept. of Public Works	Village Board	Ongoing	High	Local Budget
HIGH	Repair/ rehabilitate the Croghan Dam	FLOODING, ICE JAMS, EARTHQUATE AND DAM FAILURE	BOTH	Lewis County Development Corporation	Lewis County Development Corporation	2015	$1.3 M	FEMA,NYSERDA, CDBG, USDA, SHPPO, NNYCF, Iroquois Gas, National Grid, member item, stimulus $, local funding, etc.

**** "Priority" and "Mitigation Action" to be carried over from the STAPLEE worksheet***

LEWIS COUNTY HAZARD MITIGATION PLAN - IMPLEMENTATION STRATEGY WORKSHEET

(Name of Jurisdiction) T/o Denmark

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PRIORITY	Mitigation Action *	Please list the hazards that the action will address.	Please say whether the action will affect existing assets, future assets, or both?	What municipal department will take the lead on moving forward with the project?	What is the existing authority or local planning mechanism through which the action can be implemented?	What is the target date for project completion?	What is the estimated cost of the project? *(order of magnitude dollars, or qualitative high/med/low)*	What funding source do you anticipate? *(i.e., local staff time, local budget, grant funding, etc.)*
Med	Snow Fencing, Living And Other	Public And Private Property Damage	Both	Denmark	Denmark	2012	50,000.00	HMGP
Med	Road elevation Along Major Flood Plain Beds	Public And Private Property Damage	Both	Denmark	Denmark	2015	500,000.00	HMGP
Med	Film Updates Update Flood Plain Maps	Flooding	Both	Lewis Co. Soil & Water	Lewis Co. Soil & Water	2012	10,000.00	Budget
High	Emergency Communications	Public	Both	Lewis Co	Lewis Co	2013	300,000.00	HMGP
Med	Culvert Replacement	Public And Private	Both	Denmark	Denmark	2012	25,000.00	Budget

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LEWIS COUNTY HAZARD MITIGATION PLAN - IMPLEMENTATION STRATEGY WORKSHEET

(Name of Jurisdiction) Town of Diana

Before completing this form, your jurisdiction should already have considered the full range of possible mitigation actions set forth in the Risk Assessment Interim Deliverable, selected a subset of the actions that your jurisdiction would like to implement, AND filled out the "Prioritization Worksheet". Now, on this page, translate from the "Prioritization Worksheets" each action and its priority rank, then fill in the remainder of the row

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HIGH	Replace bridge on Henry Rd with culvert. Bridge is too narrow	Road damage, Flooding, Silting of water, Plowing Hazard during winter storms	Both	Town of Diana Hwy Dept	Town of Diana Hwy Dept Lewis Co Hwy Dept	2010	$25,000	Local Staff Local Budget HMGP
HIGH	Replace culvert with larger size to increase Water flow	Road damage, Flooding of private property, Silting of water,	Both	Town of Diana Hwy Dept	Town of Diana Hwy Dept Lewis Co Hwy Dept	2010	$25,000	Local Staff Local Budget HMGP
HIGH	Replace small, narrow bridge with larger culvert	Road damage, Flooding, Silting of water, Plowing Hazard during winter storms	Both	Town of Diana Hwy Dept	Town of Diana Hwy Dept Lewis Co Hwy Dept	2011	$20,000	Local Staff Local Budget HMGP

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LEWIS COUNTY HAZARD MITIGATION PLAN - IMPLEMENTATION STRATEGY WORKSHEET

(Name of Jurisdiction) Town Of Greig

Before completing this form, your jurisdiction should already have considered the full range of possible mitigation actions set forth in the Risk Assessment Interim Deliverable, selected a subset of the actions that your jurisdiction would like to implement, AND filled out the "Prioritization Worksheet". Now, on this page, translate from the "Prioritization Worksheets" each action and its priority rank, then fill in the remainder of the row

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Medium	Eatonville Road ï Replace 3 culverts with larger size. Clean ditch line for ¾ miles on the North Side of the road.	Public and private property damage and flooding	Both	Town Highway Department	Town Highway Department	2011	Med	Budget
Low	Jones Road ï Clean ditch line and replace 2 culverts with larger size.	Public and private property damage and flooding	Both	Town Highway Department	Town Highway Department	2011	Med	Budget
High	Chases Lake Road ï Remove large trees that are dead or have several dead limbs that will fall into roadway in high winds.	Public and private property damage due to high wind and winter storms	Both	Town Highway Department	Town Highway Department	2011	High	Budget
Medium	Chases Lake Road (Hill Section) ï Repair shoulders and replace shoulder material with non-erosive materials (stone).	Public and private property damage and flooding	Both	Town Highway Department	Town Highway Department	2011	Med	Budget
High	Rumble Road ï Repair and line ditches so run-off water will not destroy shoulder and edges of roadway.	Public property damage and flooding	Both	Town Highway Department	Town Highway Department	2011	Med	Budget

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LEWIS COUNTY HAZARD MITIGATION PLAN - IMPLEMENTATION STRATEGY WORKSHEET

(Name of Jurisdiction) Town Of Greig

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Medium	Partridgeville Road Bridge ï Repair Southside Wingwall, remove storm debris from the upside of the bridge.	Bridge safety and flooding	Existing	Town Highway Department	Town Highway Department	2011	High	Budget

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LEWIS COUNTY HAZARD MITIGATION PLAN - IMPLEMENTATION STRATEGY WORKSHEET

(Name of Jurisdiction) Town of Harrisburg

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High	Obrien Rd - Moody Rd Intersection	Road Flooding Erosion Safety at Intersection	both	Highway	Town Board	Dependant on funding	high	local budget + grant funding
High	Kubinski Embankment	Bank Erosion - Safety - in building - road erosion	both	Highway	"	"	Medium	"
Low	Bochard Road Culvert	road flooding - erosion - safety	both	"	"	"	~~med~~ low	"
Med	AUSTIN Rd Culvert Rim Rd intersection	bank erosion flooding	both	"	"	"	low	"
Low	Bochart Road Culvert (West of Sears Road RR)	Flooding - erosion	both	"	"	"	low	"

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LEWIS COUNTY HAZARD MITIGATION PLAN - IMPLEMENTATION STRATEGY WORKSHEET

(Name of Jurisdiction) Town of Lewis

Before completing this form, your jurisdiction should already have considered the full range of possible mitigation actions set forth in the Risk Assessment Interim Deliverable, selected a subset of the actions that your jurisdiction would like to implement, AND filled out the "Prioritization Worksheet". Now, on this page, translate from the "Prioritization Worksheets" each action and its priority rank, then fill in the remainder of the row

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High	Rome City Dam Ensure compliance with dam regulations	Flooding ï in nighboring Oneida County	Both	Town Board	Town Board	2010	$0	Local staff time
High	Firemanôs Pond Located along East Branch Mohawk River in West Leyden Drain the pond and construct a new dam.	Downstream flooding; Damage to Bridge to Route 26	Both	Fire Department and Town Board	Fire Department and Town Board	2011/2012	$50,000-$75,000	Local Budget Local Staff Grant Funding
Low	Statzer Road ï between Kirk Road and Mowers Road Flash flooding and sudden snowmelt Rehabilitate culvert to allow for flash flooding events	Flooding	Both	Highway Department	Highway Department	2013	$10,000	Local Budget, Grant Funding Local Staff
Low	Statzer Road ï half mile west of Kirk Road Flash flooding and sudden snowmelt Rehabilitate culvert to allow for flash flooding events	Flooding	Both	Highway Department	Highway Department	2013	$5,000	Local Budget, Grant Funding Local Staff
Low	Snowfencing 4 miles on Osceola Road Chronic drifting concerns	Wind and Winter Storms	Both	Highway Department	Highway Department	2013	$5,000	Local Budget Grant Funding Local Staff

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LEWIS COUNTY HAZARD MITIGATION PLAN - IMPLEMENTATION STRATEGY WORKSHEET

(Name of Jurisdiction) Town of Leyden

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Low	Build up streambanks along Black River at Denley Dam	Flooding	Both	Highway Dept.	Town Board	2015	$10,000	Staff Budget Grants
High	Enforce compliance with dam safety procedures at Denley Dam	Flooding	Both	Town Board	Town Board	2015	Low	Staff Budget
Low	Build up streambanks along Black River at Port Leyden ï Lower Dam	Flooding	Both	Highway Dept.	Town Board	2015	$10,000	Staff Budget Grants
High	Enforce compliance with dam safety procedures at Port Leyden ï Lower Dam	Flooding	Both	Town Board	Town Board	2015	Low	Staff Budget
Low	Hydrologic and hydraulic analysis to study existing flooding and waterflow concerns at Davis Bridge along Black River	Flooding Emergency Management(public safety concerns)	Both	Town Board	Town Board	2015	$30,000	Budget Grants
Low	Snowfencing for snow drifting control ï throughout town	Winter storms, heavy snow, wind	Both	Highway Dept.	Highway Dept	2013	$10,000	Budget Staff Grants

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Med	**Town of Leyden Continued** Replace culvert along Stuckie Road because of high water flooding events	Flooding	Both	Highway	Highway dept.	2013	$150,000	Local budget Staff Grant
Med.	Replace culvert along Iseneker Road because of high water flooding events.	Flooding	Both	Highway	Highway	2015	$150,000	Local budget Staff Grant

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LEWIS COUNTY HAZARD MITIGATION PLAN - IMPLEMENTATION STRATEGY WORKSHEET

(Name of Jurisdiction) Town of Lowville

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High	Training for Staff to include Code/Zoning Office, Town Highway Department	All	Both	T/V Boards	T/V Boards	12/31/2010	$4,000 +/-	Local staff/budget/grant
High	Generator/Power Plan for T/V Offices located at 5533 Bostwick Street	All	Both	T/V Boards	T/V Boards	12/31/2010	$40,000 +/-	Local grant
High	Bridge Replacement Due to Under Sizing, choking, halo water upstream Boshart Road, Town of Lowville	Road Damage, flooding upstream, soil erosion	Direct Effect of Exiting Assets	Town Board	Town Highway Dept	2012	$175,000 - $200,000 Medium	Local staff, budget, grant funding
High	Culvert Replacement due to insufficient flow, flooding properties and structures, East Road, Town of Lowville	Road Damage and flooding of private structure	Both	Town Board	Town Highway Dept	2010	$20,000 Medium	Local Staff, budget

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Medium	**Town of Lowville Continued** Culvert Replacement due to insufficient flow, flooding the roadway, creating damage to infrastructure, East Road, Town of Lowville	Road Damage, flooding RR Crossing	Existing Assets	Town Board	Town Highway Dept	2010	$10,000 Low	Local staff, budget
High	Early warning to persons located in the flood plain ï Coordinate with County	All	Both	County of Lewis	County of Lewis	2010	Unknown	All
High	Review exiting local information to ensure consistency with goals and objectives	All	Both	Town Board	Town Board	2010	$20,000	All
High	Initiate River Bank Clean Up ï Potential for Black River Dredging to clear of items which contribute to flooding ï Consider non-structural flood hazards including roadways and other Town/Village infrastructure	All	Both	Town Board & County of Lewis	Town Board & County of Lewis	2012	$2,000,000	All
High	Evaluate participation in the CRS for four (4) individuals	All	Both	Town Board	Town Board	2010	$5,000	All
High	Encourage development and enforcement of wind-resistant building siting and construction codes.	All	Both	Town Board	Town Board	2010	None	
High	Identify and address obstructions to surface water drainage	All	Both	Town Board	Town Board	2010	$5,000	All
High	Coordinate protocol with County Emergency Services Coordinator for notification of key officials involved with the CRS	All	Both	Town Board	Town Board	2010	None	
High	Identification of evacuation plans, routes, policies and procedures for the full range of contingencies and geographic areas of the jurisdictions and coordinate with County.	All	Both	Town Board	Town Board	2010	$5,000	All

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High	**Town of Lowville Continued** Identify areas and specific residents who would need evacuation assistance, including residence who lack transportation, and develop evacuation assistance plans.	All	Both	Town Board	Town Board	2010	$5,000	All
High	Monitor condition and maintain repair of town roads and road banks in high flood hazard areas.	All	Both	Town Board	Town Board	2010	None	
High	Identify and address obstructions to surface water drainage.	All	Both	Town Board	Town Board	2010	None	
High	Review existing local plans and efforts to ensure consistency with this plan's goals and objectives, and integrate the goals, objectives and activities from this plan into existing regulatory documents and programs, where appropriate (including zoning ordinances, building codes, and land use policies.)	All	Both	Town Board	Town Board	2010	None	
High	Assist in updating the flood plain (FIRM) maps.	Flood/Ice Jams	Both	Town Board	Town Board	2010	None	
High	Continue participation in the National Flood Insurance Program (NFIP)	Flood/Ice Jams	Both	Town Board	Town Board	2010	None	

LEWIS COUNTY HAZARD MITIGATION PLAN - IMPLEMENTATION STRATEGY WORKSHEET

(Name of Jurisdiction) VILLAGE OF LOWVILLE

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MEDIUM	Construction of concrete or other type retaining wall on South side of Mill Creek at a location just East of the East State Street bridge. Flooding and/or Ice Jams of Mill Creek at this location could potentially exceed the banks and penetrate the waste water treatment ponds causing waste water to flood into the Black River.	FLOOD ICE JAM	BOTH	PUBLIC WORKS	VILLAGE BOARD PLANNING DEPT.	NO DATE SET	HIGH	LOCAL BUDGET AND GRANT FUNDING
MEDIUM	Reinforce or reconstruct the stone/earthen wall on the North side of Mill Creek at a location just West of the State Street bridge. Currently this location has approximately a 10 to 12 foot diameter section that has already fallen out of the wall and bottom third of the wall is bowing outwards towards Mill Creek.	FLOOD ICE JAM	BOTH	PUBLIC WORKS	VILLAGE BOARD PLANNING DEPT.	NO DATE SET	HIGH	GRANT FUNDING
MEDIUM	Implementation of a portable power generating plant at the Town/Village of Lowville Offices so that daily operations may continue during power outages. This location may also be considered for a possible shelter location in the event of stranded motorists or residents left without electricity for extended periods.	EXTREME WIND LIGHTENING NORðEASTER WINTER STORM	BOTH	POLICE DEPT.	VILLAGE BOARD	NO DATE SET	MEDIUM	LOCAL STAFF TIME GRANT FUNDING
MEDIUM	Village Snow Removal ï Site alternative location for snow dumping.	WINTER STORMS	Both	Village Board	Village DPW	Winter 2010-2011		Local staff
MEDIUM	Maintain winter parking regulations to allow for proper snow removal	WINTER STORMS	Both	Village DPW & Police Dept	Village DPW & Police Dept	2010		Budget
MEDIUM	Retaining Wall and/or Elevation of Water Treatment Plant	FLOOD	Both	T/V Boards	T/V Boards	12/31/2010	$200,000 +/-	Local grant

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LEWIS COUNTY HAZARD MITIGATION PLAN - IMPLEMENTATION STRATEGY WORKSHEET

(Name of Jurisdiction) Village of Lyons Falls, NY Village of Lyons Falls

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High	Replace the bridge/culvert on Center St., presently travel restrictions over bridge regarding weight.	Flooding & erosion	Both, improves property and critical infrastructure and fire trucks will be able to drive over it.	Village Board	Village Board	August 2010	$300,000-high	Grant funding and local budget
Medium	Tree trimming and removal through out the village	Ice storms, snow storms, wind storms	Both	DPW	Village board	October 2012	Low, staff time	Local budget
Low	Repair present and install new storm water drainage system	Flooding & erosion	Both	Village Board	Village Board	November 2014	$500,,000-high TBD	Grants and local budget

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LEWIS COUNTY HAZARD MITIGATION PLAN - IMPLEMENTATION STRATEGY WORKSHEET

(Name of Jurisdiction) Town of Lyonsdale

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High	Bridge Replacement - N. side Moose River on Lowdale Rd (Raise roads)	Safety - Flooding Ice Jams	Both	Lewis co. + Lyondale Highway Depts	Town Board Highway Depts Lewis Co Legislature	?	High	All
Med	Smaller Gouldtown Bridge S. side Moose River on Shibley Rd	Flooding + ice Jams	Both	Lewis Co + Lyonsdale Highway Depts	Town Board Lewis Co Legislators	?	High	All
Med	Wash outs - Hill on Shibley Rd J. Smith's driveway (hill) on Pearl St.	Wash outs	existing	Town Highway Dept	Town Highway	? When money available	Low - med	All
High	Culvert replacement - All need larger. Hoag Rd - Shibley Rd by Dave Post. Rumble Rd by Ronald Farr. Moose River Rd by Mike Scanton. River Rd (three 3) Knottons Bend, Sand pit + by cattle pass	Flooding	Both	Town Highway Dept	Town Highway Dept	? When money available	High - med	All
High	Portable generators and pumps for Port Leyden + Lyons Falls fire departments	Cellar Flooding Forest + grass fires etc	Both	Firemen	Firemen	when money Available	med	All
High	Replace old Fire Hydrants and water lines.	Fire Protection	Both	Firemen Villages Town	Villages Firemen Town	? When money Available	High	All

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LEWIS COUNTY HAZARD MITIGATION PLAN - IMPLEMENTATION STRATEGY WORKSHEET

(Name of Jurisdiction) Town of Martinsburg

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Medium	Tap storm drain and insert pipe	Flooding	Both	Town Board	Planning Board	October 2012	Low - $20,000	Local budget Local staff Grant funding
Low	Locate and purchase land outside of floodplain to relocate the sewage treatment facility	Flooding	Both	Town Board	Town Board	October 2013	High - $1,000,000	Grant funding Local budget
High	Extend shoulders and line ditches with asphalt to prevent erosion along Flat Rock and Whitaker Roads	Flooding and Winter Storms	Both	Highway Dept.	Highway Dept	October 2012	Low - $15,000	Local budget Local staff

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LEWIS COUNTY HAZARD MITIGATION PLAN - IMPLEMENTATION STRATEGY WORKSHEET

(Name of Jurisdiction) Town of Montague

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High	Gardner Rd.	Road flooding	Both	Highway	Town Board	Dependent on D.E.C.	Medium	Local budget & staff Grant funding
High	Gardner Rd.	Road flooding	Both	Highway	Town Board	Dependent on D.E.C.	Low	Local budget & staff Grant funding
High	Gardner Rd.	Road flooding	Both	Highway	Town Board	Dependent on D.E.C.	Low	Local budget & staff Grant funding
High	Parker Rd.	Road flooding	Both	Highway	Town Board	Dependent on D.E.C.	Low	Local budget & staff Grant funding

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LEWIS COUNTY HAZARD MITIGATION PLAN - IMPLEMENTATION STRATEGY WORKSHEET

(Name of Jurisdiction) Town of Osceola - Lewis Co.

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High	Ryan Road - replace culverts Raise road height on replace gravel fill. This is a constant problem due to flooding	Will allow for more water to flow then the road	~~of~~ the cost to taxpayer	Town Hwy Supt.	Town Board	2012	high	Local funding and grants State & Fed
High	North Osceola Road - Replace Culvert at Prince Brook Concrete has broken and road needs gravel work	reduce road flooding. Widen road and repair guard rails	~~Have~~ Stop loss of road	Town Hwy Supt.	Town Board	2010	med	local & State
Med	North Osceola Rd (between Jacobs Rd & Corner at Gallop) replace culvert and rebuild road. Culvert plugs and floods roadway.	reduce road flooding	~~Have~~ Stop loss of road	Town Hwy Supt.	Town Board	2011	high	local & State
Low	Potter Road - Bottom of hill Replace culvert with larger one. Raise road height	Stop road flooding & washout	~~stop~~ Stop loss of road	Town Hwy Supt.	Town Board	2011	low	local & State

** "Priority" and "Mitigation Action" to be carried over from the STAPLEE worksheet*

LEWIS COUNTY HAZARD MITIGATION PLAN - IMPLEMENTATION STRATEGY WORKSHEET

(Name of Jurisdiction) Town of Pinckney

Before completing this form, your jurisdiction should already have considered the full range of possible mitigation actions set forth in the Risk Assessment Interim Deliverable, selected a subset of the actions that your jurisdiction would like to implement, AND filled out the "Prioritization Worksheet". Now, on this page, translate from the "Prioritization Worksheets" each action and its priority rank, then fill in the remainder of the row

PRIORITY*	Mitigation Action *	Please list the hazards that the action will address.	Please say whether the action will affect existing assets, future assets, or both?	What municipal department will take the lead on moving forward with the project?	What is the existing authority or local planning mechanism through which the action can be implemented?	What is the target date for project completion?	What is the estimated cost of the project? *(order of magnitude dollars, or qualitative high/med/low)*	What funding source do you anticipate? *(i.e., local staff time, local budget, grant funding, etc.)*
Med	Drainage ditching River Road approximately 2 miles north of Intersection of Route 177 ï road banks and ditch repair	Drainage/flooding; Erosion Control	Both	Highway Dept.	Highway Dept.	2011	$5,000-$10,000	Local Budget Local Staff HMGP PDM
Med	Drainage ditching River Road approximately 3 miles north of Intersection of Route 177 ï road banks and ditch repair	Drainage/flooding; Erosion Control	Both	Highway Dept.	Highway Dept.	2011	$5,000-$10,000	Local Budget Local Staff HMGP PDM
High	Snowfencing and Tree Plantings Throughout town ï plant trees as living fences and other snow fencing to mitigate snow drifting due to heavy snows and winds	High Winds and Winter Storms	Both	Highway Dept.	Highway Dept.	2010	$10,000-$15,000	Local Budget Local Staff HMGP PDM

- ***"Priority" and "Mitigation Action" to be carried over from the STAPLEE worksheet***

LEWIS COUNTY HAZARD MITIGATION PLAN - IMPLEMENTATION STRATEGY WORKSHEET

(Name of Jurisdiction) Village of Port Leyden

Before completing this form, your jurisdiction should already have considered the full range of possible mitigation actions set forth in the Risk Assessment Interim Deliverable, selected a subset of the actions that your jurisdiction would like to implement, AND filled out the "Prioritization Worksheet". Now, on this page, translate from the "Prioritization Worksheets" each action and its priority rank, then fill in the remainder of the row

PRIORITY*	Mitigation Action *	Please list the hazards that the action will address.	Please say whether the action will affect existing assets, future assets, or both?	What municipal department will take the lead on moving forward with the project?	What is the existing authority or local planning mechanism through which the action can be implemented?	What is the target date for project completion?	What is the estimated cost of the project? *(order of magnitude dollars, or qualitative high/med/low)*	What funding source do you anticipate? *(i.e., local staff time, local budget, grant funding, etc.)*
High	Project #1 - "Hazardous Trees" (Prioritization of Actions)	Thunder Storms, Tornados, and Blizzards/Lake Effect Storms.	Both Existing/Future	Streets/Public Works.	Municipal Law: Street ROW and Village Ownership.	2010-2012 Dependent on Funding Source(s)	$200,00.00 - $250,000.00	(1) Grant Funding (2) Village Budget (3) Donating Services
High	Project #2 - "Culvert/Storm Water Drainage System" (Prioritization of Actions)	Major Street/Private Landowner Damage.	Both Existing/Future	Streets/Public Works.	Municipal Law: Street ROW. and Village Ownership	2011-2012 Dependent on Funding Source(s)	$50,000.00 - $75,000.00	(1) Grant Funding (2) NYS "CHIPS" Funding (3) Village Budget (4) Donating Services

** "Priority" and "Mitigation Action" to be carried over from the STAPLEE worksheet*

LEWIS COUNTY HAZARD MITIGATION PLAN - IMPLEMENTATION STRATEGY WORKSHEET

(Name of Jurisdiction) TOWN OF WEST TURIN

Before completing this form, your jurisdiction should already have considered the full range of possible mitigation actions set forth in the Risk Assessment Interim Deliverable, selected a subset of the actions that your jurisdiction would like to implement, AND filled out the "Prioritization Worksheet". Now, on this page, translate from the "Prioritization Worksheets" each action and its priority rank, then fill in the remainder of the row

PRIORITY*	Mitigation Action *	Please list the hazards that the action will address.	Please say whether the action will affect existing assets, future assets, or both?	What municipal department will take the lead on moving forward with the project?	What is the existing authority or local planning mechanism through which the action can be implemented?	What is the target date for project completion?	What is the estimated cost of the project? *(order of magnitude dollars, or qualitative high/med/low)*	What funding source do you anticipate? *(i.e., local staff time, local budget, grant funding, etc.)*
Med.	Culvert replacement on Crofoot Hill Rd. b/w town line and Smith Rd.	THE CHANCE OF A PLUGGED PIPE, AND A POSSIBLE FLOOD TO THE VILLAGE OF CONSTABLEVILLE	BOTH	HWY DEPT. T/O WEST TURIN	HWY SUPERINTENDENT	5 YEAR'S	$150,000.00 TO $200,000.00	LOCAL BUDGET
Med.	Culvert replacement on Crofoot Hill Rd. just west of Smith Rd.	THE CHANCE OF A PLUGGED PIPE AND A POSSIBLE FLOOD TO THE VILLAGE OF CONSTABLEVILLE	BOTH	HWY DEPT T/O WEST TURIN	HWY SUPERINTENDENT	6 YEAR'S	$80,000 TO $100,000	LOCAL BUDGET
Med.	Replace old concrete box culvert on Crofoot Hill Rd. b/w Plummer Rd intersection and Mackey Rd.	THE CHANCE OF ROAD COLLAPSE WITH DAMING + POSSIBLE FLOODING OF THE VILLAGE OF CONSTABLEVILLE	BOTH	HWY DEPT T/O WEST TURIN	HWY SUPERINTENDENT	3 YEAR'S	$200,000 TO $250,000	LOCAL BUDGET
Med.	Purchase land for wider right-of way in high wind drifting areas. - Plant trees as living snow fence.	REDUCE WHITE OUT CONDITIONS	BOTH	HWY DEPT T/O WEST TURIN	HWY SUPERINTENDENT	2 YEAR'S	$5,000.00 TO $50,000.00	LOCAL BUDGET

** "Priority" and "Mitigation Action" to be carried over from the STAPLEE worksheet*

LEWIS COUNTY HAZARD MITIGATION PLAN - IMPLEMENTATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) Village of Castorland

PRIORITY*	Mitigation Action *	Please list the hazards that the action will address.	Please say whether the action will affect existing assets, future assets, or both?	Which municipal representative will liaise / coordinate with the County to ensure municipal involvement?	What is the existing authority or local planning mechanism through which the action can be implemented?	What is the target date for implementation?	What is the estimated cost of the project? *(order of magnitude dollars, or qualitative high/med/low)*	What funding source do you anticipate? *(i.e., local staff time, local budget, grant funding, etc.)*
Low	Plan Review for Mitigation Ensure that local comprehensive plans incorporate disaster mitigation techniques through a courtesy review of all draft plans by the County Economic Development and Planning Department	All Hazards	Both	Village Mayor / CPG Member	Lewis County Dept. of Economic Development & Planning	2011 (continuous)	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	GIS Enhancement Investigate expansion of hazard-related GIS capabilities via acquisition of HAZUS-MH to collect and develop more sophisticated hazard mapping and loss estimation. Use information in future plan updates. Ensure information will be available to the public and to local communities and agencies.	Earthquakes, Wind, and Flood	Both	Village Mayor / CPG Member	Lewis County Emergency Management	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Outreach Program County coordination with local governments and other agencies to systematically contact isolated, vulnerable or special-needs population during severe winter storm events	Winter Storms and Extreme temperatures	Future	Village Mayor / CPG Member	Lewis County Emergency management	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Auxiliary Power Supply Conduct a countywide survey on status of auxiliary power supplies at all critical facilities.	Winter Storms, Wind, Tornado	Existing	Village Mayor / CPG Member	Lewis County Emergency Management/Lewis County Planning	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Low	Wind Hazards Training Provide trainings to municipalities regarding the development and implementation of programs to mitigate wind damage to private and public properties.	Wind, Tornado	Both	Village Mayor / CPG Member	Lewis County Emergency Management	2011	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Winter Driving and Vehicle Preparation Education Provide education opportunities for residents to learn winter driving techniques.	Winter Storms and Wind	Both	Village Mayor / CPG Member	Lewis County Emergency Management	2011	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
High	Winter Storm Public Awareness and Preparation Increase public awareness of personal responsibilities during emergencies, specifically winter storm events	Winter Storms and Snow	Both	Village Mayor / CPG Member	Lewis County Emergency Management	2011	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Low	Emergency Warming Shelters Establish warming shelters for vulnerable populations, including residents and stranded motorists	Extreme Temperatures and Winter Storms	Future	Village Mayor / CPG Member	Lewis County Emergency Management	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time

LEWIS COUNTY HAZARD MITIGATION PLAN - IMPLEMENTATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) Village of Castorland

PRIORITY*	Mitigation Action *	Please list the hazards that the action will address.	Please say whether the action will affect existing assets, future assets, or both?	Which municipal representative will liaise / coordinate with the County to ensure municipal involvement?	What is the existing authority or local planning mechanism through which the action can be implemented?	What is the target date for implementation?	What is the estimated cost of the project? *(order of magnitude dollars, or qualitative high/med/low)*	What funding source do you anticipate? *(i.e., local staff time, local budget, grant funding, etc.)*
Medium	Dam Safety Coordinate with NYSDEC and owners of all high and moderate hazard dams to work towards full compliance with applicable dam safety programs and development/updating of Emergency Action Plans including inundation mapping.	Dam Failure	Both	Village Mayor / CPG Member	Lewis County Emergency Management	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Drought Preparedness Publish and distribute literature (via the County web site, supplemented by hard copy distribution) on water conservation techniques and drought management strategies.	Drought	Both	Village Mayor / CPG Member	Lewis County Emergency Management	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Low	Landslide Study Conduct surveys to determine local vulnerabilities to landslides threatening property and roads, coordinate with municipalities to limit development in these areas and develop remedial measures for existing vulnerabilities.	Landslides	Both	Village Mayor / CPG Member	Soil and Water Conservation District	2015	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Wildfire Mapping Create and distribute mapping and database of wildland access points for firefighters, develop enhanced mapping of urban/wildland interface.	Wildfire	Both	Village Mayor / CPG Member	Lewis County Emergency Management/Lewis County Planning	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Critical Facilities Survey Undertake a year built and level of protection survey for all critical/emergency facilities and shelters to highlight structures built before codes and standards were put in place to provide protection from natural hazards, and pursue potential mitigation opportunities to protect these sites as funding becomes available.	Wind/Tornado, Winter Storms, Earthquakes, and Flooding (including Ice Jams)	Existing	Village Mayor / CPG Member	Lewis County Emergency Management and Building Codes	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time

LEWIS COUNTY HAZARD MITIGATION PLAN - IMPLEMENTATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) Village of Constableville

PRIORITY*	Mitigation Action *	Please list the hazards that the action will address.	Please say whether the action will affect existing assets, future assets, or both?	Which municipal representative will liaise / coordinate with the County to ensure municipal involvement?	What is the existing authority or local planning mechanism through which the action can be implemented?	What is the target date for implementation?	What is the estimated cost of the project? *(order of magnitude dollars, or qualitative high/med/low)*	What funding source do you anticipate? *(i.e., local staff time, local budget, grant funding, etc.)*
Low	Plan Review for Mitigation Ensure that local comprehensive plans incorporate disaster mitigation techniques through a courtesy review of all draft plans by the County Economic Development and Planning Department	All Hazards	Both	Village Mayor / CPG Member	Lewis County Dept. of Economic Development & Planning	2011 (continuous)	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	GIS Enhancement Investigate expansion of hazard-related GIS capabilities via acquisition of HAZUS-MH to collect and develop more sophisticated hazard mapping and loss estimation. Use information in future plan updates. Ensure information will be available to the public and to local communities and agencies.	Earthquakes, Wind, and Flood	Both	Village Mayor / CPG Member	Lewis County Emergency Management	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Outreach Program County coordination with local governments and other agencies to systematically contact isolated, vulnerable or special-needs population during severe winter storm events	Winter Storms and Extreme temperatures	Future	Village Mayor / CPG Member	Lewis County Emergency management	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Auxiliary Power Supply Conduct a countywide survey on status of auxiliary power supplies at all critical facilities.	Winter Storms, Wind, Tornado	Existing	Village Mayor / CPG Member	Lewis County Emergency Management/Lewis County Planning	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Low	Wind Hazards Training Provide trainings to municipalities regarding the development and implementation of programs to mitigate wind damage to private and public properties.	Wind, Tornado	Both	Village Mayor / CPG Member	Lewis County Emergency Management	2011	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Winter Driving and Vehicle Preparation Education Provide education opportunities for residents to learn winter driving techniques.	Winter Storms and Wind	Both	Village Mayor / CPG Member	Lewis County Emergency Management	2011	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
High	Winter Storm Public Awareness and Preparation Increase public awareness of personal responsibilities during emergencies, specifically winter storm events	Winter Storms and Snow	Both	Village Mayor / CPG Member	Lewis County Emergency Management	2011	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Low	Emergency Warming Shelters Establish warming shelters for vulnerable populations, including residents and stranded motorists	Extreme Temperatures and Winter Storms	Future	Village Mayor / CPG Member	Lewis County Emergency Management	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time

LEWIS COUNTY HAZARD MITIGATION PLAN - IMPLEMENTATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) Village of Constableville

PRIORITY*	Mitigation Action *	Please list the hazards that the action will address.	Please say whether the action will affect existing assets, future assets, or both?	Which municipal representative will liaise / coordinate with the County to ensure municipal involvement?	What is the existing authority or local planning mechanism through which the action can be implemented?	What is the target date for implementation?	What is the estimated cost of the project? *(order of magnitude dollars, or qualitative high/med/low)*	What funding source do you anticipate? *(i.e., local staff time, local budget, grant funding, etc.)*
Medium	Dam Safety Coordinate with NYSDEC and owners of all high and moderate hazard dams to work towards full compliance with applicable dam safety programs and development/updating of Emergency Action Plans including inundation mapping.	Dam Failure	Both	Village Mayor / CPG Member	Lewis County Emergency Management	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Drought Preparedness Publish and distribute literature (via the County web site, supplemented by hard copy distribution) on water conservation techniques and drought management strategies.	Drought	Both	Village Mayor / CPG Member	Lewis County Emergency Management	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Low	Landslide Study Conduct surveys to determine local vulnerabilities to landslides threatening property and roads, coordinate with municipalities to limit development in these areas and develop remedial measures for existing vulnerabilities.	Landslides	Both	Village Mayor / CPG Member	Soil and Water Conservation District	2015	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Wildfire Mapping Create and distribute mapping and database of wildland access points for firefighters, develop enhanced mapping of urban/wildland interface.	Wildfire	Both	Village Mayor / CPG Member	Lewis County Emergency Management/Lewis County Planning	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Critical Facilities Survey Undertake a year built and level of protection survey for all critical/emergency facilities and shelters to highlight structures built before codes and standards were put in place to provide protection from natural hazards, and pursue potential mitigation opportunities to protect these sites as funding becomes available.	Wind/Tornado, Winter Storms, Earthquakes, and Flooding (including Ice Jams)	Existing	Village Mayor / CPG Member	Lewis County Emergency Management and Building Codes	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time

LEWIS COUNTY HAZARD MITIGATION PLAN - IMPLEMENTATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) Town of Croghan

PRIORITY*	Mitigation Action *	Please list the hazards that the action will address.	Please say whether the action will affect existing assets, future assets, or both?	Which municipal representative will liaise / coordinate with the County to ensure municipal involvement?	What is the existing authority or local planning mechanism through which the action can be implemented?	What is the target date for implementation?	What is the estimated cost of the project? *(order of magnitude dollars, or qualitative high/med/low)*	What funding source do you anticipate? *(i.e., local staff time, local budget, grant funding, etc.)*
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LEWIS COUNTY HAZARD MITIGATION PLAN - IMPLEMENTATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) Town of Croghan

PRIORITY*	Mitigation Action *	Please list the hazards that the action will address.	Please say whether the action will affect existing assets, future assets, or both?	Which municipal representative will liaise / coordinate with the County to ensure municipal involvement?	What is the existing authority or local planning mechanism through which the action can be implemented?	What is the target date for implementation?	What is the estimated cost of the project? *(order of magnitude dollars, or qualitative high/med/low)*	What funding source do you anticipate? *(i.e., local staff time, local budget, grant funding, etc.)*
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LEWIS COUNTY HAZARD MITIGATION PLAN - IMPLEMENTATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) Village of Croghan

PRIORITY*	Mitigation Action *	Please list the hazards that the action will address.	Please say whether the action will affect existing assets, future assets, or both?	Which municipal representative will liaise / coordinate with the County to ensure municipal involvement?	What is the existing authority or local planning mechanism through which the action can be implemented?	What is the target date for implementation?	What is the estimated cost of the project? *(order of magnitude dollars, or qualitative high/med/low)*	What funding source do you anticipate? *(i.e., local staff time, local budget, grant funding, etc.)*
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LEWIS COUNTY HAZARD MITIGATION PLAN - IMPLEMENTATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) Village of Croghan

PRIORITY*	Mitigation Action *	Please list the hazards that the action will address.	Please say whether the action will affect existing assets, future assets, or both?	Which municipal representative will liaise / coordinate with the County to ensure municipal involvement?	What is the existing authority or local planning mechanism through which the action can be implemented?	What is the target date for implementation?	What is the estimated cost of the project? *(order of magnitude dollars, or qualitative high/med/low)*	What funding source do you anticipate? *(i.e., local staff time, local budget, grant funding, etc.)*
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LEWIS COUNTY HAZARD MITIGATION PLAN - IMPLEMENTATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) Town of Denmark

PRIORITY*	Mitigation Action *	Please list the hazards that the action will address.	Please say whether the action will affect existing assets, future assets, or both?	Which municipal representative will liaise / coordinate with the County to ensure municipal involvement?	What is the existing authority or local planning mechanism through which the action can be implemented?	What is the target date for implementation?	What is the estimated cost of the project? *(order of magnitude dollars, or qualitative high/med/low)*	What funding source do you anticipate? *(i.e., local staff time, local budget, grant funding, etc.)*
Low	Plan Review for Mitigation Ensure that local comprehensive plans incorporate disaster mitigation techniques through a courtesy review of all draft plans by the County Economic Development and Planning Department	All Hazards	Both	Town Supervisor / CPG Member	Lewis County Dept. of Economic Development & Planning	2011 (continuous)	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
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Medium	Outreach Program County coordination with local governments and other agencies to systematically contact isolated, vulnerable or special-needs population during severe winter storm events	Winter Storms and Extreme temperatures	Future	Town Supervisor / CPG Member	Lewis County Emergency management	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Auxiliary Power Supply Conduct a countywide survey on status of auxiliary power supplies at all critical facilities.	Winter Storms, Wind, Tornado	Existing	Town Supervisor / CPG Member	Lewis County Emergency Management/Lewis County Planning	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Low	Wind Hazards Training Provide trainings to municipalities regarding the development and implementation of programs to mitigate wind damage to private and public properties.	Wind, Tornado	Both	Town Supervisor / CPG Member	Lewis County Emergency Management	2011	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Winter Driving and Vehicle Preparation Education Provide education opportunities for residents to learn winter driving techniques.	Winter Storms and Wind	Both	Town Supervisor / CPG Member	Lewis County Emergency Management	2011	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
High	Winter Storm Public Awareness and Preparation Increase public awareness of personal responsibilities during emergencies, specifically winter storm events	Winter Storms and Snow	Both	Town Supervisor / CPG Member	Lewis County Emergency Management	2011	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Low	Emergency Warming Shelters Establish warming shelters for vulnerable populations, including residents and stranded motorists	Extreme Temperatures and Winter Storms	Future	Town Supervisor / CPG Member	Lewis County Emergency Management	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time

LEWIS COUNTY HAZARD MITIGATION PLAN - IMPLEMENTATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) Town of Denmark

PRIORITY*	Mitigation Action *	Please list the hazards that the action will address.	Please say whether the action will affect existing assets, future assets, or both?	Which municipal representative will liaise / coordinate with the County to ensure municipal involvement?	What is the existing authority or local planning mechanism through which the action can be implemented?	What is the target date for implementation?	What is the estimated cost of the project? *(order of magnitude dollars, or qualitative high/med/low)*	What funding source do you anticipate? *(i.e., local staff time, local budget, grant funding, etc.)*
Medium	Dam Safety Coordinate with NYSDEC and owners of all high and moderate hazard dams to work towards full compliance with applicable dam safety programs and development/updating of Emergency Action Plans including inundation mapping.	Dam Failure	Both	Town Supervisor / CPG Member	Lewis County Emergency Management	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Drought Preparedness Publish and distribute literature (via the County web site, supplemented by hard copy distribution) on water conservation techniques and drought management strategies.	Drought	Both	Town Supervisor / CPG Member	Lewis County Emergency Management	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Low	Landslide Study Conduct surveys to determine local vulnerabilities to landslides threatening property and roads, coordinate with municipalities to limit development in these areas and develop remedial measures for existing vulnerabilities.	Landslides	Both	Town Supervisor / CPG Member	Soil and Water Conservation District	2015	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Wildfire Mapping Create and distribute mapping and database of wildland access points for firefighters, develop enhanced mapping of urban/wildland interface.	Wildfire	Both	Town Supervisor / CPG Member	Lewis County Emergency Management/Lewis County Planning	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Critical Facilities Survey Undertake a year built and level of protection survey for all critical/emergency facilities and shelters to highlight structures built before codes and standards were put in place to provide protection from natural hazards, and pursue potential mitigation opportunities to protect these sites as funding becomes available.	Wind/Tornado, Winter Storms, Earthquakes, and Flooding (including Ice Jams)	Existing	Town Supervisor / CPG Member	Lewis County Emergency Management and Building Codes	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time

LEWIS COUNTY HAZARD MITIGATION PLAN - IMPLEMENTATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) Town of Diana

PRIORITY*	Mitigation Action *	Please list the hazards that the action will address.	Please say whether the action will affect existing assets, future assets, or both?	Which municipal representative will liaise / coordinate with the County to ensure municipal involvement?	What is the existing authority or local planning mechanism through which the action can be implemented?	What is the target date for implementation?	What is the estimated cost of the project? *(order of magnitude dollars, or qualitative high/med/low)*	What funding source do you anticipate? *(i.e., local staff time, local budget, grant funding, etc.)*
Low	Plan Review for Mitigation Ensure that local comprehensive plans incorporate disaster mitigation techniques through a courtesy review of all draft plans by the County Economic Development and Planning Department	All Hazards	Both	Town Supervisor / CPG Member	Lewis County Dept. of Economic Development & Planning	2011 (continuous)	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	GIS Enhancement Investigate expansion of hazard-related GIS capabilities via acquisition of HAZUS-MH to collect and develop more sophisticated hazard mapping and loss estimation. Use information in future plan updates. Ensure information will be available to the public and to local communities and agencies.	Earthquakes, Wind, and Flood	Both	Town Supervisor / CPG Member	Lewis County Emergency Management	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Outreach Program County coordination with local governments and other agencies to systematically contact isolated, vulnerable or special-needs population during severe winter storm events	Winter Storms and Extreme temperatures	Future	Town Supervisor / CPG Member	Lewis County Emergency management	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Auxiliary Power Supply Conduct a countywide survey on status of auxiliary power supplies at all critical facilities.	Winter Storms, Wind, Tornado	Existing	Town Supervisor / CPG Member	Lewis County Emergency Management/Lewis County Planning	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Low	Wind Hazards Training Provide trainings to municipalities regarding the development and implementation of programs to mitigate wind damage to private and public properties.	Wind, Tornado	Both	Town Supervisor / CPG Member	Lewis County Emergency Management	2011	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Winter Driving and Vehicle Preparation Education Provide education opportunities for residents to learn winter driving techniques.	Winter Storms and Wind	Both	Town Supervisor / CPG Member	Lewis County Emergency Management	2011	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
High	Winter Storm Public Awareness and Preparation Increase public awareness of personal responsibilities during emergencies, specifically winter storm events	Winter Storms and Snow	Both	Town Supervisor / CPG Member	Lewis County Emergency Management	2011	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Low	Emergency Warming Shelters Establish warming shelters for vulnerable populations, including residents and stranded motorists	Extreme Temperatures and Winter Storms	Future	Town Supervisor / CPG Member	Lewis County Emergency Management	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time

LEWIS COUNTY HAZARD MITIGATION PLAN - IMPLEMENTATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) Town of Diana

PRIORITY*	Mitigation Action *	Please list the hazards that the action will address.	Please say whether the action will affect existing assets, future assets, or both?	Which municipal representative will liaise / coordinate with the County to ensure municipal involvement?	What is the existing authority or local planning mechanism through which the action can be implemented?	What is the target date for implementation?	What is the estimated cost of the project? *(order of magnitude dollars, or qualitative high/med/low)*	What funding source do you anticipate? *(i.e., local staff time, local budget, grant funding, etc.)*
Medium	Dam Safety Coordinate with NYSDEC and owners of all high and moderate hazard dams to work towards full compliance with applicable dam safety programs and development/updating of Emergency Action Plans including inundation mapping.	Dam Failure	Both	Town Supervisor / CPG Member	Lewis County Emergency Management	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Drought Preparedness Publish and distribute literature (via the County web site, supplemented by hard copy distribution) on water conservation techniques and drought management strategies.	Drought	Both	Town Supervisor / CPG Member	Lewis County Emergency Management	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Low	Landslide Study Conduct surveys to determine local vulnerabilities to landslides threatening property and roads, coordinate with municipalities to limit development in these areas and develop remedial measures for existing vulnerabilities.	Landslides	Both	Town Supervisor / CPG Member	Soil and Water Conservation District	2015	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Wildfire Mapping Create and distribute mapping and database of wildland access points for firefighters, develop enhanced mapping of urban/wildland interface.	Wildfire	Both	Town Supervisor / CPG Member	Lewis County Emergency Management/Lewis County Planning	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Critical Facilities Survey Undertake a year built and level of protection survey for all critical/emergency facilities and shelters to highlight structures built before codes and standards were put in place to provide protection from natural hazards, and pursue potential mitigation opportunities to protect these sites as funding becomes available.	Wind/Tornado, Winter Storms, Earthquakes, and Flooding (including Ice Jams)	Existing	Town Supervisor / CPG Member	Lewis County Emergency Management and Building Codes	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time

LEWIS COUNTY HAZARD MITIGATION PLAN - IMPLEMENTATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) Town of Greig

PRIORITY*	Mitigation Action *	Please list the hazards that the action will address.	Please say whether the action will affect existing assets, future assets, or both?	Which municipal representative will liaise / coordinate with the County to ensure municipal involvement?	What is the existing authority or local planning mechanism through which the action can be implemented?	What is the target date for implementation?	What is the estimated cost of the project? *(order of magnitude dollars, or qualitative high/med/low)*	What funding source do you anticipate? *(i.e., local staff time, local budget, grant funding, etc.)*
Low	Plan Review for Mitigation Ensure that local comprehensive plans incorporate disaster mitigation techniques through a courtesy review of all draft plans by the County Economic Development and Planning Department	All Hazards	Both	Town Supervisor / CPG Member	Lewis County Dept. of Economic Development & Planning	2011 (continuous)	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	GIS Enhancement Investigate expansion of hazard-related GIS capabilities via acquisition of HAZUS-MH to collect and develop more sophisticated hazard mapping and loss estimation. Use information in future plan updates. Ensure information will be available to the public and to local communities and agencies.	Earthquakes, Wind, and Flood	Both	Town Supervisor / CPG Member	Lewis County Emergency Management	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Outreach Program County coordination with local governments and other agencies to systematically contact isolated, vulnerable or special-needs population during severe winter storm events	Winter Storms and Extreme temperatures	Future	Town Supervisor / CPG Member	Lewis County Emergency management	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Auxiliary Power Supply Conduct a countywide survey on status of auxiliary power supplies at all critical facilities.	Winter Storms, Wind, Tornado	Existing	Town Supervisor / CPG Member	Lewis County Emergency Management/Lewis County Planning	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Low	Wind Hazards Training Provide trainings to municipalities regarding the development and implementation of programs to mitigate wind damage to private and public properties.	Wind, Tornado	Both	Town Supervisor / CPG Member	Lewis County Emergency Management	2011	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Winter Driving and Vehicle Preparation Education Provide education opportunities for residents to learn winter driving techniques.	Winter Storms and Wind	Both	Town Supervisor / CPG Member	Lewis County Emergency Management	2011	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
High	Winter Storm Public Awareness and Preparation Increase public awareness of personal responsibilities during emergencies, specifically winter storm events	Winter Storms and Snow	Both	Town Supervisor / CPG Member	Lewis County Emergency Management	2011	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Low	Emergency Warming Shelters Establish warming shelters for vulnerable populations, including residents and stranded motorists	Extreme Temperatures and Winter Storms	Future	Town Supervisor / CPG Member	Lewis County Emergency Management	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time

LEWIS COUNTY HAZARD MITIGATION PLAN - IMPLEMENTATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) Town of Greig

PRIORITY*	Mitigation Action *	Please list the hazards that the action will address.	Please say whether the action will affect existing assets, future assets, or both?	Which municipal representative will liaise / coordinate with the County to ensure municipal involvement?	What is the existing authority or local planning mechanism through which the action can be implemented?	What is the target date for implementation?	What is the estimated cost of the project? *(order of magnitude dollars, or qualitative high/med/low)*	What funding source do you anticipate? *(i.e., local staff time, local budget, grant funding, etc.)*
Medium	Dam Safety Coordinate with NYSDEC and owners of all high and moderate hazard dams to work towards full compliance with applicable dam safety programs and development/updating of Emergency Action Plans including inundation mapping.	Dam Failure	Both	Town Supervisor / CPG Member	Lewis County Emergency Management	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Drought Preparedness Publish and distribute literature (via the County web site, supplemented by hard copy distribution) on water conservation techniques and drought management strategies.	Drought	Both	Town Supervisor / CPG Member	Lewis County Emergency Management	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Low	Landslide Study Conduct surveys to determine local vulnerabilities to landslides threatening property and roads, coordinate with municipalities to limit development in these areas and develop remedial measures for existing vulnerabilities.	Landslides	Both	Town Supervisor / CPG Member	Soil and Water Conservation District	2015	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Wildfire Mapping Create and distribute mapping and database of wildland access points for firefighters, develop enhanced mapping of urban/wildland interface.	Wildfire	Both	Town Supervisor / CPG Member	Lewis County Emergency Management/Lewis County Planning	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Critical Facilities Survey Undertake a year built and level of protection survey for all critical/emergency facilities and shelters to highlight structures built before codes and standards were put in place to provide protection from natural hazards, and pursue potential mitigation opportunities to protect these sites as funding becomes available.	Wind/Tornado, Winter Storms, Earthquakes, and Flooding (including Ice Jams)	Existing	Town Supervisor / CPG Member	Lewis County Emergency Management and Building Codes	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time

LEWIS COUNTY HAZARD MITIGATION PLAN - IMPLEMENTATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) Town of Harrisburg

PRIORITY*	Mitigation Action *	Please list the hazards that the action will address.	Please say whether the action will affect existing assets, future assets, or both?	Which municipal representative will liaise / coordinate with the County to ensure municipal involvement?	What is the existing authority or local planning mechanism through which the action can be implemented?	What is the target date for implementation?	What is the estimated cost of the project? *(order of magnitude dollars, or qualitative high/med/low)*	What funding source do you anticipate? *(i.e., local staff time, local budget, grant funding, etc.)*
Low	Plan Review for Mitigation Ensure that local comprehensive plans incorporate disaster mitigation techniques through a courtesy review of all draft plans by the County Economic Development and Planning Department	All Hazards	Both	Town Supervisor / CPG Member	Lewis County Dept. of Economic Development & Planning	2011 (continuous)	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	GIS Enhancement Investigate expansion of hazard-related GIS capabilities via acquisition of HAZUS-MH to collect and develop more sophisticated hazard mapping and loss estimation. Use information in future plan updates. Ensure information will be available to the public and to local communities and agencies.	Earthquakes, Wind, and Flood	Both	Town Supervisor / CPG Member	Lewis County Emergency Management	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Outreach Program County coordination with local governments and other agencies to systematically contact isolated, vulnerable or special-needs population during severe winter storm events	Winter Storms and Extreme temperatures	Future	Town Supervisor / CPG Member	Lewis County Emergency management	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Auxiliary Power Supply Conduct a countywide survey on status of auxiliary power supplies at all critical facilities.	Winter Storms, Wind, Tornado	Existing	Town Supervisor / CPG Member	Lewis County Emergency Management/Lewis County Planning	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Low	Wind Hazards Training Provide trainings to municipalities regarding the development and implementation of programs to mitigate wind damage to private and public properties.	Wind, Tornado	Both	Town Supervisor / CPG Member	Lewis County Emergency Management	2011	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Winter Driving and Vehicle Preparation Education Provide education opportunities for residents to learn winter driving techniques.	Winter Storms and Wind	Both	Town Supervisor / CPG Member	Lewis County Emergency Management	2011	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
High	Winter Storm Public Awareness and Preparation Increase public awareness of personal responsibilities during emergencies, specifically winter storm events	Winter Storms and Snow	Both	Town Supervisor / CPG Member	Lewis County Emergency Management	2011	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Low	Emergency Warming Shelters Establish warming shelters for vulnerable populations, including residents and stranded motorists	Extreme Temperatures and Winter Storms	Future	Town Supervisor / CPG Member	Lewis County Emergency Management	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time

LEWIS COUNTY HAZARD MITIGATION PLAN - IMPLEMENTATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) Town of Harrisburg

PRIORITY*	Mitigation Action *	Please list the hazards that the action will address.	Please say whether the action will affect existing assets, future assets, or both?	Which municipal representative will liaise / coordinate with the County to ensure municipal involvement?	What is the existing authority or local planning mechanism through which the action can be implemented?	What is the target date for implementation?	What is the estimated cost of the project? *(order of magnitude dollars, or qualitative high/med/low)*	What funding source do you anticipate? *(i.e., local staff time, local budget, grant funding, etc.)*
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Medium	Drought Preparedness Publish and distribute literature (via the County web site, supplemented by hard copy distribution) on water conservation techniques and drought management strategies.	Drought	Both	Town Supervisor / CPG Member	Lewis County Emergency Management	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Low	Landslide Study Conduct surveys to determine local vulnerabilities to landslides threatening property and roads, coordinate with municipalities to limit development in these areas and develop remedial measures for existing vulnerabilities.	Landslides	Both	Town Supervisor / CPG Member	Soil and Water Conservation District	2015	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Wildfire Mapping Create and distribute mapping and database of wildland access points for firefighters, develop enhanced mapping of urban/wildland interface.	Wildfire	Both	Town Supervisor / CPG Member	Lewis County Emergency Management/Lewis County Planning	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Critical Facilities Survey Undertake a year built and level of protection survey for all critical/emergency facilities and shelters to highlight structures built before codes and standards were put in place to provide protection from natural hazards, and pursue potential mitigation opportunities to protect these sites as funding becomes available.	Wind/Tornado, Winter Storms, Earthquakes, and Flooding (including Ice Jams)	Existing	Town Supervisor / CPG Member	Lewis County Emergency Management and Building Codes	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time

LEWIS COUNTY HAZARD MITIGATION PLAN - IMPLEMENTATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) Town of Lewis

PRIORITY*	Mitigation Action *	Please list the hazards that the action will address.	Please say whether the action will affect existing assets, future assets, or both?	Which municipal representative will liaise / coordinate with the County to ensure municipal involvement?	What is the existing authority or local planning mechanism through which the action can be implemented?	What is the target date for implementation?	What is the estimated cost of the project? *(order of magnitude dollars, or qualitative high/med/low)*	What funding source do you anticipate? *(i.e., local staff time, local budget, grant funding, etc.)*
Low	Plan Review for Mitigation Ensure that local comprehensive plans incorporate disaster mitigation techniques through a courtesy review of all draft plans by the County Economic Development and Planning Department	All Hazards	Both	Town Supervisor / CPG Member	Lewis County Dept. of Economic Development & Planning	2011 (continuous)	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	GIS Enhancement Investigate expansion of hazard-related GIS capabilities via acquisition of HAZUS-MH to collect and develop more sophisticated hazard mapping and loss estimation. Use information in future plan updates. Ensure information will be available to the public and to local communities and agencies.	Earthquakes, Wind, and Flood	Both	Town Supervisor / CPG Member	Lewis County Emergency Management	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Outreach Program County coordination with local governments and other agencies to systematically contact isolated, vulnerable or special-needs population during severe winter storm events	Winter Storms and Extreme temperatures	Future	Town Supervisor / CPG Member	Lewis County Emergency management	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Auxiliary Power Supply Conduct a countywide survey on status of auxiliary power supplies at all critical facilities.	Winter Storms, Wind, Tornado	Existing	Town Supervisor / CPG Member	Lewis County Emergency Management/Lewis County Planning	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Low	Wind Hazards Training Provide trainings to municipalities regarding the development and implementation of programs to mitigate wind damage to private and public properties.	Wind, Tornado	Both	Town Supervisor / CPG Member	Lewis County Emergency Management	2011	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Winter Driving and Vehicle Preparation Education Provide education opportunities for residents to learn winter driving techniques.	Winter Storms and Wind	Both	Town Supervisor / CPG Member	Lewis County Emergency Management	2011	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
High	Winter Storm Public Awareness and Preparation Increase public awareness of personal responsibilities during emergencies, specifically winter storm events	Winter Storms and Snow	Both	Town Supervisor / CPG Member	Lewis County Emergency Management	2011	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Low	Emergency Warming Shelters Establish warming shelters for vulnerable populations, including residents and stranded motorists	Extreme Temperatures and Winter Storms	Future	Town Supervisor / CPG Member	Lewis County Emergency Management	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time

LEWIS COUNTY HAZARD MITIGATION PLAN - IMPLEMENTATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) Town of Lewis

PRIORITY*	Mitigation Action *	Please list the hazards that the action will address.	Please say whether the action will affect existing assets, future assets, or both?	Which municipal representative will liaise / coordinate with the County to ensure municipal involvement?	What is the existing authority or local planning mechanism through which the action can be implemented?	What is the target date for implementation?	What is the estimated cost of the project? *(order of magnitude dollars, or qualitative high/med/low)*	What funding source do you anticipate? *(i.e., local staff time, local budget, grant funding, etc.)*
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Medium	Drought Preparedness Publish and distribute literature (via the County web site, supplemented by hard copy distribution) on water conservation techniques and drought management strategies.	Drought	Both	Town Supervisor / CPG Member	Lewis County Emergency Management	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Low	Landslide Study Conduct surveys to determine local vulnerabilities to landslides threatening property and roads, coordinate with municipalities to limit development in these areas and develop remedial measures for existing vulnerabilities.	Landslides	Both	Town Supervisor / CPG Member	Soil and Water Conservation District	2015	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Wildfire Mapping Create and distribute mapping and database of wildland access points for firefighters, develop enhanced mapping of urban/wildland interface.	Wildfire	Both	Town Supervisor / CPG Member	Lewis County Emergency Management/Lewis County Planning	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Critical Facilities Survey Undertake a year built and level of protection survey for all critical/emergency facilities and shelters to highlight structures built before codes and standards were put in place to provide protection from natural hazards, and pursue potential mitigation opportunities to protect these sites as funding becomes available.	Wind/Tornado, Winter Storms, Earthquakes, and Flooding (including Ice Jams)	Existing	Town Supervisor / CPG Member	Lewis County Emergency Management and Building Codes	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time

LEWIS COUNTY HAZARD MITIGATION PLAN - IMPLEMENTATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) Town of Leyden

PRIORITY*	Mitigation Action *	Please list the hazards that the action will address.	Please say whether the action will affect existing assets, future assets, or both?	Which municipal representative will liaise / coordinate with the County to ensure municipal involvement?	What is the existing authority or local planning mechanism through which the action can be implemented?	What is the target date for implementation?	What is the estimated cost of the project? *(order of magnitude dollars, or qualitative high/med/low)*	What funding source do you anticipate? *(i.e., local staff time, local budget, grant funding, etc.)*
Low	Plan Review for Mitigation Ensure that local comprehensive plans incorporate disaster mitigation techniques through a courtesy review of all draft plans by the County Economic Development and Planning Department	All Hazards	Both	Town Supervisor / CPG Member	Lewis County Dept. of Economic Development & Planning	2011 (continuous)	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	GIS Enhancement Investigate expansion of hazard-related GIS capabilities via acquisition of HAZUS-MH to collect and develop more sophisticated hazard mapping and loss estimation. Use information in future plan updates. Ensure information will be available to the public and to local communities and agencies.	Earthquakes, Wind, and Flood	Both	Town Supervisor / CPG Member	Lewis County Emergency Management	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Outreach Program County coordination with local governments and other agencies to systematically contact isolated, vulnerable or special-needs population during severe winter storm events	Winter Storms and Extreme temperatures	Future	Town Supervisor / CPG Member	Lewis County Emergency management	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Auxiliary Power Supply Conduct a countywide survey on status of auxiliary power supplies at all critical facilities.	Winter Storms, Wind, Tornado	Existing	Town Supervisor / CPG Member	Lewis County Emergency Management/Lewis County Planning	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Low	Wind Hazards Training Provide trainings to municipalities regarding the development and implementation of programs to mitigate wind damage to private and public properties.	Wind, Tornado	Both	Town Supervisor / CPG Member	Lewis County Emergency Management	2011	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Winter Driving and Vehicle Preparation Education Provide education opportunities for residents to learn winter driving techniques.	Winter Storms and Wind	Both	Town Supervisor / CPG Member	Lewis County Emergency Management	2011	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
High	Winter Storm Public Awareness and Preparation Increase public awareness of personal responsibilities during emergencies, specifically winter storm events	Winter Storms and Snow	Both	Town Supervisor / CPG Member	Lewis County Emergency Management	2011	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Low	Emergency Warming Shelters Establish warming shelters for vulnerable populations, including residents and stranded motorists	Extreme Temperatures and Winter Storms	Future	Town Supervisor / CPG Member	Lewis County Emergency Management	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time

LEWIS COUNTY HAZARD MITIGATION PLAN - IMPLEMENTATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) Town of Leyden

PRIORITY*	Mitigation Action *	Please list the hazards that the action will address.	Please say whether the action will affect existing assets, future assets, or both?	Which municipal representative will liaise / coordinate with the County to ensure municipal involvement?	What is the existing authority or local planning mechanism through which the action can be implemented?	What is the target date for implementation?	What is the estimated cost of the project? *(order of magnitude dollars, or qualitative high/med/low)*	What funding source do you anticipate? *(i.e., local staff time, local budget, grant funding, etc.)*
Medium	Dam Safety Coordinate with NYSDEC and owners of all high and moderate hazard dams to work towards full compliance with applicable dam safety programs and development/updating of Emergency Action Plans including inundation mapping.	Dam Failure	Both	Town Supervisor / CPG Member	Lewis County Emergency Management	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Drought Preparedness Publish and distribute literature (via the County web site, supplemented by hard copy distribution) on water conservation techniques and drought management strategies.	Drought	Both	Town Supervisor / CPG Member	Lewis County Emergency Management	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Low	Landslide Study Conduct surveys to determine local vulnerabilities to landslides threatening property and roads, coordinate with municipalities to limit development in these areas and develop remedial measures for existing vulnerabilities.	Landslides	Both	Town Supervisor / CPG Member	Soil and Water Conservation District	2015	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Wildfire Mapping Create and distribute mapping and database of wildland access points for firefighters, develop enhanced mapping of urban/wildland interface.	Wildfire	Both	Town Supervisor / CPG Member	Lewis County Emergency Management/Lewis County Planning	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
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LEWIS COUNTY HAZARD MITIGATION PLAN - IMPLEMENTATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) Town of Lowville

PRIORITY*	Mitigation Action *	Please list the hazards that the action will address.	Please say whether the action will affect existing assets, future assets, or both?	Which municipal representative will liaise / coordinate with the County to ensure municipal involvement?	What is the existing authority or local planning mechanism through which the action can be implemented?	What is the target date for implementation?	What is the estimated cost of the project? *(order of magnitude dollars, or qualitative high/med/low)*	What funding source do you anticipate? *(i.e., local staff time, local budget, grant funding, etc.)*
Low	Plan Review for Mitigation Ensure that local comprehensive plans incorporate disaster mitigation techniques through a courtesy review of all draft plans by the County Economic Development and Planning Department	All Hazards	Both	Town Supervisor / CPG Member	Lewis County Dept. of Economic Development & Planning	2011 (continuous)	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	GIS Enhancement Investigate expansion of hazard-related GIS capabilities via acquisition of HAZUS-MH to collect and develop more sophisticated hazard mapping and loss estimation. Use information in future plan updates. Ensure information will be available to the public and to local communities and agencies.	Earthquakes, Wind, and Flood	Both	Town Supervisor / CPG Member	Lewis County Emergency Management	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Outreach Program County coordination with local governments and other agencies to systematically contact isolated, vulnerable or special-needs population during severe winter storm events	Winter Storms and Extreme temperatures	Future	Town Supervisor / CPG Member	Lewis County Emergency management	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Auxiliary Power Supply Conduct a countywide survey on status of auxiliary power supplies at all critical facilities.	Winter Storms, Wind, Tornado	Existing	Town Supervisor / CPG Member	Lewis County Emergency Management/Lewis County Planning	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Low	Wind Hazards Training Provide trainings to municipalities regarding the development and implementation of programs to mitigate wind damage to private and public properties.	Wind, Tornado	Both	Town Supervisor / CPG Member	Lewis County Emergency Management	2011	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Winter Driving and Vehicle Preparation Education Provide education opportunities for residents to learn winter driving techniques.	Winter Storms and Wind	Both	Town Supervisor / CPG Member	Lewis County Emergency Management	2011	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
High	Winter Storm Public Awareness and Preparation Increase public awareness of personal responsibilities during emergencies, specifically winter storm events	Winter Storms and Snow	Both	Town Supervisor / CPG Member	Lewis County Emergency Management	2011	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Low	Emergency Warming Shelters Establish warming shelters for vulnerable populations, including residents and stranded motorists	Extreme Temperatures and Winter Storms	Future	Town Supervisor / CPG Member	Lewis County Emergency Management	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time

LEWIS COUNTY HAZARD MITIGATION PLAN - IMPLEMENTATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) Town of Lowville

PRIORITY*	Mitigation Action *	Please list the hazards that the action will address.	Please say whether the action will affect existing assets, future assets, or both?	Which municipal representative will liaise / coordinate with the County to ensure municipal involvement?	What is the existing authority or local planning mechanism through which the action can be implemented?	What is the target date for implementation?	What is the estimated cost of the project? *(order of magnitude dollars, or qualitative high/med/low)*	What funding source do you anticipate? *(i.e., local staff time, local budget, grant funding, etc.)*
Medium	Dam Safety Coordinate with NYSDEC and owners of all high and moderate hazard dams to work towards full compliance with applicable dam safety programs and development/updating of Emergency Action Plans including inundation mapping.	Dam Failure	Both	Town Supervisor / CPG Member	Lewis County Emergency Management	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Drought Preparedness Publish and distribute literature (via the County web site, supplemented by hard copy distribution) on water conservation techniques and drought management strategies.	Drought	Both	Town Supervisor / CPG Member	Lewis County Emergency Management	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Low	Landslide Study Conduct surveys to determine local vulnerabilities to landslides threatening property and roads, coordinate with municipalities to limit development in these areas and develop remedial measures for existing vulnerabilities.	Landslides	Both	Town Supervisor / CPG Member	Soil and Water Conservation District	2015	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Wildfire Mapping Create and distribute mapping and database of wildland access points for firefighters, develop enhanced mapping of urban/wildland interface.	Wildfire	Both	Town Supervisor / CPG Member	Lewis County Emergency Management/Lewis County Planning	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Critical Facilities Survey Undertake a year built and level of protection survey for all critical/emergency facilities and shelters to highlight structures built before codes and standards were put in place to provide protection from natural hazards, and pursue potential mitigation opportunities to protect these sites as funding becomes available.	Wind/Tornado, Winter Storms, Earthquakes, and Flooding (including Ice Jams)	Existing	Town Supervisor / CPG Member	Lewis County Emergency Management and Building Codes	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time

LEWIS COUNTY HAZARD MITIGATION PLAN - IMPLEMENTATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) Village of Lowville

PRIORITY*	Mitigation Action *	Please list the hazards that the action will address.	Please say whether the action will affect existing assets, future assets, or both?	Which municipal representative will liaise / coordinate with the County to ensure municipal involvement?	What is the existing authority or local planning mechanism through which the action can be implemented?	What is the target date for implementation?	What is the estimated cost of the project? *(order of magnitude dollars, or qualitative high/med/low)*	What funding source do you anticipate? *(i.e., local staff time, local budget, grant funding, etc.)*
Low	Plan Review for Mitigation Ensure that local comprehensive plans incorporate disaster mitigation techniques through a courtesy review of all draft plans by the County Economic Development and Planning Department	All Hazards	Both	Village Mayor / CPG Member	Lewis County Dept. of Economic Development & Planning	2011 (continuous)	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	GIS Enhancement Investigate expansion of hazard-related GIS capabilities via acquisition of HAZUS-MH to collect and develop more sophisticated hazard mapping and loss estimation. Use information in future plan updates. Ensure information will be available to the public and to local communities and agencies.	Earthquakes, Wind, and Flood	Both	Village Mayor / CPG Member	Lewis County Emergency Management	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Outreach Program County coordination with local governments and other agencies to systematically contact isolated, vulnerable or special-needs population during severe winter storm events	Winter Storms and Extreme temperatures	Future	Village Mayor / CPG Member	Lewis County Emergency management	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Auxiliary Power Supply Conduct a countywide survey on status of auxiliary power supplies at all critical facilities.	Winter Storms, Wind, Tornado	Existing	Village Mayor / CPG Member	Lewis County Emergency Management/Lewis County Planning	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Low	Wind Hazards Training Provide trainings to municipalities regarding the development and implementation of programs to mitigate wind damage to private and public properties.	Wind, Tornado	Both	Village Mayor / CPG Member	Lewis County Emergency Management	2011	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Winter Driving and Vehicle Preparation Education Provide education opportunities for residents to learn winter driving techniques.	Winter Storms and Wind	Both	Village Mayor / CPG Member	Lewis County Emergency Management	2011	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
High	Winter Storm Public Awareness and Preparation Increase public awareness of personal responsibilities during emergencies, specifically winter storm events	Winter Storms and Snow	Both	Village Mayor / CPG Member	Lewis County Emergency Management	2011	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Low	Emergency Warming Shelters Establish warming shelters for vulnerable populations, including residents and stranded motorists	Extreme Temperatures and Winter Storms	Future	Village Mayor / CPG Member	Lewis County Emergency Management	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time

LEWIS COUNTY HAZARD MITIGATION PLAN - IMPLEMENTATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) Village of Lowville

PRIORITY*	Mitigation Action *	Please list the hazards that the action will address.	Please say whether the action will affect existing assets, future assets, or both?	Which municipal representative will liaise / coordinate with the County to ensure municipal involvement?	What is the existing authority or local planning mechanism through which the action can be implemented?	What is the target date for implementation?	What is the estimated cost of the project? *(order of magnitude dollars, or qualitative high/med/low)*	What funding source do you anticipate? *(i.e., local staff time, local budget, grant funding, etc.)*
Medium	Dam Safety Coordinate with NYSDEC and owners of all high and moderate hazard dams to work towards full compliance with applicable dam safety programs and development/updating of Emergency Action Plans including inundation mapping.	Dam Failure	Both	Village Mayor / CPG Member	Lewis County Emergency Management	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Drought Preparedness Publish and distribute literature (via the County web site, supplemented by hard copy distribution) on water conservation techniques and drought management strategies.	Drought	Both	Village Mayor / CPG Member	Lewis County Emergency Management	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Low	Landslide Study Conduct surveys to determine local vulnerabilities to landslides threatening property and roads, coordinate with municipalities to limit development in these areas and develop remedial measures for existing vulnerabilities.	Landslides	Both	Village Mayor / CPG Member	Soil and Water Conservation District	2015	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Wildfire Mapping Create and distribute mapping and database of wildland access points for firefighters, develop enhanced mapping of urban/wildland interface.	Wildfire	Both	Village Mayor / CPG Member	Lewis County Emergency Management/Lewis County Planning	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Critical Facilities Survey Undertake a year built and level of protection survey for all critical/emergency facilities and shelters to highlight structures built before codes and standards were put in place to provide protection from natural hazards, and pursue potential mitigation opportunities to protect these sites as funding becomes available.	Wind/Tornado, Winter Storms, Earthquakes, and Flooding (including Ice Jams)	Existing	Village Mayor / CPG Member	Lewis County Emergency Management and Building Codes	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time

LEWIS COUNTY HAZARD MITIGATION PLAN - IMPLEMENTATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) Village of Lyons Falls

PRIORITY*	Mitigation Action *	Please list the hazards that the action will address.	Please say whether the action will affect existing assets, future assets, or both?	Which municipal representative will liaise / coordinate with the County to ensure municipal involvement?	What is the existing authority or local planning mechanism through which the action can be implemented?	What is the target date for implementation?	What is the estimated cost of the project? *(order of magnitude dollars, or qualitative high/med/low)*	What funding source do you anticipate? *(i.e., local staff time, local budget, grant funding, etc.)*
Low	Plan Review for Mitigation Ensure that local comprehensive plans incorporate disaster mitigation techniques through a courtesy review of all draft plans by the County Economic Development and Planning Department	All Hazards	Both	Village Mayor / CPG Member	Lewis County Dept. of Economic Development & Planning	2011 (continuous)	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	GIS Enhancement Investigate expansion of hazard-related GIS capabilities via acquisition of HAZUS-MH to collect and develop more sophisticated hazard mapping and loss estimation. Use information in future plan updates. Ensure information will be available to the public and to local communities and agencies.	Earthquakes, Wind, and Flood	Both	Village Mayor / CPG Member	Lewis County Emergency Management	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Outreach Program County coordination with local governments and other agencies to systematically contact isolated, vulnerable or special-needs population during severe winter storm events	Winter Storms and Extreme temperatures	Future	Village Mayor / CPG Member	Lewis County Emergency management	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Auxiliary Power Supply Conduct a countywide survey on status of auxiliary power supplies at all critical facilities.	Winter Storms, Wind, Tornado	Existing	Village Mayor / CPG Member	Lewis County Emergency Management/Lewis County Planning	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Low	Wind Hazards Training Provide trainings to municipalities regarding the development and implementation of programs to mitigate wind damage to private and public properties.	Wind, Tornado	Both	Village Mayor / CPG Member	Lewis County Emergency Management	2011	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Winter Driving and Vehicle Preparation Education Provide education opportunities for residents to learn winter driving techniques.	Winter Storms and Wind	Both	Village Mayor / CPG Member	Lewis County Emergency Management	2011	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
High	Winter Storm Public Awareness and Preparation Increase public awareness of personal responsibilities during emergencies, specifically winter storm events	Winter Storms and Snow	Both	Village Mayor / CPG Member	Lewis County Emergency Management	2011	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Low	Emergency Warming Shelters Establish warming shelters for vulnerable populations, including residents and stranded motorists	Extreme Temperatures and Winter Storms	Future	Village Mayor / CPG Member	Lewis County Emergency Management	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time

LEWIS COUNTY HAZARD MITIGATION PLAN - IMPLEMENTATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) Village of Lyons Falls

PRIORITY*	Mitigation Action *	Please list the hazards that the action will address.	Please say whether the action will affect existing assets, future assets, or both?	Which municipal representative will liaise / coordinate with the County to ensure municipal involvement?	What is the existing authority or local planning mechanism through which the action can be implemented?	What is the target date for implementation?	What is the estimated cost of the project? *(order of magnitude dollars, or qualitative high/med/low)*	What funding source do you anticipate? *(i.e., local staff time, local budget, grant funding, etc.)*
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Medium	Drought Preparedness Publish and distribute literature (via the County web site, supplemented by hard copy distribution) on water conservation techniques and drought management strategies.	Drought	Both	Village Mayor / CPG Member	Lewis County Emergency Management	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Low	Landslide Study Conduct surveys to determine local vulnerabilities to landslides threatening property and roads, coordinate with municipalities to limit development in these areas and develop remedial measures for existing vulnerabilities.	Landslides	Both	Village Mayor / CPG Member	Soil and Water Conservation District	2015	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Wildfire Mapping Create and distribute mapping and database of wildland access points for firefighters, develop enhanced mapping of urban/wildland interface.	Wildfire	Both	Village Mayor / CPG Member	Lewis County Emergency Management/Lewis County Planning	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Critical Facilities Survey Undertake a year built and level of protection survey for all critical/emergency facilities and shelters to highlight structures built before codes and standards were put in place to provide protection from natural hazards, and pursue potential mitigation opportunities to protect these sites as funding becomes available.	Wind/Tornado, Winter Storms, Earthquakes, and Flooding (including Ice Jams)	Existing	Village Mayor / CPG Member	Lewis County Emergency Management and Building Codes	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time

LEWIS COUNTY HAZARD MITIGATION PLAN - IMPLEMENTATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) Town of Lyonsdale

PRIORITY*	Mitigation Action *	Please list the hazards that the action will address.	Please say whether the action will affect existing assets, future assets, or both?	Which municipal representative will liaise / coordinate with the County to ensure municipal involvement?	What is the existing authority or local planning mechanism through which the action can be implemented?	What is the target date for implementation?	What is the estimated cost of the project? *(order of magnitude dollars, or qualitative high/med/low)*	What funding source do you anticipate? *(i.e., local staff time, local budget, grant funding, etc.)*
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Medium	GIS Enhancement Investigate expansion of hazard-related GIS capabilities via acquisition of HAZUS-MH to collect and develop more sophisticated hazard mapping and loss estimation. Use information in future plan updates. Ensure information will be available to the public and to local communities and agencies.	Earthquakes, Wind, and Flood	Both	Town Supervisor / CPG Member	Lewis County Emergency Management	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Outreach Program County coordination with local governments and other agencies to systematically contact isolated, vulnerable or special-needs population during severe winter storm events	Winter Storms and Extreme temperatures	Future	Town Supervisor / CPG Member	Lewis County Emergency management	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Auxiliary Power Supply Conduct a countywide survey on status of auxiliary power supplies at all critical facilities.	Winter Storms, Wind, Tornado	Existing	Town Supervisor / CPG Member	Lewis County Emergency Management/Lewis County Planning	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Low	Wind Hazards Training Provide trainings to municipalities regarding the development and implementation of programs to mitigate wind damage to private and public properties.	Wind, Tornado	Both	Town Supervisor / CPG Member	Lewis County Emergency Management	2011	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Winter Driving and Vehicle Preparation Education Provide education opportunities for residents to learn winter driving techniques.	Winter Storms and Wind	Both	Town Supervisor / CPG Member	Lewis County Emergency Management	2011	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
High	Winter Storm Public Awareness and Preparation Increase public awareness of personal responsibilities during emergencies, specifically winter storm events	Winter Storms and Snow	Both	Town Supervisor / CPG Member	Lewis County Emergency Management	2011	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Low	Emergency Warming Shelters Establish warming shelters for vulnerable populations, including residents and stranded motorists	Extreme Temperatures and Winter Storms	Future	Town Supervisor / CPG Member	Lewis County Emergency Management	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time

LEWIS COUNTY HAZARD MITIGATION PLAN - IMPLEMENTATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) Town of Lyonsdale

PRIORITY*	Mitigation Action *	Please list the hazards that the action will address.	Please say whether the action will affect existing assets, future assets, or both?	Which municipal representative will liaise / coordinate with the County to ensure municipal involvement?	What is the existing authority or local planning mechanism through which the action can be implemented?	What is the target date for implementation?	What is the estimated cost of the project? *(order of magnitude dollars, or qualitative high/med/low)*	What funding source do you anticipate? *(i.e., local staff time, local budget, grant funding, etc.)*
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Medium	Drought Preparedness Publish and distribute literature (via the County web site, supplemented by hard copy distribution) on water conservation techniques and drought management strategies.	Drought	Both	Town Supervisor / CPG Member	Lewis County Emergency Management	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Low	Landslide Study Conduct surveys to determine local vulnerabilities to landslides threatening property and roads, coordinate with municipalities to limit development in these areas and develop remedial measures for existing vulnerabilities.	Landslides	Both	Town Supervisor / CPG Member	Soil and Water Conservation District	2015	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Wildfire Mapping Create and distribute mapping and database of wildland access points for firefighters, develop enhanced mapping of urban/wildland interface.	Wildfire	Both	Town Supervisor / CPG Member	Lewis County Emergency Management/Lewis County Planning	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Critical Facilities Survey Undertake a year built and level of protection survey for all critical/emergency facilities and shelters to highlight structures built before codes and standards were put in place to provide protection from natural hazards, and pursue potential mitigation opportunities to protect these sites as funding becomes available.	Wind/Tornado, Winter Storms, Earthquakes, and Flooding (including Ice Jams)	Existing	Town Supervisor / CPG Member	Lewis County Emergency Management and Building Codes	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time

LEWIS COUNTY HAZARD MITIGATION PLAN - IMPLEMENTATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) Town of Martinsburg

PRIORITY*	Mitigation Action *	Please list the hazards that the action will address.	Please say whether the action will affect existing assets, future assets, or both?	Which municipal representative will liaise / coordinate with the County to ensure municipal involvement?	What is the existing authority or local planning mechanism through which the action can be implemented?	What is the target date for implementation?	What is the estimated cost of the project? *(order of magnitude dollars, or qualitative high/med/low)*	What funding source do you anticipate? *(i.e., local staff time, local budget, grant funding, etc.)*
Low	Plan Review for Mitigation Ensure that local comprehensive plans incorporate disaster mitigation techniques through a courtesy review of all draft plans by the County Economic Development and Planning Department	All Hazards	Both	Town Supervisor / CPG Member	Lewis County Dept. of Economic Development & Planning	2011 (continuous)	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	GIS Enhancement Investigate expansion of hazard-related GIS capabilities via acquisition of HAZUS-MH to collect and develop more sophisticated hazard mapping and loss estimation. Use information in future plan updates. Ensure information will be available to the public and to local communities and agencies.	Earthquakes, Wind, and Flood	Both	Town Supervisor / CPG Member	Lewis County Emergency Management	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Outreach Program County coordination with local governments and other agencies to systematically contact isolated, vulnerable or special-needs population during severe winter storm events	Winter Storms and Extreme temperatures	Future	Town Supervisor / CPG Member	Lewis County Emergency management	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Auxiliary Power Supply Conduct a countywide survey on status of auxiliary power supplies at all critical facilities.	Winter Storms, Wind, Tornado	Existing	Town Supervisor / CPG Member	Lewis County Emergency Management/Lewis County Planning	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Low	Wind Hazards Training Provide trainings to municipalities regarding the development and implementation of programs to mitigate wind damage to private and public properties.	Wind, Tornado	Both	Town Supervisor / CPG Member	Lewis County Emergency Management	2011	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Winter Driving and Vehicle Preparation Education Provide education opportunities for residents to learn winter driving techniques.	Winter Storms and Wind	Both	Town Supervisor / CPG Member	Lewis County Emergency Management	2011	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
High	Winter Storm Public Awareness and Preparation Increase public awareness of personal responsibilities during emergencies, specifically winter storm events	Winter Storms and Snow	Both	Town Supervisor / CPG Member	Lewis County Emergency Management	2011	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Low	Emergency Warming Shelters Establish warming shelters for vulnerable populations, including residents and stranded motorists	Extreme Temperatures and Winter Storms	Future	Town Supervisor / CPG Member	Lewis County Emergency Management	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time

LEWIS COUNTY HAZARD MITIGATION PLAN - IMPLEMENTATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) Town of Martinsburg

PRIORITY*	Mitigation Action *	Please list the hazards that the action will address.	Please say whether the action will affect existing assets, future assets, or both?	Which municipal representative will liaise / coordinate with the County to ensure municipal involvement?	What is the existing authority or local planning mechanism through which the action can be implemented?	What is the target date for implementation?	What is the estimated cost of the project? *(order of magnitude dollars, or qualitative high/med/low)*	What funding source do you anticipate? *(i.e., local staff time, local budget, grant funding, etc.)*
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Medium	Drought Preparedness Publish and distribute literature (via the County web site, supplemented by hard copy distribution) on water conservation techniques and drought management strategies.	Drought	Both	Town Supervisor / CPG Member	Lewis County Emergency Management	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Low	Landslide Study Conduct surveys to determine local vulnerabilities to landslides threatening property and roads, coordinate with municipalities to limit development in these areas and develop remedial measures for existing vulnerabilities.	Landslides	Both	Town Supervisor / CPG Member	Soil and Water Conservation District	2015	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Wildfire Mapping Create and distribute mapping and database of wildland access points for firefighters, develop enhanced mapping of urban/wildland interface.	Wildfire	Both	Town Supervisor / CPG Member	Lewis County Emergency Management/Lewis County Planning	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
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LEWIS COUNTY HAZARD MITIGATION PLAN - IMPLEMENTATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) Town of Montague

PRIORITY*	Mitigation Action *	Please list the hazards that the action will address.	Please say whether the action will affect existing assets, future assets, or both?	Which municipal representative will liaise / coordinate with the County to ensure municipal involvement?	What is the existing authority or local planning mechanism through which the action can be implemented?	What is the target date for implementation?	What is the estimated cost of the project? *(order of magnitude dollars, or qualitative high/med/low)*	What funding source do you anticipate? *(i.e., local staff time, local budget, grant funding, etc.)*
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Medium	Outreach Program County coordination with local governments and other agencies to systematically contact isolated, vulnerable or special-needs population during severe winter storm events	Winter Storms and Extreme temperatures	Future	Town Supervisor / CPG Member	Lewis County Emergency management	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Auxiliary Power Supply Conduct a countywide survey on status of auxiliary power supplies at all critical facilities.	Winter Storms, Wind, Tornado	Existing	Town Supervisor / CPG Member	Lewis County Emergency Management/Lewis County Planning	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Low	Wind Hazards Training Provide trainings to municipalities regarding the development and implementation of programs to mitigate wind damage to private and public properties.	Wind, Tornado	Both	Town Supervisor / CPG Member	Lewis County Emergency Management	2011	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
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High	Winter Storm Public Awareness and Preparation Increase public awareness of personal responsibilities during emergencies, specifically winter storm events	Winter Storms and Snow	Both	Town Supervisor / CPG Member	Lewis County Emergency Management	2011	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Low	Emergency Warming Shelters Establish warming shelters for vulnerable populations, including residents and stranded motorists	Extreme Temperatures and Winter Storms	Future	Town Supervisor / CPG Member	Lewis County Emergency Management	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time

LEWIS COUNTY HAZARD MITIGATION PLAN - IMPLEMENTATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) Town of Montague

PRIORITY*	Mitigation Action *	Please list the hazards that the action will address.	Please say whether the action will affect existing assets, future assets, or both?	Which municipal representative will liaise / coordinate with the County to ensure municipal involvement?	What is the existing authority or local planning mechanism through which the action can be implemented?	What is the target date for implementation?	What is the estimated cost of the project? *(order of magnitude dollars, or qualitative high/med/low)*	What funding source do you anticipate? *(i.e., local staff time, local budget, grant funding, etc.)*
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Medium	Drought Preparedness Publish and distribute literature (via the County web site, supplemented by hard copy distribution) on water conservation techniques and drought management strategies.	Drought	Both	Town Supervisor / CPG Member	Lewis County Emergency Management	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Low	Landslide Study Conduct surveys to determine local vulnerabilities to landslides threatening property and roads, coordinate with municipalities to limit development in these areas and develop remedial measures for existing vulnerabilities.	Landslides	Both	Town Supervisor / CPG Member	Soil and Water Conservation District	2015	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Wildfire Mapping Create and distribute mapping and database of wildland access points for firefighters, develop enhanced mapping of urban/wildland interface.	Wildfire	Both	Town Supervisor / CPG Member	Lewis County Emergency Management/Lewis County Planning	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
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LEWIS COUNTY HAZARD MITIGATION PLAN - IMPLEMENTATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) Town of Osceola

PRIORITY*	Mitigation Action *	Please list the hazards that the action will address.	Please say whether the action will affect existing assets, future assets, or both?	Which municipal representative will liaise / coordinate with the County to ensure municipal involvement?	What is the existing authority or local planning mechanism through which the action can be implemented?	What is the target date for implementation?	What is the estimated cost of the project? *(order of magnitude dollars, or qualitative high/med/low)*	What funding source do you anticipate? *(i.e., local staff time, local budget, grant funding, etc.)*
Low	Plan Review for Mitigation Ensure that local comprehensive plans incorporate disaster mitigation techniques through a courtesy review of all draft plans by the County Economic Development and Planning Department	All Hazards	Both	Town Supervisor / CPG Member	Lewis County Dept. of Economic Development & Planning	2011 (continuous)	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	GIS Enhancement Investigate expansion of hazard-related GIS capabilities via acquisition of HAZUS-MH to collect and develop more sophisticated hazard mapping and loss estimation. Use information in future plan updates. Ensure information will be available to the public and to local communities and agencies.	Earthquakes, Wind, and Flood	Both	Town Supervisor / CPG Member	Lewis County Emergency Management	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Outreach Program County coordination with local governments and other agencies to systematically contact isolated, vulnerable or special-needs population during severe winter storm events	Winter Storms and Extreme temperatures	Future	Town Supervisor / CPG Member	Lewis County Emergency management	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Auxiliary Power Supply Conduct a countywide survey on status of auxiliary power supplies at all critical facilities.	Winter Storms, Wind, Tornado	Existing	Town Supervisor / CPG Member	Lewis County Emergency Management/Lewis County Planning	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Low	Wind Hazards Training Provide trainings to municipalities regarding the development and implementation of programs to mitigate wind damage to private and public properties.	Wind, Tornado	Both	Town Supervisor / CPG Member	Lewis County Emergency Management	2011	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Winter Driving and Vehicle Preparation Education Provide education opportunities for residents to learn winter driving techniques.	Winter Storms and Wind	Both	Town Supervisor / CPG Member	Lewis County Emergency Management	2011	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
High	Winter Storm Public Awareness and Preparation Increase public awareness of personal responsibilities during emergencies, specifically winter storm events	Winter Storms and Snow	Both	Town Supervisor / CPG Member	Lewis County Emergency Management	2011	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Low	Emergency Warming Shelters Establish warming shelters for vulnerable populations, including residents and stranded motorists	Extreme Temperatures and Winter Storms	Future	Town Supervisor / CPG Member	Lewis County Emergency Management	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time

LEWIS COUNTY HAZARD MITIGATION PLAN - IMPLEMENTATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) Town of Osceola

PRIORITY*	Mitigation Action *	Please list the hazards that the action will address.	Please say whether the action will affect existing assets, future assets, or both?	Which municipal representative will liaise / coordinate with the County to ensure municipal involvement?	What is the existing authority or local planning mechanism through which the action can be implemented?	What is the target date for implementation?	What is the estimated cost of the project? *(order of magnitude dollars, or qualitative high/med/low)*	What funding source do you anticipate? *(i.e., local staff time, local budget, grant funding, etc.)*
Medium	Dam Safety Coordinate with NYSDEC and owners of all high and moderate hazard dams to work towards full compliance with applicable dam safety programs and development/updating of Emergency Action Plans including inundation mapping.	Dam Failure	Both	Town Supervisor / CPG Member	Lewis County Emergency Management	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Drought Preparedness Publish and distribute literature (via the County web site, supplemented by hard copy distribution) on water conservation techniques and drought management strategies.	Drought	Both	Town Supervisor / CPG Member	Lewis County Emergency Management	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Low	Landslide Study Conduct surveys to determine local vulnerabilities to landslides threatening property and roads, coordinate with municipalities to limit development in these areas and develop remedial measures for existing vulnerabilities.	Landslides	Both	Town Supervisor / CPG Member	Soil and Water Conservation District	2015	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Wildfire Mapping Create and distribute mapping and database of wildland access points for firefighters, develop enhanced mapping of urban/wildland interface.	Wildfire	Both	Town Supervisor / CPG Member	Lewis County Emergency Management/Lewis County Planning	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Critical Facilities Survey Undertake a year built and level of protection survey for all critical/emergency facilities and shelters to highlight structures built before codes and standards were put in place to provide protection from natural hazards, and pursue potential mitigation opportunities to protect these sites as funding becomes available.	Wind/Tornado, Winter Storms, Earthquakes, and Flooding (including Ice Jams)	Existing	Town Supervisor / CPG Member	Lewis County Emergency Management and Building Codes	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time

LEWIS COUNTY HAZARD MITIGATION PLAN - IMPLEMENTATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) Town of Pinckney

PRIORITY*	Mitigation Action *	Please list the hazards that the action will address.	Please say whether the action will affect existing assets, future assets, or both?	Which municipal representative will liaise / coordinate with the County to ensure municipal involvement?	What is the existing authority or local planning mechanism through which the action can be implemented?	What is the target date for implementation?	What is the estimated cost of the project? *(order of magnitude dollars, or qualitative high/med/low)*	What funding source do you anticipate? *(i.e., local staff time, local budget, grant funding, etc.)*
Low	Plan Review for Mitigation Ensure that local comprehensive plans incorporate disaster mitigation techniques through a courtesy review of all draft plans by the County Economic Development and Planning Department	All Hazards	Both	Town Supervisor / CPG Member	Lewis County Dept. of Economic Development & Planning	2011 (continuous)	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	GIS Enhancement Investigate expansion of hazard-related GIS capabilities via acquisition of HAZUS-MH to collect and develop more sophisticated hazard mapping and loss estimation. Use information in future plan updates. Ensure information will be available to the public and to local communities and agencies.	Earthquakes, Wind, and Flood	Both	Town Supervisor / CPG Member	Lewis County Emergency Management	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Outreach Program County coordination with local governments and other agencies to systematically contact isolated, vulnerable or special-needs population during severe winter storm events	Winter Storms and Extreme temperatures	Future	Town Supervisor / CPG Member	Lewis County Emergency management	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Auxiliary Power Supply Conduct a countywide survey on status of auxiliary power supplies at all critical facilities.	Winter Storms, Wind, Tornado	Existing	Town Supervisor / CPG Member	Lewis County Emergency Management/Lewis County Planning	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Low	Wind Hazards Training Provide trainings to municipalities regarding the development and implementation of programs to mitigate wind damage to private and public properties.	Wind, Tornado	Both	Town Supervisor / CPG Member	Lewis County Emergency Management	2011	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Winter Driving and Vehicle Preparation Education Provide education opportunities for residents to learn winter driving techniques.	Winter Storms and Wind	Both	Town Supervisor / CPG Member	Lewis County Emergency Management	2011	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
High	Winter Storm Public Awareness and Preparation Increase public awareness of personal responsibilities during emergencies, specifically winter storm events	Winter Storms and Snow	Both	Town Supervisor / CPG Member	Lewis County Emergency Management	2011	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Low	Emergency Warming Shelters Establish warming shelters for vulnerable populations, including residents and stranded motorists	Extreme Temperatures and Winter Storms	Future	Town Supervisor / CPG Member	Lewis County Emergency Management	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time

LEWIS COUNTY HAZARD MITIGATION PLAN - IMPLEMENTATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) Town of Pinckney

PRIORITY*	Mitigation Action *	Please list the hazards that the action will address.	Please say whether the action will affect existing assets, future assets, or both?	Which municipal representative will liaise / coordinate with the County to ensure municipal involvement?	What is the existing authority or local planning mechanism through which the action can be implemented?	What is the target date for implementation?	What is the estimated cost of the project? *(order of magnitude dollars, or qualitative high/med/low)*	What funding source do you anticipate? *(i.e., local staff time, local budget, grant funding, etc.)*
Medium	Dam Safety Coordinate with NYSDEC and owners of all high and moderate hazard dams to work towards full compliance with applicable dam safety programs and development/updating of Emergency Action Plans including inundation mapping.	Dam Failure	Both	Town Supervisor / CPG Member	Lewis County Emergency Management	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Drought Preparedness Publish and distribute literature (via the County web site, supplemented by hard copy distribution) on water conservation techniques and drought management strategies.	Drought	Both	Town Supervisor / CPG Member	Lewis County Emergency Management	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Low	Landslide Study Conduct surveys to determine local vulnerabilities to landslides threatening property and roads, coordinate with municipalities to limit development in these areas and develop remedial measures for existing vulnerabilities.	Landslides	Both	Town Supervisor / CPG Member	Soil and Water Conservation District	2015	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Wildfire Mapping Create and distribute mapping and database of wildland access points for firefighters, develop enhanced mapping of urban/wildland interface.	Wildfire	Both	Town Supervisor / CPG Member	Lewis County Emergency Management/Lewis County Planning	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Critical Facilities Survey Undertake a year built and level of protection survey for all critical/emergency facilities and shelters to highlight structures built before codes and standards were put in place to provide protection from natural hazards, and pursue potential mitigation opportunities to protect these sites as funding becomes available.	Wind/Tornado, Winter Storms, Earthquakes, and Flooding (including Ice Jams)	Existing	Town Supervisor / CPG Member	Lewis County Emergency Management and Building Codes	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time

LEWIS COUNTY HAZARD MITIGATION PLAN - IMPLEMENTATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) Village of Port Leyden

PRIORITY*	Mitigation Action *	Please list the hazards that the action will address.	Please say whether the action will affect existing assets, future assets, or both?	Which municipal representative will liaise / coordinate with the County to ensure municipal involvement?	What is the existing authority or local planning mechanism through which the action can be implemented?	What is the target date for implementation?	What is the estimated cost of the project? *(order of magnitude dollars, or qualitative high/med/low)*	What funding source do you anticipate? *(i.e., local staff time, local budget, grant funding, etc.)*
Low	Plan Review for Mitigation Ensure that local comprehensive plans incorporate disaster mitigation techniques through a courtesy review of all draft plans by the County Economic Development and Planning Department	All Hazards	Both	Village Mayor / CPG Member	Lewis County Dept. of Economic Development & Planning	2011 (continuous)	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	GIS Enhancement Investigate expansion of hazard-related GIS capabilities via acquisition of HAZUS-MH to collect and develop more sophisticated hazard mapping and loss estimation. Use information in future plan updates. Ensure information will be available to the public and to local communities and agencies.	Earthquakes, Wind, and Flood	Both	Village Mayor / CPG Member	Lewis County Emergency Management	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Outreach Program County coordination with local governments and other agencies to systematically contact isolated, vulnerable or special-needs population during severe winter storm events	Winter Storms and Extreme temperatures	Future	Village Mayor / CPG Member	Lewis County Emergency management	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Auxiliary Power Supply Conduct a countywide survey on status of auxiliary power supplies at all critical facilities.	Winter Storms, Wind, Tornado	Existing	Village Mayor / CPG Member	Lewis County Emergency Management/Lewis County Planning	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Low	Wind Hazards Training Provide trainings to municipalities regarding the development and implementation of programs to mitigate wind damage to private and public properties.	Wind, Tornado	Both	Village Mayor / CPG Member	Lewis County Emergency Management	2011	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Winter Driving and Vehicle Preparation Education Provide education opportunities for residents to learn winter driving techniques.	Winter Storms and Wind	Both	Village Mayor / CPG Member	Lewis County Emergency Management	2011	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
High	Winter Storm Public Awareness and Preparation Increase public awareness of personal responsibilities during emergencies, specifically winter storm events	Winter Storms and Snow	Both	Village Mayor / CPG Member	Lewis County Emergency Management	2011	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Low	Emergency Warming Shelters Establish warming shelters for vulnerable populations, including residents and stranded motorists	Extreme Temperatures and Winter Storms	Future	Village Mayor / CPG Member	Lewis County Emergency Management	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time

LEWIS COUNTY HAZARD MITIGATION PLAN - IMPLEMENTATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) Village of Port Leyden

PRIORITY*	Mitigation Action *	Please list the hazards that the action will address.	Please say whether the action will affect existing assets, future assets, or both?	Which municipal representative will liaise / coordinate with the County to ensure municipal involvement?	What is the existing authority or local planning mechanism through which the action can be implemented?	What is the target date for implementation?	What is the estimated cost of the project? *(order of magnitude dollars, or qualitative high/med/low)*	What funding source do you anticipate? *(i.e., local staff time, local budget, grant funding, etc.)*
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Medium	Drought Preparedness Publish and distribute literature (via the County web site, supplemented by hard copy distribution) on water conservation techniques and drought management strategies.	Drought	Both	Village Mayor / CPG Member	Lewis County Emergency Management	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Low	Landslide Study Conduct surveys to determine local vulnerabilities to landslides threatening property and roads, coordinate with municipalities to limit development in these areas and develop remedial measures for existing vulnerabilities.	Landslides	Both	Village Mayor / CPG Member	Soil and Water Conservation District	2015	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Wildfire Mapping Create and distribute mapping and database of wildland access points for firefighters, develop enhanced mapping of urban/wildland interface.	Wildfire	Both	Village Mayor / CPG Member	Lewis County Emergency Management/Lewis County Planning	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Critical Facilities Survey Undertake a year built and level of protection survey for all critical/emergency facilities and shelters to highlight structures built before codes and standards were put in place to provide protection from natural hazards, and pursue potential mitigation opportunities to protect these sites as funding becomes available.	Wind/Tornado, Winter Storms, Earthquakes, and Flooding (including Ice Jams)	Existing	Village Mayor / CPG Member	Lewis County Emergency Management and Building Codes	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time

LEWIS COUNTY HAZARD MITIGATION PLAN - IMPLEMENTATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) Town of West Turin

PRIORITY*	Mitigation Action *	Please list the hazards that the action will address.	Please say whether the action will affect existing assets, future assets, or both?	Which municipal representative will liaise / coordinate with the County to ensure municipal involvement?	What is the existing authority or local planning mechanism through which the action can be implemented?	What is the target date for implementation?	What is the estimated cost of the project? *(order of magnitude dollars, or qualitative high/med/low)*	What funding source do you anticipate? *(i.e., local staff time, local budget, grant funding, etc.)*
Low	Plan Review for Mitigation Ensure that local comprehensive plans incorporate disaster mitigation techniques through a courtesy review of all draft plans by the County Economic Development and Planning Department	All Hazards	Both	Town Supervisor / CPG Member	Lewis County Dept. of Economic Development & Planning	2011 (continuous)	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
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Low	Wind Hazards Training Provide trainings to municipalities regarding the development and implementation of programs to mitigate wind damage to private and public properties.	Wind, Tornado	Both	Town Supervisor / CPG Member	Lewis County Emergency Management	2011	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Winter Driving and Vehicle Preparation Education Provide education opportunities for residents to learn winter driving techniques.	Winter Storms and Wind	Both	Town Supervisor / CPG Member	Lewis County Emergency Management	2011	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
High	Winter Storm Public Awareness and Preparation Increase public awareness of personal responsibilities during emergencies, specifically winter storm events	Winter Storms and Snow	Both	Town Supervisor / CPG Member	Lewis County Emergency Management	2011	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Low	Emergency Warming Shelters Establish warming shelters for vulnerable populations, including residents and stranded motorists	Extreme Temperatures and Winter Storms	Future	Town Supervisor / CPG Member	Lewis County Emergency Management	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time

LEWIS COUNTY HAZARD MITIGATION PLAN - IMPLEMENTATION OF COUNTY-WIDE ACTIONS

(Name of Jurisdiction) Town of West Turin

PRIORITY*	Mitigation Action *	Please list the hazards that the action will address.	Please say whether the action will affect existing assets, future assets, or both?	Which municipal representative will liaise / coordinate with the County to ensure municipal involvement?	What is the existing authority or local planning mechanism through which the action can be implemented?	What is the target date for implementation?	What is the estimated cost of the project? *(order of magnitude dollars, or qualitative high/med/low)*	What funding source do you anticipate? *(i.e., local staff time, local budget, grant funding, etc.)*
Medium	Dam Safety Coordinate with NYSDEC and owners of all high and moderate hazard dams to work towards full compliance with applicable dam safety programs and development/updating of Emergency Action Plans including inundation mapping.	Dam Failure	Both	Town Supervisor / CPG Member	Lewis County Emergency Management	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
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Low	Landslide Study Conduct surveys to determine local vulnerabilities to landslides threatening property and roads, coordinate with municipalities to limit development in these areas and develop remedial measures for existing vulnerabilities.	Landslides	Both	Town Supervisor / CPG Member	Soil and Water Conservation District	2015	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Wildfire Mapping Create and distribute mapping and database of wildland access points for firefighters, develop enhanced mapping of urban/wildland interface.	Wildfire	Both	Town Supervisor / CPG Member	Lewis County Emergency Management/Lewis County Planning	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time
Medium	Critical Facilities Survey Undertake a year built and level of protection survey for all critical/emergency facilities and shelters to highlight structures built before codes and standards were put in place to provide protection from natural hazards, and pursue potential mitigation opportunities to protect these sites as funding becomes available.	Wind/Tornado, Winter Storms, Earthquakes, and Flooding (including Ice Jams)	Existing	Town Supervisor / CPG Member	Lewis County Emergency Management and Building Codes	2012	Low cost to municipality, County to bear bulk of costs	Local budget Staff time

APPENDIX D –

NATIONAL FLOOD INSURANCE PROGRAM COMPLIANCE ACTIONS

Lewis County Multi-Jurisdictional Hazard Mitigation Planning Project
NFIP COMPLIANCE ACTIONS WORKSHEET

(Name of Jurisdiction) Village of Castorland

First:

1. Please fill in the following table. *(Note: All municipalities in Lewis County currently participate in the National Flood Insurance Program except for the Town of Montague; NFIP participating communities DO have a floodplain management ordinance AND a Floodplain Administrator on their books.)*

Name of Your Jurisdiction	Adoption Date of your Current Floodplain Management Ordinance	Position Title of Your Jurisdiction's Designated Floodplain Administrator	Number of Municipal Staff with Roles in Enforcement of Floodplain Management Ordinance
Village of Castorland	3/26/76	Supt of Public Works	3

Please give a brief description of activities currently undertaken by your municipality to enforce your floodplain management ordinance:
Careful watch during flood season, monitoring of Stillwater flow management. Alerting fire company of pending flood.

Next:

2. If your current floodplain management ordinance was adopted before 1996 and has not been subsequently revised, then fill in Row 1 on Pages 2 and 3. *(Please leave Row 1 blank if your ordinance is current as of 1996 or later.)*
3. If your jurisdiction currently does not have a specific person filling the position title of Floodplain Administrator, or if the person filling this position is unaware of their role/responsibilities, then fill in Row 2 on Pages 2 and 3. *(Otherwise please leave Row 2 blank).*
4. If you consider the present level of staffing insufficient to adequately enforce your floodplain management ordinance, then fill in Row 3 on Pages 2 and 3. *(Please leave Row 3 blank if you feel current staffing levels are adequate.)*
5. Please fill in Row 4 on Pages 2 and 3 to evaluate how you plan to update your floodplain management ordinance to be consistent with revised Flood Insurance Rate Maps that may at some point become available in the future for Lewis County. (*Note that FEMA has not included Lewis County as part of its Map Modernization study; thus, no new mapping is anticipated in the near future. However, everyone should still fill in Row 4.)*
6. If floodplain management staff members in your municipality are not Certified Floodplain Managers (CFMs: www.floods.org), then please fill in Row 5 on Pages 2 and 3. *(Please leave Row 5 blank if your floodplain managers are already CFMs.)*
7. If your municipality is not already a participant in FEMA's Community Rating System (CRS: http://www.fema.gov/business/nfip/crs.shtm), please fill in Row 6 on Pages 2 and 3. *(No jurisdictions in Lewis County currently participate in the CRS; everyone should fill in Row 6.)*
8. If you consider there to be additional activities that could be undertaken to enforce your municipality's floodplain management ordinance beyond what your municipality is already doing, please list these actions in the blank Rows 7 and 8 on Pages 2 and 3. *(Otherwise, you can leave Rows 7 and 8 blank.)* * Feel free to attach additional pages if you need more space.

Lewis County Multi-Jurisdictional Hazard Mitigation Planning Project
NFIP COMPLIANCE ACTIONS WORKSHEET

(Name of Jurisdiction) Village of Castorland

PRIORITIZATION

NFIP Compliance Action	"-" = cost (unfavorable)					"0"=neutral or not applicable		"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
1. Update/revise floodplain management ordinances to comply with latest FEMA regulations	0	0	+	0	0	0	+	+	+	+	Med	Low	Low
2. Designate/install a specific person to be your municipality's Floodplain Administrator	0	0	+	+	0	0	0	+	+	+	Med	Low	Low
3. Add/train sufficient members of staff to adequately enforce NFIP regulations/floodplain management ordinances	0	0	-	-	0	0	0	+	0	-	Med	Med	Low
4. Update/revise floodplain management ordinances to be consistent with potential future new FIRMs	0	0	+	0	-	0	0	+	+	+	Med	Med	Low
5. Require staff involved in Floodplain management and ordinance enforcement to become Certified Floodplain Managers (CFMs)	0	-	-	0	0	-	0	+	-	+	Med	Med	Low
6. Join the Community Rating System (CRS)	0	0	-	+	0	-	+	+	+	+	Med	Med	Low
7.													
8.													

Lewis County Multi-Jurisdictional Hazard Mitigation Planning Project
NFIP COMPLIANCE ACTIONS WORKSHEET

(Name of Jurisdiction) Village of Castorland

IMPLEMENTATION STRATEGY

Priority	NFIP Compliance Action	Applies to Community Assets (Existing / New / Both)	Primary Department Responsible	Existing Local Planning Mechanism through which the action will be implemented	Target Date	Cost Estimate	Funding Source
	1. Update/revise floodplain management ordinances to comply with latest FEMA regulations	Yes	Public Works Clerk/Treas	Trustees	2011	$1000	Local
	2. Designate/install a specific person to be your municipality's Floodplain Administrator	yes	Public Wks	Trustees	2011	–	–
	3. Add/train sufficient members of staff to adequately enforce NFIP regulations/floodplain management ordinances	yes	Public Wks Clerk/Treas	Trustees	2011	–	–
	4. Update/revise floodplain management ordinances to be consistent with potential future new FIRMs	yes	Public Wks Clerk/Treas	Trustees	2011	–	–
	5. Require staff involved in Floodplain management and ordinance enforcement to become Certified Floodplain Managers (CFMs)	yes	Public Wks	Trustees	2011	$500	Local
	6. Join the Community Rating System (CRS)	yes	Public Wks Clerk/Treas	Trustees	2011	–	Local
	7.						
	8.						

Lewis County Multi-Jurisdictional Hazard Mitigation Planning Project
NFIP COMPLIANCE ACTIONS WORKSHEET

(Name of Jurisdiction) Village of Constableville

First:

1. Please fill in the following table. *(Note: All municipalities in Lewis County currently participate in the National Flood Insurance Program except for the Town of Montague; NFIP participating communities DO have a floodplain management ordinance AND a Floodplain Administrator on their books.)*

Name of Your Jurisdiction	Adoption Date of your Current Floodplain Management Ordinance	Position Title of Your Jurisdiction's Designated Floodplain Administrator	Number of Municipal Staff with Roles in Enforcement of Floodplain Management Ordinance
Village of Constableville	July 16, 1982	Codes Enforcement Officer	None

Please give a brief description of activities currently undertaken by your municipality to enforce your floodplain management ordinance:

Lewis County Code Enforcement Dept. handles the Village of Constableville's Floodplain Management Ordinance

Next:

2. If your current floodplain management ordinance was adopted before 1996 and has not been subsequently revised, then fill in Row 1 on Pages 2 and 3. *(Please leave Row 1 blank if your ordinance is current as of 1996 or later.)*
3. If your jurisdiction currently does not have a specific person filling the position title of Floodplain Administrator, or if the person filling this position is unaware of their role/responsibilities, then fill in Row 2 on Pages 2 and 3. *(Otherwise please leave Row 2 blank).*
4. If you consider the present level of staffing insufficient to adequately enforce your floodplain management ordinance, then fill in Row 3 on Pages 2 and 3. *(Please leave Row 3 blank if you feel current staffing levels are adequate.)*
5. Please fill in Row 4 on Pages 2 and 3 to evaluate how you plan to update your floodplain management ordinance to be consistent with revised Flood Insurance Rate Maps that may at some point become available in the future for Lewis County. (*Note that FEMA has not included Lewis County as part of its Map Modernization study; thus, no new mapping is anticipated in the near future. However, everyone should still fill in Row 4.)*
6. If floodplain management staff members in your municipality are not Certified Floodplain Managers (CFMs: www.floods.org), then please fill in Row 5 on Pages 2 and 3. *(Please leave Row 5 blank if your floodplain managers are already CFMs.)*
7. If your municipality is not already a participant in FEMA's Community Rating System (CRS: http://www.fema.gov/business/nfip/crs.shtm), please fill in Row 6 on Pages 2 and 3. *(No jurisdictions in Lewis County currently participate in the CRS; everyone should fill in Row 6.)*
8. If you consider there to be additional activities that could be undertaken to enforce your municipality's floodplain management ordinance beyond what your municipality is already doing, please list these actions in the blank Rows 7 and 8 on Pages 2 and 3. *(Otherwise, you can leave Rows 7 and 8 blank.)* * Feel free to attach additional pages if you need more space.

Lewis County Multi-Jurisdictional Hazard Mitigation Planning Project
NFIP COMPLIANCE ACTIONS WORKSHEET

(Name of Jurisdiction) Village of Constableville

PRIORITIZATION

NFIP Compliance Action	"-" = cost (unfavorable) "0"=neutral or not applicable "+" = benefit (favorable)										(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
1. Update/revise floodplain management ordinances to comply with latest FEMA regulations	+	+	0	+	+	+	+	+	+	+	high	low	low
2. Designate/install a specific person to be your municipality's Floodplain Administrator													
3. Add/train sufficient members of staff to adequately enforce NFIP regulations/floodplain management ordinances													
4. Update/revise floodplain management ordinances to be consistent with potential future new FIRMs	+	-	0	+	+	-	+	+	+	+	high	med.	low
5. Require staff involved in Floodplain management and ordinance enforcement to become Certified Floodplain Managers (CFMs)													
6. Join the Community Rating System (CRS)	+	+	+	+	+	+	+	+	+	+	high	med.	low
7.													
8.													

Lewis County Multi-Jurisdictional Hazard Mitigation Planning Project
NFIP COMPLIANCE ACTIONS WORKSHEET

(Name of Jurisdiction) Village of Constableville

IMPLEMENTATION STRATEGY

Priority	NFIP Compliance Action	Applies to Community Assets (Existing / New / Both)	Primary Department Responsible	Existing Local Planning Mechanism through which the action will be implemented	Target Date	Cost Estimate	Funding Source
	1. Update/revise floodplain management ordinances to comply with latest FEMA regulations	Both	Lewis County Codes Enforcment	Codes Enforcment Officer	Fall 2010	$ 2,000.	HMGP
	2. Designate/install a specific person to be your municipality's Floodplain Administrator						
	3. Add/train sufficient members of staff to adequately enforce NFIP regulations/floodplain management ordinances						
	4. Update/revise floodplain management ordinances to be consistent with potential future new FIRMs	Both	Lewis County Codes Enforcment	Codes Enforcement Officer	Fall 2010	$ 2,000.	HMGP
	5. Require staff involved in Floodplain management and ordinance enforcement to become Certified Floodplain Managers (CFMs)						
	6. Join the Community Rating System (CRS)	New	Lewis Co. Codes Enforc.	Codes Enforcement Officer	Fall 2010	$ 2,000.	HMGP
	7.						
	8.						

Lewis County Multi-Jurisdictional Hazard Mitigation Planning Project
NFIP COMPLIANCE ACTIONS WORKSHEET

(Name of Jurisdiction)_____Town of Croghan_____

First:

1. Please fill in the following table. *(Note: All municipalities in Lewis County currently participate in the National Flood Insurance Program except for the Town of Montague; NFIP participating communities DO have a floodplain management ordinance AND a Floodplain Administrator on their books.)*

Name of Your Jurisdiction	Adoption Date of your Current Floodplain Management Ordinance	Position Title of Your Jurisdiction's Designated Floodplain Administrator	Number of Municipal Staff with Roles in Enforcement of Floodplain Management Ordinance
Town of Croghan	**1985**	**Town Supervisor**	**1**
Please give a brief description of activities currently undertaken by your municipality to enforce your floodplain management ordinance: **Review development permits before construction or development within flood hazard zones.**			

***Next*:**

2. If your current floodplain management ordinance was adopted before 1996 and has not been subsequently revised, then fill in Row 1 on Pages 2 and 3. *(Please leave Row 1 blank if your ordinance is current as of 1996 or later.)*
3. If your jurisdiction currently does not have a specific person filling the position title of Floodplain Administrator, or if the person filling this position is unaware of their role/responsibilities, then fill in Row 2 on Pages 2 and 3. *(Otherwise please leave Row 2 blank).*
4. If you consider the present level of staffing insufficient to adequately enforce your floodplain management ordinance, then fill in Row 3 on Pages 2 and 3. *(Please leave Row 3 blank if you feel current staffing levels are adequate.)*
5. Please fill in Row 4 on Pages 2 and 3 to evaluate how you plan to update your floodplain management ordinance to be consistent with revised Flood Insurance Rate Maps that may at some point become available in the future for Lewis County. (*Note that FEMA has not included Lewis County as part of its Map Modernization study; thus, no new mapping is anticipated in the near future. However, everyone should still fill in Row 4.)*
6. If floodplain management staff members in your municipality are not Certified Floodplain Managers (CFMs: www.floods.org), then please fill in Row 5 on Pages 2 and 3. *(Please leave Row 5 blank if your floodplain managers are already CFMs.)*
7. If your municipality is not already a participant in FEMA's Community Rating System (CRS: http://www.fema.gov/business/nfip/crs.shtm), please fill in Row 6 on Pages 2 and 3. *(No jurisdictions in Lewis County currently participate in the CRS; everyone should fill in Row 6.)*
8. If you consider there to be additional activities that could be undertaken to enforce your municipality's floodplain management ordinance beyond what your municipality is already doing, please list these actions in the blank Rows 7 and 8 on Pages 2 and 3. *(Otherwise, you can leave Rows 7 and 8 blank.)* * Feel free to attach additional pages if you need more space.

Lewis County Multi-Jurisdictional Hazard Mitigation Planning Project
NFIP COMPLIANCE ACTIONS WORKSHEET

(Name of Jurisdiction)_____Town of Croghan_____

PRIORITIZATION

NFIP Compliance Action	"-" = cost (unfavorable)					"0"=neutral or not applicable	"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
1. Update/revise floodplain management ordinances to comply with latest FEMA regulations	+	+	-	0	-	+	+	+	+	+	High	Med	High
2. Designate/install a specific person to be your municipality's Floodplain Administrator	0	+	+	0	0	0	+	+	+	+	High	Low	Med
3. Add/train sufficient members of staff to adequately enforce NFIP regulations/floodplain management ordinances	+	+	-	0	0	+	+	+	+	+	Med	Low	Med
4. Update/revise floodplain management ordinances to be consistent with potential future new FIRMs	0	+	-	+	0	+	+	+	+	0	High	Med	Med
5. Require staff involved in Floodplain management and ordinance enforcement to become Certified Floodplain Managers (CFMs)	0	+	0	+	0	+	+	+	+	+	Med	Low	Med
6. Join the Community Rating System (CRS)	+	+	-	+	0	+	0	+	+	+	High	Med	Low
7.													
8.													

Lewis County Multi-Jurisdictional Hazard Mitigation Planning Project

NFIP COMPLIANCE ACTIONS WORKSHEET

(Name of Jurisdiction)_____Town of Croghan_____

IMPLEMENTATION STRATEGY

Priority	NFIP Compliance Action	Applies to Community Assets (Existing / New / Both)	Primary Department Responsible	Existing Local Planning Mechanism through which the action will be implemented	Target Date	Cost Estimate	Funding Source
High	1. Update/revise floodplain management ordinances to comply with latest FEMA regulations	Both	Town Board	Town Board	2010	$500	Local Budget
Medium	2. Designate/install a specific person to be your municipalityõs Floodplain Administrator	Both	Town Board	Town Board	2010	0	
Medium	3. Add/train sufficient members of staff to adequately enforce NFIP regulations/floodplain management ordinances	Both	Town Board	Town Board	2011	$500	Local Budget Grant
Medium	4. Update/revise floodplain management ordinances to be consistent with potential future new FIRMs	Both	Town Board	Town Board	2011	$500-$1,000	Local Budget
Medium	5. Require staff involved in Floodplain management and ordinance enforcement to become Certified Floodplain Managers (CFMs)	Both	Town Board	Town Board	2011	$500-$1,000	Local budget Grant
Low	6. Join the Community Rating System (CRS)	Both	Town Board	Town Board	2011	0	
	7.						
	8.						

Lewis County Multi-Jurisdictional Hazard Mitigation Planning Project
NFIP COMPLIANCE ACTIONS WORKSHEET

(Name of Jurisdiction) **Village of Croghan**

First:

1. Please fill in the following table. *(Note: All municipalities in Lewis County currently participate in the National Flood Insurance Program except for the Town of Montague; NFIP participating communities DO have a floodplain management ordinance AND a Floodplain Administrator on their books.)*

Name of Your Jurisdiction	Adoption Date of your Current Floodplain Management Ordinance	Position Title of Your Jurisdiction's Designated Floodplain Administrator	Number of Municipal Staff with Roles in Enforcement of Floodplain Management Ordinance
Village of Croghan	**5/31/74 – updated 5/15/85**	**Mayor, Village of Croghan**	**5**
Please give a brief description of activities currently undertaken by your municipality to enforce your floodplain management ordinance: **The mayor delegates the Lewis County Code Officer as the Flood Plain Manager.**			

***Next*:**

2. If your current floodplain management ordinance was adopted before 1996 and has not been subsequently revised, then fill in Row 1 on Pages 2 and 3. *(Please leave Row 1 blank if your ordinance is current as of 1996 or later.)*
3. If your jurisdiction currently does not have a specific person filling the position title of Floodplain Administrator, or if the person filling this position is unaware of their role/responsibilities, then fill in Row 2 on Pages 2 and 3. *(Otherwise please leave Row 2 blank).*
4. If you consider the present level of staffing insufficient to adequately enforce your floodplain management ordinance, then fill in Row 3 on Pages 2 and 3. *(Please leave Row 3 blank if you feel current staffing levels are adequate.)*
5. Please fill in Row 4 on Pages 2 and 3 to evaluate how you plan to update your floodplain management ordinance to be consistent with revised Flood Insurance Rate Maps that may at some point become available in the future for Lewis County. (*Note that FEMA has not included Lewis County as part of its Map Modernization study; thus, no new mapping is anticipated in the near future. However, everyone should still fill in Row 4.)*
6. If floodplain management staff members in your municipality are not Certified Floodplain Managers (CFMs: www.floods.org), then please fill in Row 5 on Pages 2 and 3. *(Please leave Row 5 blank if your floodplain managers are already CFMs.)*
7. If your municipality is not already a participant in FEMAôs Community Rating System (CRS: http://www.fema.gov/business/nfip/crs.shtm), please fill in Row 6 on Pages 2 and 3. *(No jurisdictions in Lewis County currently participate in the CRS; everyone should fill in Row 6.)*
8. If you consider there to be additional activities that could be undertaken to enforce your municipalityôs floodplain management ordinance beyond what your municipality is already doing, please list these actions in the blank Rows 7 and 8 on Pages 2 and 3. *(Otherwise, you can leave Rows 7 and 8 blank.)* * Feel free to attach additional pages if you need more space.

Lewis County Multi-Jurisdictional Hazard Mitigation Planning Project
NFIP COMPLIANCE ACTIONS WORKSHEET

(Name of Jurisdiction) Village of Croghan

PRIORITIZATION

NFIP Compliance Action	"-" = cost (unfavorable)					"0"=neutral or not applicable	"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
1. Update/revise floodplain management ordinances to comply with latest FEMA regulations	+	+	+	+	-	+	+	-	+	0	+	MED	HIGH
2. Designate/install a specific person to be your municipalityõs Floodplain Administrator	+	+	+	+	+	+	+	+	+	+	+	MED	MED
3. Add/train sufficient members of staff to adequately enforce NFIP regulations/floodplain management ordinances	+	+	+	+	+	+	+	+	+	+	+	MED	MED
4. Update/revise floodplain management ordinances to be consistent with potential future new FIRMs	+	+	+	+	+	+	+	+	+	+	+	MED	MED
5. Require staff involved in Floodplain management and ordinance enforcement to become Certified Floodplain Managers (CFMs)	+	+	+	+	+	+	+	+	+	+	+	MED	MED
6. Join the Community Rating System (CRS)	+	+	+	+	+	+	+	+	+	+	+	MED	MED
7.													
8.													

Lewis County Multi-Jurisdictional Hazard Mitigation Planning Project

NFIP COMPLIANCE ACTIONS WORKSHEET

(Name of Jurisdiction) Village of Croghan

IMPLEMENTATION STRATEGY

Priority	NFIP Compliance Action	Applies to Community Assets (Existing / New / Both)	Primary Department Responsible	Existing Local Planning Mechanism through which the action will be implemented	Target Date	Cost Estimate	Funding Source
HIGH	1. Update/revise floodplain management ordinances to comply with latest FEMA regulations	BOTH	Lewis County Planning Dept.	Lewis County Building Codes	2011	MED	Lewis County Budget
MED	2. Designate/install a specific person to be your municipalityôs Floodplain Administrator	BOTH	Village Board	Village Board	2011	LOW	Village Budget
MED	3. Add/train sufficient members of staff to adequately enforce NFIP regulations/floodplain management ordinances	BOTH	Lewis County Planning Dept	Lewis County Building Codes	2011	MED	Lewis County Budget
MED	4. Update/revise floodplain management ordinances to be consistent with potential future new FIRMs	BOTH	Lewis County Planning Dept	Lewis County Building Codes	Ongoing	MED	Lewis County Budget
MED	5. Require staff involved in Floodplain management and ordinance enforcement to become Certified Floodplain Managers (CFMs)	BOTH	Lewis County Planning Dept	Lewis County Planning Dept	2011	MED	Lewis County Budget
MED	6. Join the Community Rating System (CRS)	BOTH	Lewis County Planning Dept	Lewis County Planning Dept	2011	MED	Lewis County Budget
	7.						
	8.						

Lewis County Multi-Jurisdictional Hazard Mitigation Planning Project
NFIP COMPLIANCE ACTIONS WORKSHEET

(Name of Jurisdiction) T/O Denmark

First:

1. Please fill in the following table. *(Note: All municipalities in Lewis County currently participate in the National Flood Insurance Program except for the Town of Montague; NFIP participating communities DO have a floodplain management ordinance AND a Floodplain Administrator on their books.)*

Name of Your Jurisdiction	Adoption Date of your Current Floodplain Management Ordinance	Position Title of Your Jurisdiction's Designated Floodplain Administrator	Number of Municipal Staff with Roles in Enforcement of Floodplain Management Ordinance
T/O Denmark	1987	LLOYD woodruff	1
Please give a brief description of activities currently undertaken by your municipality to enforce your floodplain management ordinance: All Building Permits In Flood Plain are Reviewed By Planning Bd.			

Next:

2. If your current floodplain management ordinance was adopted before 1996 and has not been subsequently revised, then fill in Row 1 on Pages 2 and 3. *(Please leave Row 1 blank if your ordinance is current as of 1996 or later.)*
3. If your jurisdiction currently does not have a specific person filling the position title of Floodplain Administrator, or if the person filling this position is unaware of their role/responsibilities, then fill in Row 2 on Pages 2 and 3. *(Otherwise please leave Row 2 blank).*
4. If you consider the present level of staffing insufficient to adequately enforce your floodplain management ordinance, then fill in Row 3 on Pages 2 and 3. *(Please leave Row 3 blank if you feel current staffing levels are adequate.)*
5. Please fill in Row 4 on Pages 2 and 3 to evaluate how you plan to update your floodplain management ordinance to be consistent with revised Flood Insurance Rate Maps that may at some point become available in the future for Lewis County. (*Note that FEMA has not included Lewis County as part of its Map Modernization study; thus, no new mapping is anticipated in the near future. However, everyone should still fill in Row 4.)*
6. If floodplain management staff members in your municipality are not Certified Floodplain Managers (CFMs: www.floods.org), then please fill in Row 5 on Pages 2 and 3. *(Please leave Row 5 blank if your floodplain managers are already CFMs.)*
7. If your municipality is not already a participant in FEMA's Community Rating System (CRS: http://www.fema.gov/business/nfip/crs.shtm), please fill in Row 6 on Pages 2 and 3. *(No jurisdictions in Lewis County currently participate in the CRS; everyone should fill in Row 6.)*
8. If you consider there to be additional activities that could be undertaken to enforce your municipality's floodplain management ordinance beyond what your municipality is already doing, please list these actions in the blank Rows 7 and 8 on Pages 2 and 3. *(Otherwise, you can leave Rows 7 and 8 blank.)* * Feel free to attach additional pages if you need more space.

Lewis County Multi-Jurisdictional Hazard Mitigation Planning Project
NFIP COMPLIANCE ACTIONS WORKSHEET

(Name of Jurisdiction) T/U Denmark

PRIORITIZATION

NFIP Compliance Action	"-" = cost (unfavorable)					"0"=neutral or not applicable	"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
1. Update/revise floodplain management ordinances to comply with latest FEMA regulations	+	+	+	+	−	+	−	X			High X		
2. Designate/install a specific person to be your municipality's Floodplain Administrator													
3. Add/train sufficient members of staff to adequately enforce NFIP regulations/floodplain management ordinances													
4. Update/revise floodplain management ordinances to be consistent with potential future new FIRMs	+	+	+	+	−	+	−	X			High X		
5. Require staff involved in Floodplain management and ordinance enforcement to become Certified Floodplain Managers (CFMs)	+	+	+	+	−	+	−	X			High		
6. Join the Community Rating System (CRS)								X			High		
7.													
8.													

Lewis County Multi-Jurisdictional Hazard Mitigation Planning Project
NFIP COMPLIANCE ACTIONS WORKSHEET

(Name of Jurisdiction) T/O Denmark

IMPLEMENTATION STRATEGY

Priority	NFIP Compliance Action	Applies to Community Assets (Existing / New / Both)	Primary Department Responsible	Existing Local Planning Mechanism through which the action will be implemented	Target Date	Cost Estimate	Funding Source
	1. Update/revise floodplain management ordinances to comply with latest FEMA regulations	Both	Planning Bd	Planning Bd Mtg	12/10		T/D
	2. Designate/install a specific person to be your municipality's Floodplain Administrator	Both	Planning Bd	LLOYD woodruff			T/D
	3. Add/train sufficient members of staff to adequately enforce NFIP regulations/floodplain management ordinances	Both	Planning Bd	NOT AT This Time	?		T/D
	4. Update/revise floodplain management ordinances to be consistent with potential future new FIRMs	Both	Planning Bd	Planning Bd Mtg	12/10		T/D
	5. Require staff involved in Floodplain management and ordinance enforcement to become Certified Floodplain Managers (CFMs)	Both	Planning Bd	CLASSES	12/10		T/D
	6. Join the Community Rating System (CRS)	Both	Planning Bd		12/10		T/D
	7.						
	8.						

Lewis County Multi-Jurisdictional Hazard Mitigation Planning Project

NFIP COMPLIANCE ACTIONS WORKSHEET

(Name of Jurisdiction) Town of Diana

First:

1. Please fill in the following table. *(Note: All municipalities in Lewis County currently participate in the National Flood Insurance Program except for the Town of Montague; NFIP participating communities DO have a floodplain management ordinance AND a Floodplain Administrator on their books.)*

Name of Your Jurisdiction	Adoption Date of your Current Floodplain Management Ordinance	Position Title of Your Jurisdiction's Designated Floodplain Administrator	Number of Municipal Staff with Roles in Enforcement of Floodplain Management Ordinance
Town of Diana	**09/08/1992**	**Deputy Supervisor**	**1**
Please give a brief description of activities currently undertaken by your municipality to enforce your floodplain management ordinance: **Review permits before construction within Flood Plain Hazard Zones**			

***Next*:**

2. If your current floodplain management ordinance was adopted before 1996 and has not been subsequently revised, then fill in Row 1 on Pages 2 and 3. *(Please leave Row 1 blank if your ordinance is current as of 1996 or later.)*
3. If your jurisdiction currently does not have a specific person filling the position title of Floodplain Administrator, or if the person filling this position is unaware of their role/responsibilities, then fill in Row 2 on Pages 2 and 3. *(Otherwise please leave Row 2 blank).*
4. If you consider the present level of staffing insufficient to adequately enforce your floodplain management ordinance, then fill in Row 3 on Pages 2 and 3. *(Please leave Row 3 blank if you feel current staffing levels are adequate.)*
5. Please fill in Row 4 on Pages 2 and 3 to evaluate how you plan to update your floodplain management ordinance to be consistent with revised Flood Insurance Rate Maps that may at some point become available in the future for Lewis County. (*Note that FEMA has not included Lewis County as part of its Map Modernization study; thus, no new mapping is anticipated in the near future. However, everyone should still fill in Row 4.)*
6. If floodplain management staff members in your municipality are not Certified Floodplain Managers (CFMs: www.floods.org), then please fill in Row 5 on Pages 2 and 3. *(Please leave Row 5 blank if your floodplain managers are already CFMs.)*
7. If your municipality is not already a participant in FEMAôs Community Rating System (CRS: http://www.fema.gov/business/nfip/crs.shtm), please fill in Row 6 on Pages 2 and 3. *(No jurisdictions in Lewis County currently participate in the CRS; everyone should fill in Row 6.)*
8. If you consider there to be additional activities that could be undertaken to enforce your municipalityôs floodplain management ordinance beyond what your municipality is already doing, please list these actions in the blank Rows 7 and 8 on Pages 2 and 3. *(Otherwise, you can leave Rows 7 and 8 blank.)* * Feel free to attach additional pages if you need more space.

Lewis County Multi-Jurisdictional Hazard Mitigation Planning Project
NFIP COMPLIANCE ACTIONS WORKSHEET

(Name of Jurisdiction) Town of Diana

PRIORITIZATION

NFIP Compliance Action	"-" = cost (unfavorable)					"0"=neutral or not applicable	"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
1. Update/revise floodplain management ordinances to comply with latest FEMA regulations	+	+	+	0	-	+	+	+	+	+	HIGH	MED	HIGH
2. Designate/install a specific person to be your municipalityôs Floodplain Administrator	0	+	+	0	0	0	+	+	+	+	HIGH	LOW	HIGH
3. Add/train sufficient members of staff to adequately enforce NFIP regulations/floodplain management ordinances	+	+	-	0	0	+	+	+	+	+	MED	LOW	MED
4. Update/revise floodplain management ordinances to be consistent with potential future new FIRMs	0	+	-	+	0	+	+	+	+	+	MED	MED	MED
5. Require staff involved in Floodplain management and ordinance enforcement to become Certified Floodplain Managers (CFMs)	0	+	0	+	0	+	+	+	+	+	MED	LOW	MED
6. Join the Community Rating System (CRS)	0	+	-	0	0	+	0	+	+	+	MED	MED	LOW
7.													
8.													

Lewis County Multi-Jurisdictional Hazard Mitigation Planning Project
NFIP COMPLIANCE ACTIONS WORKSHEET

(Name of Jurisdiction) Town of Diana

IMPLEMENTATION STRATEGY

Priority	NFIP Compliance Action	Applies to Community Assets (Existing / New / Both)	Primary Department Responsible	Existing Local Planning Mechanism through which the action will be implemented	Target Date	Cost Estimate	Funding Source
HIGH	1. Update/revise floodplain management ordinances to comply with latest FEMA regulations	Both	Diana Town Board	Diana Town Board	2010	$500 - $1000	Local Budget
HIGH	2. Designate/install a specific person to be your municipalityôs Floodplain Administrator	Both	Diana Town Board	Diana Town Board	2010	0	–
MED	3. Add/train sufficient members of staff to adequately enforce NFIP regulations/floodplain management ordinances	Both	Diana Town Board	Diana Town Board	2011	$500	Local Budget/ Grants
MED	4. Update/revise floodplain management ordinances to be consistent with potential future new FIRMs	Both	Diana Town Board	Diana Town Board	2011	$500 - $1000	Local Budget/ Grants
MED	5. Require staff involved in Floodplain management and ordinance enforcement to become Certified Floodplain Managers (CFMs)	Both	Diana Town Board	Diana Town Board	2011	$500 - $1000	Local Budget/ Grants
LOW	6. Join the Community Rating System (CRS)	Both	Diana Town Board	Diana Town Board	2011	0	–
	7.						

Lewis County Multi-Jurisdictional Hazard Mitigation Planning Project

NFIP COMPLIANCE ACTIONS WORKSHEET

(Name of Jurisdiction) **Town Of Greig**

First:

1. Please fill in the following table. *(Note: All municipalities in Lewis County currently participate in the National Flood Insurance Program except for the Town of Montague; NFIP participating communities DO have a floodplain management ordinance AND a Floodplain Administrator on their books.)*

Name of Your Jurisdiction	Adoption Date of your Current Floodplain Management Ordinance	Position Title of Your Jurisdiction's Designated Floodplain Administrator	Number of Municipal Staff with Roles in Enforcement of Floodplain Management Ordinance
Town of Greig	**10/08/2008**	**Town Code Enforcement Officer**	**1**
Please give a brief description of activities currently undertaken by your municipality to enforce your floodplain management ordinance: **All Land Use and Building Applications are reviewed by Code Enforcement Officer to ensure floodplain restriction compliance.**			

Next:

2. If your current floodplain management ordinance was adopted before 1996 and has not been subsequently revised, then fill in Row 1 on Pages 2 and 3. *(Please leave Row 1 blank if your ordinance is current as of 1996 or later.)*
3. If your jurisdiction currently does not have a specific person filling the position title of Floodplain Administrator, or if the person filling this position is unaware of their role/responsibilities, then fill in Row 2 on Pages 2 and 3. *(Otherwise please leave Row 2 blank).*
4. If you consider the present level of staffing insufficient to adequately enforce your floodplain management ordinance, then fill in Row 3 on Pages 2 and 3. *(Please leave Row 3 blank if you feel current staffing levels are adequate.)*
5. Please fill in Row 4 on Pages 2 and 3 to evaluate how you plan to update your floodplain management ordinance to be consistent with revised Flood Insurance Rate Maps that may at some point become available in the future for Lewis County. (*Note that FEMA has not included Lewis County as part of its Map Modernization study; thus, no new mapping is anticipated in the near future. However, everyone should still fill in Row 4.)*
6. If floodplain management staff members in your municipality are not Certified Floodplain Managers (CFMs: www.floods.org), then please fill in Row 5 on Pages 2 and 3. *(Please leave Row 5 blank if your floodplain managers are already CFMs.)*
7. If your municipality is not already a participant in FEMAôs Community Rating System (CRS: http://www.fema.gov/business/nfip/crs.shtm), please fill in Row 6 on Pages 2 and 3. *(No jurisdictions in Lewis County currently participate in the CRS; everyone should fill in Row 6.)*
8. If you consider there to be additional activities that could be undertaken to enforce your municipalityôs floodplain management ordinance beyond what your municipality is already doing, please list these actions in the blank Rows 7 and 8 on Pages 2 and 3. *(Otherwise, you can leave Rows 7 and 8 blank.)* * Feel free to attach additional pages if you need more space.

Lewis County Multi-Jurisdictional Hazard Mitigation Planning Project
NFIP COMPLIANCE ACTIONS WORKSHEET

(Name of Jurisdiction) Town Of Greig

PRIORITIZATION

NFIP Compliance Action	"-" = cost (unfavorable)					"0"=neutral or not applicable	"+" = benefit (favorable)				(high, medium, or low)		
	S	**T**	**A**	**P**	**L**	**E**	**E**	**Can be implemented easily**	**Achieves multiple objectives**	**Can be implemented quickly**	**Overall Benefits**	**Overall Costs**	**Priority**
1. Update/revise floodplain management ordinances to comply with latest FEMA regulations													
2. Designate/install a specific person to be your municipalityôs Floodplain Administrator													
3. Add/train sufficient members of staff to adequately enforce NFIP regulations/floodplain management ordinances													
4. Update/revise floodplain management ordinances to be consistent with potential future new FIRMs	+	+	-	-	-	+	**0**	+	+	+	**Med**	**Low**	**Med**
5. Require staff involved in Floodplain management and ordinance enforcement to become Certified Floodplain Managers (CFMs)	+	+	-	+	-	+	**0**	+	+	+	**Med**	**Low**	**Med**
6. Join the Community Rating System (CRS)	+	**0**	-	+	+	+	**0**	+	**0**	+	**Med**	**Low**	**Med**
7.													
8.													

Lewis County Multi-Jurisdictional Hazard Mitigation Planning Project

NFIP COMPLIANCE ACTIONS WORKSHEET

(Name of Jurisdiction) Town Of Greig

IMPLEMENTATION STRATEGY

Priority	NFIP Compliance Action	Applies to Community Assets (Existing / New / Both)	Primary Department Responsible	Existing Local Planning Mechanism through which the action will be implemented	Target Date	Cost Estimate	Funding Source
	1. Update/revise floodplain management ordinances to comply with latest FEMA regulations						
	2. Designate/install a specific person to be your municipalityõs Floodplain Administrator						
	3. Add/train sufficient members of staff to adequately enforce NFIP regulations/floodplain management ordinances						
	4. Update/revise floodplain management ordinances to be consistent with potential future new FIRMs	Both	Code Enforcement Officer	Town Board/Planning Board	2014	Low	Budget
	5. Require staff involved in Floodplain management and ordinance enforcement to become Certified Floodplain Managers (CFMs)	Both	Code Enforcement Officer	Town Board/Local Rule	2014	Low	Budget
	6. Join the Community Rating System (CRS)	Both	Town Board/Code Office	Town Board/Planning Board	2012	Low	Budget
	7.						
	8.						

Lewis County Multi-Jurisdictional Hazard Mitigation Planning Project

NFIP COMPLIANCE ACTIONS WORKSHEET

(Name of Jurisdiction) Town of Harrisburg

First:

1. Please fill in the following table. *(Note: All municipalities in Lewis County currently participate in the National Flood Insurance Program except for the Town of Montague; NFIP participating communities DO have a floodplain management ordinance AND a Floodplain Administrator on their books.)*

Name of Your Jurisdiction	Adoption Date of your Current Floodplain Management Ordinance	Position Title of Your Jurisdiction's Designated Floodplain Administrator	Number of Municipal Staff with Roles in Enforcement of Floodplain Management Ordinance
Town of Harrisburg	**None on record**	**Supervisor**	**1**
Please give a brief description of activities currently undertaken by your municipality to enforce your floodplain management ordinance: **- No designated floodplain in Town – Checked with County and State – No record of ordinance**			

***Next*:**

2. If your current floodplain management ordinance was adopted before 1996 and has not been subsequently revised, then fill in Row 1 on Pages 2 and 3. *(Please leave Row 1 blank if your ordinance is current as of 1996 or later.)*
3. If your jurisdiction currently does not have a specific person filling the position title of Floodplain Administrator, or if the person filling this position is unaware of their role/responsibilities, then fill in Row 2 on Pages 2 and 3. *(Otherwise please leave Row 2 blank).*
4. If you consider the present level of staffing insufficient to adequately enforce your floodplain management ordinance, then fill in Row 3 on Pages 2 and 3. *(Please leave Row 3 blank if you feel current staffing levels are adequate.)*
5. Please fill in Row 4 on Pages 2 and 3 to evaluate how you plan to update your floodplain management ordinance to be consistent with revised Flood Insurance Rate Maps that may at some point become available in the future for Lewis County. (*Note that FEMA has not included Lewis County as part of its Map Modernization study; thus, no new mapping is anticipated in the near future. However, everyone should still fill in Row 4.)*
6. If floodplain management staff members in your municipality are not Certified Floodplain Managers (CFMs: www.floods.org), then please fill in Row 5 on Pages 2 and 3. *(Please leave Row 5 blank if your floodplain managers are already CFMs.)*
7. If your municipality is not already a participant in FEMA's Community Rating System (CRS: http://www.fema.gov/business/nfip/crs.shtm), please fill in Row 6 on Pages 2 and 3. *(No jurisdictions in Lewis County currently participate in the CRS; everyone should fill in Row 6.)*
8. If you consider there to be additional activities that could be undertaken to enforce your municipality's floodplain management ordinance beyond what your municipality is already doing, please list these actions in the blank Rows 7 and 8 on Pages 2 and 3. *(Otherwise, you can leave Rows 7 and 8 blank.)* * Feel free to attach additional pages if you need more space.

Lewis County Multi-Jurisdictional Hazard Mitigation Planning Project
NFIP COMPLIANCE ACTIONS WORKSHEET

(Name of Jurisdiction) Town of Harrisburg

PRIORITIZATION

NFIP Compliance Action	"-" = cost (unfavorable)					"0"=neutral or not applicable		"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
1. Update/revise floodplain management ordinances to comply with latest FEMA regulations	+	+	0	+	-	+	+	+	+	+	High	Low	Medium
2. Designate/install a specific person to be your municipalityôs Floodplain Administrator	0	+	+	+	0	0	0	+	+	+	High	Low	Medium
3. Add/train sufficient members of staff to adequately enforce NFIP regulations/floodplain management ordinances	+	+	+	0	0	+	+	+	+	+	Medium	Medium	Low
4. Update/revise floodplain management ordinances to be consistent with potential future new FIRMs	0	+	+	0	-	+	+	+	+	+	High	Medium	Low
5. Require staff involved in Floodplain management and ordinance enforcement to become Certified Floodplain Managers (CFMs)	+	+	+	+	0	+	+	+	+	+	High	Medium	Low
6. Join the Community Rating System (CRS)	+	+	+	+	0	0	0	+	+	+	High	Low	Low
7.Locate Flood Damage Prevention Law & Review	0	+	+	0	0	0	0	+	+	+	High	Low	Medium
8.													

Lewis County Multi-Jurisdictional Hazard Mitigation Planning Project

NFIP COMPLIANCE ACTIONS WORKSHEET

(Name of Jurisdiction)_____

IMPLEMENTATION STRATEGY

Priority	NFIP Compliance Action	Applies to Community Assets (Existing / New / Both)	Primary Department Responsible	Existing Local Planning Mechanism through which the action will be implemented	Target Date	Cost Estimate	Funding Source
Medium	1. Update/revise floodplain management ordinances to comply with latest FEMA regulations	Both	Town Board	Town Board	2012	$500	Local budget
Medium	2. Designate/install a specific person to be your municipalityôs Floodplain Administrator	Both	Town Board	Town Board	2010	$0	Local budget
Low	3. Add/train sufficient members of staff to adequately enforce NFIP regulations/floodplain management ordinances	Both	Town Board	Town Board	2015	$500	Local budget
Low	4. Update/revise floodplain management ordinances to be consistent with potential future new FIRMs	Both	Town Board	Town Board	2015	$500	Local budget
Low	5. Require staff involved in Floodplain management and ordinance enforcement to become Certified Floodplain Managers (CFMs)	Both	Town Board	Town Board	2015	$500	Local budget
Low	6. Join the Community Rating System (CRS)	Both	Town Board	Town Board	2015	$0	Local budget
Medium	7. Locate Flood Damage Prevention Law & Review	Both	Town Board	Town Board	2010	$0	Local budget
	8.						

Lewis County Multi-Jurisdictional Hazard Mitigation Planning Project

NFIP COMPLIANCE ACTIONS WORKSHEET

(Name of Jurisdiction) Town of Lewis

First:

1. Please fill in the following table. *(Note: All municipalities in Lewis County currently participate in the National Flood Insurance Program except for the Town of Montague; NFIP participating communities DO have a floodplain management ordinance AND a Floodplain Administrator on their books.)*

Name of Your Jurisdiction	Adoption Date of your Current Floodplain Management Ordinance	Position Title of Your Jurisdiction's Designated Floodplain Administrator	Number of Municipal Staff with Roles in Enforcement of Floodplain Management Ordinance
Town of Lewis	**Unknown**	**Town Supervisor**	**1**
Please give a brief description of activities currently undertaken by your municipality to enforce your floodplain management ordinance:			

Next:

2. If your current floodplain management ordinance was adopted before 1996 and has not been subsequently revised, then fill in Row 1 on Pages 2 and 3. *(Please leave Row 1 blank if your ordinance is current as of 1996 or later.)*
3. If your jurisdiction currently does not have a specific person filling the position title of Floodplain Administrator, or if the person filling this position is unaware of their role/responsibilities, then fill in Row 2 on Pages 2 and 3. *(Otherwise please leave Row 2 blank).*
4. If you consider the present level of staffing insufficient to adequately enforce your floodplain management ordinance, then fill in Row 3 on Pages 2 and 3. *(Please leave Row 3 blank if you feel current staffing levels are adequate.)*
5. Please fill in Row 4 on Pages 2 and 3 to evaluate how you plan to update your floodplain management ordinance to be consistent with revised Flood Insurance Rate Maps that may at some point become available in the future for Lewis County. (*Note that FEMA has not included Lewis County as part of its Map Modernization study; thus, no new mapping is anticipated in the near future. However, everyone should still fill in Row 4.)*
6. If floodplain management staff members in your municipality are not Certified Floodplain Managers (CFMs: www.floods.org), then please fill in Row 5 on Pages 2 and 3. *(Please leave Row 5 blank if your floodplain managers are already CFMs.)*
7. If your municipality is not already a participant in FEMA's Community Rating System (CRS: http://www.fema.gov/business/nfip/crs.shtm), please fill in Row 6 on Pages 2 and 3. *(No jurisdictions in Lewis County currently participate in the CRS; everyone should fill in Row 6.)*
8. If you consider there to be additional activities that could be undertaken to enforce your municipality's floodplain management ordinance beyond what your municipality is already doing, please list these actions in the blank Rows 7 and 8 on Pages 2 and 3. *(Otherwise, you can leave Rows 7 and 8 blank.)* * Feel free to attach additional pages if you need more space.

Lewis County Multi-Jurisdictional Hazard Mitigation Planning Project
NFIP COMPLIANCE ACTIONS WORKSHEET

(Name of Jurisdiction) Town of Lewis

PRIORITIZATION

NFIP Compliance Action	"-" = cost (unfavorable)					"0"=neutral or not applicable	"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
1. Update/revise floodplain management ordinances to comply with latest FEMA regulations	+	+	-	0	-	+	+	+	+	+	High	Low	Med
2. Designate/install a specific person to be your municipalityôs Floodplain Administrator	0	+	+	0	0	0	+	+	+	+	High	Low	
3. Add/train sufficient members of staff to adequately enforce NFIP regulations/floodplain management ordinances	+	+	-	0	0	+	+	+	+	+	Med	Low	Low
4. Update/revise floodplain management ordinances to be consistent with potential future new FIRMs	+	+	-	+	-	+	+	+	+	+	High	Med	Low
5. Require staff involved in Floodplain management and ordinance enforcement to become Certified Floodplain Managers (CFMs)	0	+	-	+	0	+	+	+	+	+	Med	Low	Low
6. Join the Community Rating System (CRS)	0	+	-	+	0	0	+	+	+	0	Low	Med	Low
7.Locate Floodplain Management Ordinance and Review Criteria	+	+	-	0	+	+	+	+	+	+	High	Low	High
8.													

Lewis County Multi-Jurisdictional Hazard Mitigation Planning Project
NFIP COMPLIANCE ACTIONS WORKSHEET

(Name of Jurisdiction) Town of Lewis

IMPLEMENTATION STRATEGY

Priority	NFIP Compliance Action	Applies to Community Assets (Existing / New / Both)	Primary Department Responsible	Existing Local Planning Mechanism through which the action will be implemented	Target Date	Cost Estimate	Funding Source
Med	1. Update/revise floodplain management ordinances to comply with latest FEMA regulations	Both	Town Board	Town Board	2011	$500	Local Budget
	2. Designate/install a specific person to be your municipalityõs Floodplain Administrator	Both	Town Board	Town Board	2010	$0	
Low	3. Add/train sufficient members of staff to adequately enforce NFIP regulations/floodplain management ordinances	Both	Town Board	Town Board	2012	$500	Local Budget
Low	4. Update/revise floodplain management ordinances to be consistent with potential future new FIRMs	Both	Town Board	Town Board	2013	$500	Local Budget
Low	5. Require staff involved in Floodplain management and ordinance enforcement to become Certified Floodplain Managers (CFMs)	Both	Town Board	Town Board	2013	$500	Local Budget
Low	6. Join the Community Rating System (CRS)	Both	Town Board	Town Board	2015	$0	
High	7.Locate Floodplain Management Ordinance and Review Criteria	Both	Town Board	Town Board	2010	$0	
	8.						

Lewis County Multi-Jurisdictional Hazard Mitigation Planning Project
NFIP COMPLIANCE ACTIONS WORKSHEET

(Name of Jurisdiction) Town of Leyden

First:

1. Please fill in the following table. *(Note: All municipalities in Lewis County currently participate in the National Flood Insurance Program except for the Town of Montague; NFIP participating communities DO have a floodplain management ordinance AND a Floodplain Administrator on their books.)*

Name of Your Jurisdiction	Adoption Date of your Current Floodplain Management Ordinance	Position Title of Your Jurisdiction's Designated Floodplain Administrator	Number of Municipal Staff with Roles in Enforcement of Floodplain Management Ordinance
Town of Leyden	1987	Code enforcement officer	(1)

Please give a brief description of activities currently undertaken by your municipality to enforce your floodplain management ordinance:

Permit Application & Review
interpretation of Flood Hazard area
Stop work orders - Inspections

Next:

2. If your current floodplain management ordinance was adopted before 1996 and has not been subsequently revised, then fill in Row 1 on Pages 2 and 3. *(Please leave Row 1 blank if your ordinance is current as of 1996 or later.)*
3. If your jurisdiction currently does not have a specific person filling the position title of Floodplain Administrator, or if the person filling this position is unaware of their role/responsibilities, then fill in Row 2 on Pages 2 and 3. *(Otherwise please leave Row 2 blank).*
4. If you consider the present level of staffing insufficient to adequately enforce your floodplain management ordinance, then fill in Row 3 on Pages 2 and 3. *(Please leave Row 3 blank if you feel current staffing levels are adequate.)*
5. Please fill in Row 4 on Pages 2 and 3 to evaluate how you plan to update your floodplain management ordinance to be consistent with revised Flood Insurance Rate Maps that may at some point become available in the future for Lewis County. (*Note that FEMA has not included Lewis County as part of its Map Modernization study; hence no new mapping is anticipated in the near future. However, everyone should still fill in Row 4.)*
6. If floodplain management staff members in your municipality are not Certified Floodplain Managers (CFMs: www.floods.org), then please fill in Row 5 on Pages 2 and 3. *(Please leave Row 5 blank if your floodplain managers are already CFMs.)*
7. If your municipality is not already a participant in FEMA's Community Rating System (CRS: http://www.fema.gov/business/nfip/crs.shtm), please fill in Row 6 on Pages 2 and 3. *(No jurisdictions in Lewis County currently participate in the CRS; everyone should fill in Row 6.)*
8. If you consider there to be additional activities that could be undertaken to enforce your municipality's floodplain management ordinance beyond what your municipality is already doing, please list these actions in the blank Rows 7 and 8 on Pages 2 and 3. *(Otherwise, you can leave Rows 7 and 8 blank.)* * Feel free to attach additional pages if you need more space.

Lewis County Multi-Jurisdictional Hazard Mitigation Planning Project
NFIP COMPLIANCE ACTIONS WORKSHEET

(Name of Jurisdiction) Town of Leyden

PRIORITIZATION

NFIP Compliance Action	"-" = cost (unfavorable) "0"=neutral or not applicable "+" = benefit (favorable)										(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
1. Update/revise floodplain management ordinances to comply with latest FEMA regulations	+	+	+	+	+	+	+	+	+	+	+	+	High
2. Designate/install a specific person to be your municipality's Floodplain Administrator	+	+	+	+	+	+	+	+	+	+	+	+	Medium
3. Add/train sufficient members of staff to adequately enforce NFIP regulations/floodplain management ordinances	+	+	+	+	+	+	+	+	+	+	+	+	Low
4. Update/revise floodplain management ordinances to be consistent with potential future new FIRMs	+	+	+	+	+	+	+	+	+	+	+	+	Medium
5. Require staff involved in Floodplain management and ordinance enforcement to become Certified Floodplain Managers (CFMs)	+	+	+	−	+	−	−	0	−	0	0	−	Low
6. Join the Community Rating System (CRS)	+	+	+	+	+	+	+	0	0	0	0	0	Low
7.													
8.													

Lewis County Multi-Jurisdictional Hazard Mitigation Planning Project
NFIP COMPLIANCE ACTIONS WORKSHEET

(Name of Jurisdiction) Town of Leyden

IMPLEMENTATION STRATEGY

NFIP Compliance Action	Applies to Community Assets (Existing / New / Both)	Primary Department Responsible	Existing Local Planning Mechanism through which the action will be implemented	Target Date	Cost Estimate	Funding Source
1. Update/revise floodplain management ordinances to comply with latest FEMA regulations	Both	Board	Board	2011	500.00	Local Budget
2. Designate/install a specific person to be your municipality's Floodplain Administrator	Both	Board	Board			
3. Add/train sufficient members of staff to adequately enforce NFIP regulations/floodplain management ordinances	Both	Board	Board	2013	500.00	Local Budget
4. Update/revise floodplain management ordinances to be consistent with potential future new FIRMs	Both	Board	Board	2013	500.00	local Budget
5. Require staff involved in Floodplain management and ordinance enforcement to become Certified Floodplain Managers (CFMs)	Both	Board	Board	2012	600.00	Local Budget
6. Join the Community Rating System (CRS)	Both	Board	Board	2013		
7.						
8.						

Lewis County Multi-Jurisdictional Hazard Mitigation Planning Project

NFIP COMPLIANCE ACTIONS WORKSHEET

(Name of Jurisdiction) Town of Lowville

First:

1. Please fill in the following table. *(Note: All municipalities in Lewis County currently participate in the National Flood Insurance Program except for the Town of Montague; NFIP participating communities DO have a floodplain management ordinance AND a Floodplain Administrator on their books.)*

Name of Your Jurisdiction	Adoption Date of your Current Floodplain Management Ordinance	Position Title of Your Jurisdiction's Designated Floodplain Administrator	Number of Municipal Staff with Roles in Enforcement of Floodplain Management Ordinance
Town of Lowville	**March 31, 1987**	**Charles Stevens T/V of Lowville Planning Board**	**2**
Please give a brief description of activities currently undertaken by your municipality to enforce your floodplain management ordinance: Flood plain permits are required for all buildings constructed in the flood plain areas; Local Zoning Laws			

***Next*:**

2. If your current floodplain management ordinance was adopted before 1996 and has not been subsequently revised, then fill in Row 1 on Pages 2 and 3. *(Please leave Row 1 blank if your ordinance is current as of 1996 or later.)*
3. If your jurisdiction currently does not have a specific person filling the position title of Floodplain Administrator, or if the person filling this position is unaware of their role/responsibilities, then fill in Row 2 on Pages 2 and 3. *(Otherwise please leave Row 2 blank).*
4. If you consider the present level of staffing insufficient to adequately enforce your floodplain management ordinance, then fill in Row 3 on Pages 2 and 3. *(Please leave Row 3 blank if you feel current staffing levels are adequate.)*
5. Please fill in Row 4 on Pages 2 and 3 to evaluate how you plan to update your floodplain management ordinance to be consistent with revised Flood Insurance Rate Maps that may at some point become available in the future for Lewis County. (*Note that FEMA has not included Lewis County as part of its Map Modernization study; thus, no new mapping is anticipated in the near future. However, everyone should still fill in Row 4.)*
6. If floodplain management staff members in your municipality are not Certified Floodplain Managers (CFMs: www.floods.org), then please fill in Row 5 on Pages 2 and 3. *(Please leave Row 5 blank if your floodplain managers are already CFMs.)*
7. If your municipality is not already a participant in FEMAôs Community Rating System (CRS: http://www.fema.gov/business/nfip/crs.shtm), please fill in Row 6 on Pages 2 and 3. *(No jurisdictions in Lewis County currently participate in the CRS; everyone should fill in Row 6.)*
8. If you consider there to be additional activities that could be undertaken to enforce your municipalityôs floodplain management ordinance beyond what your municipality is already doing, please list these actions in the blank Rows 7 and 8 on Pages 2 and 3. *(Otherwise, you can leave Rows 7 and 8 blank.)* * Feel free to attach additional pages if you need more space.

Lewis County Multi-Jurisdictional Hazard Mitigation Planning Project
NFIP COMPLIANCE ACTIONS WORKSHEET

(Name of Jurisdiction) Town of Lowville

PRIORITIZATION

NFIP Compliance Action	"-" = cost (unfavorable)					"0"=neutral or not applicable	"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
1. Update/revise floodplain management ordinances to comply with latest FEMA regulations	+	+	+	+	+	+	+	+	+	+	**High**	**Medium**	**High**
2. Designate/install a specific person to be your municipalityõs Floodplain Administrator	+	+	+	+	+	+	+	+	+	+	**High**	**Medium**	**High**
3. Add/train sufficient members of staff to adequately enforce NFIP regulations/floodplain management ordinances	+	+	+	+	+	-	+	+	+	+	**High**	**Medium**	**High**
4. Update/revise floodplain management ordinances to be consistent with potential future new FIRMs	+	+	+	+	+	-	+	+	+	+	**High**	**Medium**	**High**
5. Require staff involved in Floodplain management and ordinance enforcement to become Certified Floodplain Managers (CFMs)	+	+	+	+	+	-	+	+	+	+	**High**	**Medium**	**High**
6. Join the Community Rating System (CRS)	+	+	+	+	+	-	+	+	+	+	**High**	**Medium**	**High**
7.													
8.													

Lewis County Multi-Jurisdictional Hazard Mitigation Planning Project
NFIP COMPLIANCE ACTIONS WORKSHEET

(Name of Jurisdiction) Town of Lowville

IMPLEMENTATION STRATEGY

Priority	NFIP Compliance Action	Applies to Community Assets (Existing / New / Both)	Primary Department Responsible	Existing Local Planning Mechanism through which the action will be implemented	Target Date	Cost Estimate	Funding Source
High	1. Update/revise floodplain management ordinances to comply with latest FEMA regulations	Both	Municipality	Municipality	12/31/10	$5,000	Municipal Budgets
High	2. Designate/install a specific person to be your municipalityõs Floodplain Administrator	Both	Municipality	Municipality	12/31/10	$2,000	Municipal Budgets
High	3. Add/train sufficient members of staff to adequately enforce NFIP regulations/floodplain management ordinances	Both	Municipality	Municipality	12/31/10	$2,000	Municipal Budgets
High	4. Update/revise floodplain management ordinances to be consistent with potential future new FIRMs	Both	Municipality	Municipality	12/31/10	$5,000	Municipal Budgets
High	5. Require staff involved in Floodplain management and ordinance enforcement to become Certified Floodplain Managers (CFMs)	Both	Municipality	Municipality	12/31/10	$4,000	Municipal Budgets
High	6. Join the Community Rating System (CRS)	Both	Municipality	Municipality	12/31/10	$1,200	Municipal Budgets
	7.						
	8.						

Lewis County Multi-Jurisdictional Hazard Mitigation Planning Project

NFIP COMPLIANCE ACTIONS WORKSHEET

(Name of Jurisdiction) Village of Lowville

First:

1. Please fill in the following table. *(Note: All municipalities in Lewis County currently participate in the National Flood Insurance Program except for the Town of Montague; NFIP participating communities DO have a floodplain management ordinance AND a Floodplain Administrator on their books.)*

Name of Your Jurisdiction	Adoption Date of your Current Floodplain Management Ordinance	Position Title of Your Jurisdiction's Designated Floodplain Administrator	Number of Municipal Staff with Roles in Enforcement of Floodplain Management Ordinance
Village of Lowville	**March 31, 1987**	**Charles Stevens – Code Enforcement Village Planning Board**	**2?**
Please give a brief description of activities currently undertaken by your municipality to enforce your floodplain management ordinance: **1. Flood plain permits required for all construction in flood plain areas.** **2. Local Zoning Laws – Chapter 112.**			

Next:

2. If your current floodplain management ordinance was adopted before 1996 and has not been subsequently revised, then fill in Row 1 on Pages 2 and 3. *(Please leave Row 1 blank if your ordinance is current as of 1996 or later.)*
3. If your jurisdiction currently does not have a specific person filling the position title of Floodplain Administrator, or if the person filling this position is unaware of their role/responsibilities, then fill in Row 2 on Pages 2 and 3. *(Otherwise please leave Row 2 blank).*
4. If you consider the present level of staffing insufficient to adequately enforce your floodplain management ordinance, then fill in Row 3 on Pages 2 and 3. *(Please leave Row 3 blank if you feel current staffing levels are adequate.)*
5. Please fill in Row 4 on Pages 2 and 3 to evaluate how you plan to update your floodplain management ordinance to be consistent with revised Flood Insurance Rate Maps that may at some point become available in the future for Lewis County. (*Note that FEMA has not included Lewis County as part of its Map Modernization study; thus, no new mapping is anticipated in the near future. However, everyone should still fill in Row 4.)*
6. If floodplain management staff members in your municipality are not Certified Floodplain Managers (CFMs: www.floods.org), then please fill in Row 5 on Pages 2 and 3. *(Please leave Row 5 blank if your floodplain managers are already CFMs.)*
7. If your municipality is not already a participant in FEMA's Community Rating System (CRS: http://www.fema.gov/business/nfip/crs.shtm), please fill in Row 6 on Pages 2 and 3. *(No jurisdictions in Lewis County currently participate in the CRS; everyone should fill in Row 6.)*
8. If you consider there to be additional activities that could be undertaken to enforce your municipality's floodplain management ordinance beyond what your municipality is already doing, please list these actions in the blank Rows 7 and 8 on Pages 2 and 3. *(Otherwise, you can leave Rows 7 and 8 blank.)* * Feel free to attach additional pages if you need more space.

Lewis County Multi-Jurisdictional Hazard Mitigation Planning Project
NFIP COMPLIANCE ACTIONS WORKSHEET

(Name of Jurisdiction) Village of Lowville

PRIORITIZATION

NFIP Compliance Action	"-" = cost (unfavorable)					"0"=neutral or not applicable	"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
1. Update/revise floodplain management ordinances to comply with latest FEMA regulations	0	0	-	+	-	+	-	0	+	-	+	-	High
2. Designate/install a specific person to be your municipalityõs Floodplain Administrator	0	0	0	+	+	+	+	+	0	-	+	-	Medium
3. Add/train sufficient members of staff to adequately enforce NFIP regulations/floodplain management ordinances	0	+	-	0	0	-	+	-	+	-	+	-	High
4. Update/revise floodplain management ordinances to be consistent with potential future new FIRMs	0	+	-	0	0	0	+	-	+	-	+	-	Medium
5. Require staff involved in Floodplain management and ordinance enforcement to become Certified Floodplain Managers (CFMs)	0	+	-	0	0	-	+	-	+	-	+	-	Medium
6. Join the Community Rating System (CRS)	0	0	-	0	0	0	+	-	+	-	+	0	Medium
7.													
8.													

Lewis County Multi-Jurisdictional Hazard Mitigation Planning Project

NFIP COMPLIANCE ACTIONS WORKSHEET

(Name of Jurisdiction)____Village of Lowville___ _____

IMPLEMENTATION STRATEGY

Priority	NFIP Compliance Action	Applies to Community Assets (Existing / New / Both)	Primary Department Responsible	Existing Local Planning Mechanism through which the action will be implemented	Target Date	Cost Estimate	Funding Source
High	1. Update/revise floodplain management ordinances to comply with latest FEMA regulations	Both	Unknown (Police, Zoning or Code Enforcement?)	Planning Board? Zoning Board?	2011	$5000	Unknown
High	2. Designate/install a specific person to be your municipalityôs Floodplain Administrator	Both	Municipality	Village Board? Zoning Board?	2011	$2000	Unknown
High	3. Add/train sufficient members of staff to adequately enforce NFIP regulations/floodplain management ordinances	Both	Municipality	Village Board	2011	$2000	Unknown
Medium	4. Update/revise floodplain management ordinances to be consistent with potential future new FIRMs	Both	Municipality	Village Board	2011	$5000	Unknown
High	5. Require staff involved in Floodplain management and ordinance enforcement to become Certified Floodplain Managers (CFMs)	Both	Municipality	Village Board	2012	$4000	Unknown
Medium	6. Join the Community Rating System (CRS)	Both	Municipality	Village Board	2012	$1000	Unknown
	7.						
	8.						

Lewis County Multi-Jurisdictional Hazard Mitigation Planning Project

NFIP COMPLIANCE ACTIONS WORKSHEET

(Name of Jurisdiction) **Village of Lyons Falls, NY**

First:

1. Please fill in the following table. *(Note: All municipalities in Lewis County currently participate in the National Flood Insurance Program except for the Town of Montague; NFIP participating communities DO have a floodplain management ordinance AND a Floodplain Administrator on their books.)*

Name of Your Jurisdiction	Adoption Date of your Current Floodplain Management Ordinance	Position Title of Your Jurisdiction's Designated Floodplain Administrator	Number of Municipal Staff with Roles in Enforcement of Floodplain Management Ordinance
Village of Lyons Falls, NY	**Unknown**	**Mayor**	**1**
Please give a brief description of activities currently undertaken by your municipality to enforce your floodplain management ordinance:			

***Next*:**

2. If your current floodplain management ordinance was adopted before 1996 and has not been subsequently revised, then fill in Row 1 on Pages 2 and 3. *(Please leave Row 1 blank if your ordinance is current as of 1996 or later.)*
3. If your jurisdiction currently does not have a specific person filling the position title of Floodplain Administrator, or if the person filling this position is unaware of their role/responsibilities, then fill in Row 2 on Pages 2 and 3. *(Otherwise please leave Row 2 blank).*
4. If you consider the present level of staffing insufficient to adequately enforce your floodplain management ordinance, then fill in Row 3 on Pages 2 and 3. *(Please leave Row 3 blank if you feel current staffing levels are adequate.)*
5. Please fill in Row 4 on Pages 2 and 3 to evaluate how you plan to update your floodplain management ordinance to be consistent with revised Flood Insurance Rate Maps that may at some point become available in the future for Lewis County. (*Note that FEMA has not included Lewis County as part of its Map Modernization study; thus, no new mapping is anticipated in the near future. However, everyone should still fill in Row 4.)*
6. If floodplain management staff members in your municipality are not Certified Floodplain Managers (CFMs: www.floods.org), then please fill in Row 5 on Pages 2 and 3. *(Please leave Row 5 blank if your floodplain managers are already CFMs.)*
7. If your municipality is not already a participant in FEMA's Community Rating System (CRS: http://www.fema.gov/business/nfip/crs.shtm), please fill in Row 6 on Pages 2 and 3. *(No jurisdictions in Lewis County currently participate in the CRS; everyone should fill in Row 6.)*
8. If you consider there to be additional activities that could be undertaken to enforce your municipality's floodplain management ordinance beyond what your municipality is already doing, please list these actions in the blank Rows 7 and 8 on Pages 2 and 3. *(Otherwise, you can leave Rows 7 and 8 blank.)* * Feel free to attach additional pages if you need more space.

Lewis County Multi-Jurisdictional Hazard Mitigation Planning Project
NFIP COMPLIANCE ACTIONS WORKSHEET

(Name of Jurisdiction) Village of Lyons Falls, NY

PRIORITIZATION

NFIP Compliance Action	"-" = cost (unfavorable)					"0"=neutral or not applicable	"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
1. Update/revise floodplain management ordinances to comply with latest FEMA regulations	+	+	-	+	-	+	+	+	+	0	+	0	high
2. Designate/install a specific person to be your municipality's Floodplain Administrator	+	0	-	0	0	-	+	-	+	-	+	0	Med
3. Add/train sufficient members of staff to adequately enforce NFIP regulations/floodplain management ordinances	0	+	-	+	0	-	+	0	+	-	+	-	low
4. Update/revise floodplain management ordinances to be consistent with potential future new FIRMs	0	0	+	+	-	+	+	+	+	+	+	0	med
5. Require staff involved in Floodplain management and ordinance enforcement to become Certified Floodplain Managers (CFMs)	+	+	-	-	0	-	+	0	+	0	+	-	low
6. Join the Community Rating System (CRS)	+	0	0	0	0	-	+	+	+	+	+	-	low
7.													
8.													

Lewis County Multi-Jurisdictional Hazard Mitigation Planning Project

NFIP COMPLIANCE ACTIONS WORKSHEET

(Name of Jurisdiction) Village of Lyons Falls, NY

IMPLEMENTATION STRATEGY

Priority	NFIP Compliance Action	Applies to Community Assets (Existing / New / Both)	Primary Department Responsible	Existing Local Planning Mechanism through which the action will be implemented	Target Date	Cost Estimate	Funding Source
high	1. Update/revise floodplain management ordinances to comply with latest FEMA regulations	Both	Village board	Village board	Mar./2012	$200	Village budget
med	2. Designate/install a specific person to be your municipalityõs Floodplain Administrator	Both	Village Board	Village board	Mar/2012	N/A	N/A
low	3. Add/train sufficient members of staff to adequately enforce NFIP regulations/floodplain management ordinances	Both	DPW	Village board	Mar/2012	$100	Village budget
med	4. Update/revise floodplain management ordinances to be consistent with potential future new FIRMs	Both	Village board	Village board	Annual	N/A	N/A
low	5. Require staff involved in Floodplain management and ordinance enforcement to become Certified Floodplain Managers (CFMs)	Both	DPW	Village board	Mar/2012	$400	Village budget
low	6. Join the Community Rating System (CRS)	Both	Village board	Village board	Mar/2012	N/A	Village budget
	7.						
	8.						

Lewis County Multi-Jurisdictional Hazard Mitigation Planning Project
NFIP COMPLIANCE ACTIONS WORKSHEET

(Name of Jurisdiction) Town of Lyonsdale

First:

1. Please fill in the following table. *(Note: All municipalities in Lewis County currently participate in the National Flood Insurance Program except for the Town of Montague; NFIP participating communities DO have a floodplain management ordinance AND a Floodplain Administrator on their books.)*

Name of Your Jurisdiction	Adoption Date of your Current Floodplain Management Ordinance	Position Title of Your Jurisdiction's Designated Floodplain Administrator	Number of Municipal Staff with Roles in Enforcement of Floodplain Management Ordinance
Town of Lyonsdale	Local Law No. 1 1987	~~Highway Superintendent~~ ? Building Inspector	Town Board ? 5

Please give a brief description of activities currently undertaken by your municipality to enforce your floodplain management ordinance:

? Bridges 2
? Culverts - 6
Generators & water pumps
Fire Hydrants & water lines

See Prioitazion & Strategy work sheets

Next:

2. If your current floodplain management ordinance was adopted before 1996 and has not been subsequently revised, then fill in Row 1 on Pages 2 and 3. *(Please leave Row 1 blank if your ordinance is current as of 1996 or later.)*
3. If your jurisdiction currently does not have a specific person filling the position title of Floodplain Administrator, or if the person filling this position is unaware of their role/responsibilities, then fill in Row 2 on Pages 2 and 3. *(Otherwise please leave Row 2 blank).*
4. If you consider the present level of staffing insufficient to adequately enforce your floodplain management ordinance, then fill in Row 3 on Pages 2 and 3. *(Please leave Row 3 blank if you feel current staffing levels are adequate.)*
5. Please fill in Row 4 on Pages 2 and 3 to evaluate how you plan to update your floodplain management ordinance to be consistent with revised Flood Insurance Rate Maps that may at some point become available in the future for Lewis County. (*Note that FEMA has not included Lewis County as part of its Map Modernization study; thus, no new mapping is anticipated in the near future. However, everyone should still fill in Row 4.)*
6. If floodplain management staff members in your municipality are not Certified Floodplain Managers (CFMs: www.floods.org), then please fill in Row 5 on Pages 2 and 3. *(Please leave Row 5 blank if your floodplain managers are already CFMs.)*
7. If your municipality is not already a participant in FEMA's Community Rating System (CRS: http://www.fema.gov/business/nfip/crs.shtm), please fill in Row 6 on Pages 2 and 3. *(No jurisdictions in Lewis County currently participate in the CRS; everyone should fill in Row 6.)*
8. If you consider there to be additional activities that could be undertaken to enforce your municipality's floodplain management ordinance beyond what your municipality is already doing, please list these actions in the blank Rows 7 and 8 on Pages 2 and 3. *(Otherwise, you can leave Rows 7 and 8 blank.)* * Feel free to attach additional pages if you need more space.

Lewis County Multi-Jurisdictional Hazard Mitigation Planning Project
NFIP COMPLIANCE ACTIONS WORKSHEET

(Name of Jurisdiction) Town of Lyonsdale

PRIORITIZATION

NFIP Compliance Action	"-" = cost (unfavorable)						"0"=neutral or not applicable		"+" = benefit (favorable)	(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
1. Update/revise floodplain management ordinances to comply with latest FEMA regulations	+	+	+	+	-	+	-	+	+	+	+	-	+
2. Designate/install a specific person to be your municipality's Floodplain Administrator													
3. Add/train sufficient members of staff to adequately enforce NFIP regulations/floodplain management ordinances													
4. Update/revise floodplain management ordinances to be consistent with potential future new FIRMs	+	+	+	+	-	+	-	+	+	+	High	?	Med - High
5. Require staff involved in Floodplain management and ordinance enforcement to become Certified Floodplain Managers (CFMs)	+	+	+	+	-	+	-	+	+	+	High	?	High - med
6. Join the Community Rating System (CRS)								+	+	+	High	?	High Med
7.													
8.													

Lewis County Multi-Jurisdictional Hazard Mitigation Planning Project
NFIP COMPLIANCE ACTIONS WORKSHEET

(Name of Jurisdiction) Town of Lyonsdale

IMPLEMENTATION STRATEGY

Priority	NFIP Compliance Action	Applies to Community Assets (Existing / New / Both)	Primary Department Responsible	Existing Local Planning Mechanism through which the action will be implemented	Target Date	Cost Estimate	Funding Source
	1. Update/revise floodplain management ordinances to comply with latest FEMA regulations	Both	Town Board	Building Insp Site Plan Review	2010	Low	Town
	2. Designate/install a specific person to be your municipality's Floodplain Administrator						
	3. Add/train sufficient members of staff to adequately enforce NFIP regulations/floodplain management ordinances						
	4. Update/revise floodplain management ordinances to be consistent with potential future new FIRMs	Both	Town Board	Site Plan Review Town Board	2010	Low	Town
	5. Require staff involved in Floodplain management and ordinance enforcement to become Certified Floodplain Managers (CFMs)	Both	Town Board	Buildin Inspector Town Board, Site Plan Rovew	2010	Low	Town
	6. Join the Community Rating System (CRS)		Town Board ?		?	?	
	7.						
	8.						

Lewis County Multi-Jurisdictional Hazard Mitigation Planning Project

NFIP COMPLIANCE ACTIONS WORKSHEET

(Name of Jurisdiction) Town of Martinsburg

First:

1. Please fill in the following table. *(Note: All municipalities in Lewis County currently participate in the National Flood Insurance Program except for the Town of Montague; NFIP participating communities DO have a floodplain management ordinance AND a Floodplain Administrator on their books.)*

Name of Your Jurisdiction	Adoption Date of your Current Floodplain Management Ordinance	Position Title of Your Jurisdiction's Designated Floodplain Administrator	Number of Municipal Staff with Roles in Enforcement of Floodplain Management Ordinance
TOWN OF MARTINSBURG	6/28/74	SUPERVISOR	1.0
Please give a brief description of activities currently undertaken by your municipality to enforce your floodplain management ordinance:			

Next:

Yes 2. If your current floodplain management ordinance was adopted before 1996 and has not been subsequently revised, then fill in Row 1 on Pages 2 and 3. *(Please leave Row 1 blank if your ordinance is current as of 1996 or later.)*

ok 3. If your jurisdiction currently does not have a specific person filling the position title of Floodplain Administrator, or if the person filling this position is unaware of their role/responsibilities, then fill in Row 2 on Pages 2 and 3. *(Otherwise please leave Row 2 blank).*

ok 4. If you consider the present level of staffing insufficient to adequately enforce your floodplain management ordinance, then fill in Row 3 on Pages 2 and 3. *(Please leave Row 3 blank if you feel current staffing levels are adequate.)*

5. Please fill in Row 4 on Pages 2 and 3 to evaluate how you plan to update your floodplain management ordinance to be consistent with revised Flood Insurance Rate Maps that may at some point become available in the future for Lewis County. (*Note that FEMA has not included Lewis County as part of its Map Modernization study; hence no new mapping is anticipated in the near future. However, everyone should still fill in Row 4.)*

6. If floodplain management staff members in your municipality are not Certified Floodplain Managers (CFMs: www.floods.org), then please fill in Row 5 on Pages 2 and 3. *(Please leave Row 5 blank if your floodplain managers are already CFMs.)*

7. If your municipality is not already a participant in FEMA's Community Rating System (CRS: http://www.fema.gov/business/nfip/crs.shtm), please fill in Row 6 on Pages 2 and 3. *(No jurisdictions in Lewis County currently participate in the CRS; everyone should fill in Row 6.)*

8. If you consider there to be additional activities that could be undertaken to enforce your municipality's floodplain management ordinance beyond what your municipality is already doing, please list these actions in the blank Rows 7 and 8 on Pages 2 and 3. *(Otherwise, you can leave Rows 7 and 8 blank.)* * Feel free to attach additional pages if you need more space.

Lewis County Multi-Jurisdictional Hazard Mitigation Planning Project
NFIP COMPLIANCE ACTIONS WORKSHEET

(Name of Jurisdiction) Town of Martinsburg

PRIORITIZATION

NFIP Compliance Action	"-" = cost (unfavorable) "0"=neutral or not applicable "+" = benefit (favorable)										(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
1. Update/revise floodplain management ordinances to comply with latest FEMA regulations	+	+	+	+	+	−	+	YES ONLY IF	YES CFPM	YES NOT NEC.	LOW	LOW	LOW
2. Designate/install a specific person to be your municipality's Floodplain Administrator	0	0	−	+	+	+	+	YES LANDUSE	YES OFFICER	YES	"	"	"
3. Add/train sufficient members of staff to adequately enforce NFIP regulations/floodplain management ordinances	+	+	+	+	+	+	+						
4. Update/revise floodplain management ordinances to be consistent with potential future new FIRMs	+	+	+	+	+	+	+	YES	YES	60 DAYS	MEDIUM	LOW	MEDIUM
5. Require staff involved in Floodplain management and ordinance enforcement to become Certified Floodplain Managers (CFMs)	+	+	+	+	+	+	+	NO	— NO IDEA WHAT IT TAKES	—	LOW	LOW	LOW
6. Join the Community Rating System (CRS)	+	+	+	+	+	+	+	NO	ADVANTAGES ?				
7.													
8.													

Lewis County Multi-Jurisdictional Hazard Mitigation Planning Project

NFIP COMPLIANCE ACTIONS WORKSHEET

(Name of Jurisdiction) Town of Martinsburg

IMPLEMENTATION STRATEGY

Priority	NFIP Compliance Action	Applies to Community Assets (Existing / New / Both)	Primary Department Responsible	Existing Local Planning Mechanism through which the action will be implemented	Target Date	Cost Estimate	Funding Source
	1. Update/revise floodplain management ordinances to comply with latest FEMA regulations	YES	HIGHWAY/ DEPT OF PUB WORKS	PLANNING BOARD	—	0	—
	2. Designate/install a specific person to be your municipality's Floodplain Administrator	YES	LAND USE OFFICER	"	—	0	—
	3. Add/train sufficient members of staff to adequately enforce NFIP regulations/floodplain management ordinances						
	4. Update/revise floodplain management ordinances to be consistent with potential future new FIRMs	YES	PLANNING BOARD	"		0	
	5. Require staff involved in Floodplain management and ordinance enforcement to become Certified Floodplain Managers (CFMs)	NO	—	—		300	
	6. Join the Community Rating System (CRS)	NO	—	—		0	
	7.						
	8.						

Lewis County Multi-Jurisdictional Hazard Mitigation Planning Project
NFIP COMPLIANCE ACTIONS WORKSHEET

(Name of Jurisdiction) Town of Montague

PRIORITIZATION

NFIP Compliance Action	"-" = cost (unfavorable) "0"=neutral or not applicable "+" = benefit (favorable)										(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
1. Initiate the process by which the Town of Montague will become fully participating in the NFIP	0	+	−	0	−	+	0	+	+	+	M	L	L
2. Designate/install a specific person to be your Town's Floodplain Administrator	0	0	0	0	0	0	0	+	+	+	M	L	L
3. Add/train sufficient members of staff to adequately enforce NFIP regulations/floodplain management ordinances	0	0	0	0	0	0	0	+	+	+	M	L	L
4. Require staff involved in Floodplain management and ordinance enforcement to become Certified Floodplain Managers (CFMs)	0	0	0	0	0	0	0	+	+	+	M	L	L
5. Join the Community Rating System (CRS)	0	0	0	0	0	0	0	+	+	+	M	L	L
6.													
7.													

Lewis County Multi-Jurisdictional Hazard Mitigation Planning Project
NFIP COMPLIANCE ACTIONS WORKSHEET

(Name of Jurisdiction) Town of Montague

IMPLEMENTATION STRATEGY

Priority (from Page 2)	NFIP Compliance Action	Applies to Community Assets (Existing / New / Both)	Primary Department Responsible	Existing Local Planning Mechanism through which the action will be implemented	Target Date	Cost Estimate	Funding Source
L	1. Initiate the process by which the Town of Montague will become fully participating in the NFIP	Both	Town Board	Town Board	2015	$1000 ea	Town Budget
L	2. Designate/install a specific person to be your Town's Floodplain Administrator	"	"	"	"	0	"
L	3. Add/train sufficient members of staff to adequately enforce NFIP regulations/floodplain management ordinances	"	"	"	"	$1000	"
L	4. Require staff involved in Floodplain management and ordinance enforcement to become Certified Floodplain Managers (CFMs)	"	"	"	"	$300	"
L	5. Join the Community Rating System (CRS)	"	"	"	"	0	"
	6.						
	7.						

Lewis County Multi-Jurisdictional Hazard Mitigation Planning Project
NFIP COMPLIANCE ACTIONS WORKSHEET

(Name of Jurisdiction) Town of Osceola - Lewis Co.

First:

1. Please fill in the following table. *(Note: All municipalities in Lewis County currently participate in the National Flood Insurance Program except for the Town of Montague; NFIP participating communities DO have a floodplain management ordinance AND a Floodplain Administrator on their books.)*

Name of Your Jurisdiction	Adoption Date of your Current Floodplain Management Ordinance	Position Title of Your Jurisdiction's Designated Floodplain Administrator	Number of Municipal Staff with Roles in Enforcement of Floodplain Management Ordinance
Town of Osceola	July 21 - 1975	Town Code Enforcement Offs.	One

Please give a brief description of activities currently undertaken by your municipality to enforce your floodplain management ordinance:

There has not been any activity in these areas

Next:

2. If your current floodplain management ordinance was adopted before 1996 and has not been subsequently revised, then fill in Row 1 on Pages 2 and 3. *(Please leave Row 1 blank if your ordinance is current as of 1996 or later.)*
3. If your jurisdiction currently does not have a specific person filling the position title of Floodplain Administrator, or if the person filling this position is unaware of their role/responsibilities, then fill in Row 2 on Pages 2 and 3. *(Otherwise please leave Row 2 blank).*
4. If you consider the present level of staffing insufficient to adequately enforce your floodplain management ordinance, then fill in Row 3 on Pages 2 and 3. *(Please leave Row 3 blank if you feel current staffing levels are adequate.)*
5. Please fill in Row 4 on Pages 2 and 3 to evaluate how you plan to update your floodplain management ordinance to be consistent with revised Flood Insurance Rate Maps that may at some point become available in the future for Lewis County. (*Note that FEMA has not included Lewis County as part of its Map Modernization study; thus, no new mapping is anticipated in the near future. However, everyone should still fill in Row 4.)*
6. If floodplain management staff members in your municipality are not Certified Floodplain Managers (CFMs: www.floods.org), then please fill in Row 5 on Pages 2 and 3. *(Please leave Row 5 blank if your floodplain managers are already CFMs.)*
7. If your municipality is not already a participant in FEMA's Community Rating System (CRS: http://www.fema.gov/business/nfip/crs.shtm), please fill in Row 6 on Pages 2 and 3. *(No jurisdictions in Lewis County currently participate in the CRS; everyone should fill in Row 6.)*
8. If you consider there to be additional activities that could be undertaken to enforce your municipality's floodplain management ordinance beyond what your municipality is already doing, please list these actions in the blank Rows 7 and 8 on Pages 2 and 3. *(Otherwise, you can leave Rows 7 and 8 blank.)* * Feel free to attach additional pages if you need more space.

Lewis County Multi-Jurisdictional Hazard Mitigation Planning Project
NFIP COMPLIANCE ACTIONS WORKSHEET

(Name of Jurisdiction) Town of Osceola – Lewis Co.

PRIORITIZATION

NFIP Compliance Action	"-" = cost (unfavorable)						"0"=neutral or not applicable		"+" = benefit (favorable)	(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
1. Update/revise floodplain management ordinances to comply with latest FEMA regulations			X	X		X		~~Yes~~ +	+	+	Low +	Low	Low
2. Designate/install a specific person to be your municipality's Floodplain Administrator													
3. Add/train sufficient members of staff to adequately enforce NFIP regulations/floodplain management ordinances													
4. Update/revise floodplain management ordinances to be consistent with potential future new FIRMs													
5. Require staff involved in Floodplain management and ordinance enforcement to become Certified Floodplain Managers (CFMs)													
6. Join the Community Rating System (CRS)													
7.													
8.													

Lewis County Multi-Jurisdictional Hazard Mitigation Planning Project
NFIP COMPLIANCE ACTIONS WORKSHEET

(Name of Jurisdiction) Town of Osceola – Lewis Co.

IMPLEMENTATION STRATEGY

Priority	NFIP Compliance Action	Applies to Community Assets (Existing / New / Both)	Primary Department Responsible	Existing Local Planning Mechanism through which the action will be implemented	Target Date	Cost Estimate	Funding Source
	1. Update/revise floodplain management ordinances to comply with latest FEMA regulations		Town Board	Twn of Osceola Planning Brd	Jan -2011	$200	Twn
	2. Designate/install a specific person to be your municipality's Floodplain Administrator						
	3. Add/train sufficient members of staff to adequately enforce NFIP regulations/floodplain management ordinances						
	4. Update/revise floodplain management ordinances to be consistent with potential future new FIRMs						
	5. Require staff involved in Floodplain management and ordinance enforcement to become Certified Floodplain Managers (CFMs)						
	6. Join the Community Rating System (CRS)						
	7.						
	8.						

Lewis County Multi-Jurisdictional Hazard Mitigation Planning Project

NFIP COMPLIANCE ACTIONS WORKSHEET

(Name of Jurisdiction) **Town of Pinckney**

First:

1. Please fill in the following table. *(Note: All municipalities in Lewis County currently participate in the National Flood Insurance Program except for the Town of Montague; NFIP participating communities DO have a floodplain management ordinance AND a Floodplain Administrator on their books.)*

Name of Your Jurisdiction	Adoption Date of your Current Floodplain Management Ordinance	Position Title of Your Jurisdiction's Designated Floodplain Administrator	Number of Municipal Staff with Roles in Enforcement of Floodplain Management Ordinance
Town of Pinckney	**Unknown**	**Town Supervisor**	**1**
Please give a brief description of activities currently undertaken by your municipality to enforce your floodplain management ordinance: **No activities are being undertaken at this time, as there are no SFHAs in the town.**			

***Next*:**

2. If your current floodplain management ordinance was adopted before 1996 and has not been subsequently revised, then fill in Row 1 on Pages 2 and 3. *(Please leave Row 1 blank if your ordinance is current as of 1996 or later.)*
3. If your jurisdiction currently does not have a specific person filling the position title of Floodplain Administrator, or if the person filling this position is unaware of their role/responsibilities, then fill in Row 2 on Pages 2 and 3. *(Otherwise please leave Row 2 blank).*
4. If you consider the present level of staffing insufficient to adequately enforce your floodplain management ordinance, then fill in Row 3 on Pages 2 and 3. *(Please leave Row 3 blank if you feel current staffing levels are adequate.)*
5. Please fill in Row 4 on Pages 2 and 3 to evaluate how you plan to update your floodplain management ordinance to be consistent with revised Flood Insurance Rate Maps that may at some point become available in the future for Lewis County. (*Note that FEMA has not included Lewis County as part of its Map Modernization study; thus, no new mapping is anticipated in the near future. However, everyone should still fill in Row 4.)*
6. If floodplain management staff members in your municipality are not Certified Floodplain Managers (CFMs: www.floods.org), then please fill in Row 5 on Pages 2 and 3. *(Please leave Row 5 blank if your floodplain managers are already CFMs.)*
7. If your municipality is not already a participant in FEMA's Community Rating System (CRS: http://www.fema.gov/business/nfip/crs.shtm), please fill in Row 6 on Pages 2 and 3. *(No jurisdictions in Lewis County currently participate in the CRS; everyone should fill in Row 6.)*
8. If you consider there to be additional activities that could be undertaken to enforce your municipality's floodplain management ordinance beyond what your municipality is already doing, please list these actions in the blank Rows 7 and 8 on Pages 2 and 3. *(Otherwise, you can leave Rows 7 and 8 blank.)* * Feel free to attach additional pages if you need more space.

Lewis County Multi-Jurisdictional Hazard Mitigation Planning Project
NFIP COMPLIANCE ACTIONS WORKSHEET

(Name of Jurisdiction) Town of Pinckney

PRIORITIZATION

NFIP Compliance Action	"-" = cost (unfavorable)					"0"=neutral or not applicable	"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
1. Update/revise floodplain management ordinances to comply with latest FEMA regulations	+	+	+	+	-	+	+	+	+	+	High	Low	Low
2. Designate/install a specific person to be your municipality's Floodplain Administrator													
3. Add/train sufficient members of staff to adequately enforce NFIP regulations/floodplain management ordinances													
4. Update/revise floodplain management ordinances to be consistent with potential future new FIRMs													
5. Require staff involved in Floodplain management and ordinance enforcement to become Certified Floodplain Managers (CFMs)	0	+	0	+	0	0	+	+	+	+	Med	Low	Low
6. Join the Community Rating System (CRS)	+	+	+	+	+	+	+	+	+	+	Med	Low	Low
7. Locate existing flood damage prevention law and review.	0	+	+	0	0	0	0	+	+	+	High	Low	Med
8.													

Lewis County Multi-Jurisdictional Hazard Mitigation Planning Project
NFIP COMPLIANCE ACTIONS WORKSHEET

(Name of Jurisdiction) Town of Pinckney

IMPLEMENTATION STRATEGY

Priority	NFIP Compliance Action	Applies to Community Assets (Existing / New / Both)	Primary Department Responsible	Existing Local Planning Mechanism through which the action will be implemented	Target Date	Cost Estimate	Funding Source
Low	1. Update/revise floodplain management ordinances to comply with latest FEMA regulations	Both	Town Board	Town Board	2011	$1,000	Local Budget/ Staff
	2. Designate/install a specific person to be your municipalityôs Floodplain Administrator						
	3. Add/train sufficient members of staff to adequately enforce NFIP regulations/floodplain management ordinances						
	4. Update/revise floodplain management ordinances to be consistent with potential future new FIRMs						
Low	5. Require staff involved in Floodplain management and ordinance enforcement to become Certified Floodplain Managers (CFMs)	Both	Town Board	Town Board	2011	$500	Local Budget/ Staff
Low	6. Join the Community Rating System (CRS)	Both	Town Board	Town Board	2011	$500	Local Budget/ Staff
Med	7. . Locate existing flood damage prevention law and review.	Both	Town Board	Town Board	2011	N/A	Local Budget/ Staff

Lewis County Multi-Jurisdictional Hazard Mitigation Planning Project
NFIP COMPLIANCE ACTIONS WORKSHEET

(Name of Jurisdiction) Village Of Port Leyden

First:

1. Please fill in the following table. *(Note: All municipalities in Lewis County currently participate in the National Flood Insurance Program except for the Town of Montague; NFIP participating communities DO have a floodplain management ordinance AND a Floodplain Administrator on their books.)*

Name of Your Jurisdiction	Adoption Date of your Current Floodplain Management Ordinance	Position Title of Your Jurisdiction's Designated Floodplain Administrator	Number of Municipal Staff with Roles in Enforcement of Floodplain Management Ordinance
Village Of Port Leyden	Initial Identification - 7/11/1975 "FIRM" - 6/19/1985	Village Mayor - Current Note: Training for Floodplain Administrator Required for all County Wide Jurisdiction(s).	Four (4) - Mayor, Streets Superintendent, Fire Chief, Ambulance Captain.

Please give a brief description of activities currently undertaken by your municipality to enforce your floodplain management ordinance:
No "FMO" Currently In Place.

Next:

2. If your current floodplain management ordinance was adopted before 1996 and has not been subsequently revised, then fill in Row 1 on Pages 2 and 3. *(Please leave Row 1 blank if your ordinance is current as of 1996 or later.)*
3. If your jurisdiction currently does not have a specific person filling the position title of Floodplain Administrator, or if the person filling this position is unaware of their role/responsibilities, then fill in Row 2 on Pages 2 and 3. *(Otherwise please leave Row 2 blank).*
4. If you consider the present level of staffing insufficient to adequately enforce your floodplain management ordinance, then fill in Row 3 on Pages 2 and 3. *(Please leave Row 3 blank if you feel current staffing levels are adequate.)*
5. Please fill in Row 4 on Pages 2 and 3 to evaluate how you plan to update your floodplain management ordinance to be consistent with revised Flood Insurance Rate Maps that may at some point become available in the future for Lewis County. *(Note that FEMA has not included Lewis County as part of its Map Modernization study; hence no new mapping is anticipated in the near future. However, everyone should still fill in Row 4.)*
6. If floodplain management staff members in your municipality are not Certified Floodplain Managers (CFMs: www.floods.org), then please fill in Row 5 on Pages 2 and 3. *(Please leave Row 5 blank if your floodplain managers are already CFMs.)*
7. If your municipality is not already a participant in FEMA's Community Rating System (CRS: http://www.fema.gov/business/nfip/crs.shtm), please fill in Row 6 on Pages 2 and 3. *(No jurisdictions in Lewis County currently participate in the CRS; everyone should fill in Row 6.)*
8. If you consider there to be additional activities that could be undertaken to enforce your municipality's floodplain management ordinance beyond what your municipality is already doing, please list these actions in the blank Rows 7 and 8 on Pages 2 and 3. *(Otherwise, you can leave Rows 7 and 8 blank.)* * Feel free to attach additional pages if you need more space.

Lewis County Multi-Jurisdictional Hazard Mitigation Planning Project
NFIP COMPLIANCE ACTIONS WORKSHEET

(Name of Jurisdiction) Village Of Port Leyden

PRIORITIZATION

NFIP Compliance Action	"-" = cost (unfavorable) "0"=neutral or not applicable "+" = benefit (favorable)										(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
1. Update/revise floodplain management ordinances to comply with latest FEMA regulations	+	+	+	0	0	+	0	+	+	−	High	Low	High
2. Designate/install a specific person to be your municipality's Floodplain Administrator	−	+	+	0	−	0	+	+	+	−	Medium	Medium	Medium
3. Add/train sufficient members of staff to adequately enforce NFIP regulations/floodplain management ordinances	−	+	+	0	0	0	+	+	+	−	Medium	Medium	Low/Medium
4. Update/revise floodplain management ordinances to be consistent with potential future new FIRMs	+	+	+	0	0	+	+	+	+	−	Medium	Medium	Low
5. Require staff involved in Floodplain management and ordinance enforcement to become Certified Floodplain Managers (CFMs)	−	+	+	0	0	0	+	+	+	−	Medium	Medium	Low
6. Join the Community Rating System (CRS)	+	+	+	0	0	+	+	+	+	−	Medium	Medium	Low/Medium
7.													
8.													

Lewis County Multi-Jurisdictional Hazard Mitigation Planning Project
NFIP COMPLIANCE ACTIONS WORKSHEET

(Name of Jurisdiction) VILLAGE OF PORT LEYDEN

IMPLEMENTATION STRATEGY

Priority	NFIP Compliance Action	Applies to Community Assets (Existing / New / Both)	Primary Department Responsible	Existing Local Planning Mechanism through which the action will be implemented	Target Date	Cost Estimate	Funding Source
	1. Update/revise floodplain management ordinances to comply with latest FEMA regulations	YES	VILLAGE BOARD STREETS SUPERINTENDENT	VILLAGE ORDINANCE	ASSOCIATED TO "HMP"	NOMINAL	VILLAGE BUDGET
	2. Designate/install a specific person to be your municipality's Floodplain Administrator	YES	VILLAGE BOARD STREETS SUPERINTENDENT	VILLAGE BUDGET	ASSOCIATED TO "HMP"	UNKNOWN	VILLAGE BUDGET AND/OR GRANT / MATCHING FUNDS
	3. Add/train sufficient members of staff to adequately enforce NFIP regulations/floodplain management ordinances	YES	STREETS SUPERINTENDENT	VILLAGE BUDGET	ASSOCIATED TO "HMP"	UNKNOWN	VILLAGE BUDGET
	4. Update/revise floodplain management ordinances to be consistent with potential future new FIRMs	YES	VILLAGE BOARD	VILLAGE BUDGET	ASSOCIATED TO "HMP"	UNKNOWN	VILLAGE BUDGET
	5. Require staff involved in Floodplain management and ordinance enforcement to become Certified Floodplain Managers (CFMs)	YES	STREETS SUPERINTENDENT	VILLAGE ORDINANCE	ASSOCIATED TO "HMP"	UNKNOWN	VILLAGE BUDGET
	6. Join the Community Rating System (CRS)	YES	VILLAGE BOARD	VILLAGE ORDINANCE	ASSOCIATED TO "HMP"	UNKNOWN	VILLAGE BUDGET
	7.						
	8.						

Lewis County Multi-Jurisdictional Hazard Mitigation Planning Project
NFIP COMPLIANCE ACTIONS WORKSHEET

(Name of Jurisdiction) TOWN OF WEST TURIN

First:

1. Please fill in the following table. *(Note: All municipalities in Lewis County currently participate in the National Flood Insurance Program except for the Town of Montague; NFIP participating communities DO have a floodplain management ordinance AND a Floodplain Administrator on their books.)*

Name of Your Jurisdiction	Adoption Date of your Current Floodplain Management Ordinance	Position Title of Your Jurisdiction's Designated Floodplain Administrator	Number of Municipal Staff with Roles in Enforcement of Floodplain Management Ordinance
TOWN OF WEST TURIN	9-13-1974	CODES ENFORCEMENT	NONE

Please give a brief description of activities currently undertaken by your municipality to enforce your floodplain management ordinance:

LEWIS COUNTY CODES ENFORCEMENT UNIT HANDLES ALL OF WEST TURIN'S FLOOD PLAIN'S ORDINANCE'S

Next:

2. If your current floodplain management ordinance was adopted before 1996 and has not been subsequently revised, then fill in Row 1 on Pages 2 and 3. *(Please leave Row 1 blank if your ordinance is current as of 1996 or later.)*
3. If your jurisdiction currently does not have a specific person filling the position title of Floodplain Administrator, or if the person filling this position is unaware of their role/responsibilities, then fill in Row 2 on Pages 2 and 3. *(Otherwise please leave Row 2 blank).*
4. If you consider the present level of staffing insufficient to adequately enforce your floodplain management ordinance, then fill in Row 3 on Pages 2 and 3. *(Please leave Row 3 blank if you feel current staffing levels are adequate.)*
5. Please fill in Row 4 on Pages 2 and 3 to evaluate how you plan to update your floodplain management ordinance to be consistent with revised Flood Insurance Rate Maps that may at some point become available in the future for Lewis County. (*Note that FEMA has not included Lewis County as part of its Map Modernization study; thus, no new mapping is anticipated in the near future. However, everyone should still fill in Row 4.)*
6. If floodplain management staff members in your municipality are not Certified Floodplain Managers (CFMs: www.floods.org), then please fill in Row 5 on Pages 2 and 3. *(Please leave Row 5 blank if your floodplain managers are already CFMs.)*
7. If your municipality is not already a participant in FEMA's Community Rating System (CRS: http://www.fema.gov/business/nfip/crs.shtm), please fill in Row 6 on Pages 2 and 3. *(No jurisdictions in Lewis County currently participate in the CRS; everyone should fill in Row 6.)*
8. If you consider there to be additional activities that could be undertaken to enforce your municipality's floodplain management ordinance beyond what your municipality is already doing, please list these actions in the blank Rows 7 and 8 on Pages 2 and 3. *(Otherwise, you can leave Rows 7 and 8 blank.)* * Feel free to attach additional pages if you need more space.

Lewis County Multi-Jurisdictional Hazard Mitigation Planning Project
NFIP COMPLIANCE ACTIONS WORKSHEET

(Name of Jurisdiction) Town of West Turin

PRIORITIZATION

NFIP Compliance Action	"-" = cost (unfavorable)						"0"=neutral or not applicable		"+" = benefit (favorable)	(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
1. Update/revise floodplain management ordinances to comply with latest FEMA regulations	+	+	0	+	+	+	+	+	+	+	High	Low	Low
2. Designate/install a specific person to be your municipality's Floodplain Administrator													
3. Add/train sufficient members of staff to adequately enforce NFIP regulations/floodplain management ordinances													
4. Update/revise floodplain management ordinances to be consistent with potential future new FIRMs	+	-	0	+	+	-	+	+	+	+	High	Mod.	Low
5. Require staff involved in Floodplain management and ordinance enforcement to become Certified Floodplain Managers (CFMs)													
6. Join the Community Rating System (CRS)	+	+	+	+	+	+	+	+	+	+	High	Mod	Low
7.													
8.													

Lewis County Multi-Jurisdictional Hazard Mitigation Planning Project
NFIP COMPLIANCE ACTIONS WORKSHEET

(Name of Jurisdiction) TOWN OF WEST TURIN

IMPLEMENTATION STRATEGY

Priority	NFIP Compliance Action	Applies to Community Assets (Existing / New / Both)	Primary Department Responsible	Existing Local Planning Mechanism through which the action will be implemented	Target Date	Cost Estimate	Funding Source
	1. Update/revise floodplain management ordinances to comply with latest FEMA regulations	BOTH	CODES ENFORCEMENT LEWIS COUNTY	LEWIS COUNTY ENFORCEMENT OFFICER	LATE FALL	$2,000.00	HMGP
	2. Designate/install a specific person to be your municipality's Floodplain Administrator						
	3. Add/train sufficient members of staff to adequately enforce NFIP regulations/floodplain management ordinances						
	4. Update/revise floodplain management ordinances to be consistent with potential future new FIRMs	BOTH	CODES ENFORCEMENT LEWIS COUNTY	LEWIS COUNTY ENFORCEMENT OFFICER	LATE FALL	$3,000.00	HMGP
	5. Require staff involved in Floodplain management and ordinance enforcement to become Certified Floodplain Managers (CFMs)						
	6. Join the Community Rating System (CRS)	NEW	CODES ENFORCEMENT LEWIS COUNTY	LEWIS COUNTY ENFORCEMENT OFFICER	LATE FALL	$4,000.00	HMGP
	7.						
	8.						

Hazard Mitigation Plan – NFIP Requirements

As of October 1, 2008, Flood Mitigation Assistance (FMA) Plan requirements were added to 44 CFR §201.6, which applies to Local Hazard Mitigation Plans (LHMPs.) These changes result in new requirements for NFIP-related information to be included in LHMPs and create a single planning requirement that applies to FMA, as well as HMGP and PDM, grant eligibility. This document explains the new requirements and provides suggestions to assist communities in meeting them.

1. Assessing Vulnerability: Addressing Repetitive Loss Properties

Requirement §201.6(c)(2)(ii): *[The risk assessment] must also address National Flood Insurance Program (NFIP) insured structures that have been repetitively damaged by floods.*

As part of the Risk Assessment, LHMPs must discuss repetitive loss and severe repetitive loss properties as defined by the National Flood Insurance Program (NFIP).

A Repetitive Loss Property is defined in the Flood Insurance Manual as ñan NFIP insured structure that has had at least two paid flood losses of more than $1,000 each in any 10-year period since 1978.ò

Severe Repetitive Loss Properties are defined in 44 CFR §79.2(g) as follows:

> Severe Repetitive Loss Properties are defined as single or multifamily residential properties that are covered under an NFIP flood insurance policy and:
>
> (1) That have incurred flood-related damage for which 4 or more separate claims payments have been made, with the amount of each claim (including building and contents payments) exceeding $5,000, and with the cumulative amount of such claims payments exceeding $20,000; or
>
> (2) For which at least 2 separate claims payments (building payments only) have been made under such coverage, with cumulative amount of such claims exceeding the market value of the building.
>
> (3) In both instances, at least 2 of the claims must be within 10 years of each other, and claims made within 10 days of each other will be counted as 1 claim.

The plan should include the following information about repetitive loss and severe repetitive loss properties:

- Number of properties in the community.
- Number, dates, and amounts of claims paid.
- Maps showing areas of repetitive loss concentration.

- If and how these properties will be mitigated or addressed in the future.

Use of flood insurance claim information is subject to The Privacy Act of 1974, as amended, which prohibits public release of the names of policy holders and the amount of the claim payment or assistance. Do not identify specific parcel, address, or ownership information; however, summary information and maps can be made public.

The best resources for repetitive loss information are the State NFIP Coordinator and FEMA Insurance Specialist.

2. Identification and Analysis of Mitigation Actions: National Flood Insurance Program (NFIP) Compliance

Requirement: §201.6(c)(3)(ii): *[The mitigation strategy] must also address the jurisdiction's participation in the National Flood Insurance Program (NFIP), and continued compliance with NFIP requirements, as appropriate.*

LHMPôs Mitigation Strategy must describe the communityôs participation in the NFIP and include actions that address continued compliance with the NFIP. There is a variety of information that addresses NFIP participation; similarly, there are many ways to address continued compliance with the NFIP.

National Flood Insurance Program Participation

This section provides an overview of information to consider for inclusion in the LHMP regarding NFIP participation.

Topic	Considerations	Where to find information
Insurance Summary	• How many NFIP policies are in the community? What is the total premium and coverage?	• State NFIP Coordinator or FEMA NFIP Specialist
	• How many claims have been paid in the community? What is the total amount of paid claims? How many of the claims were for substantial damage?	• FEMA NFIP or Insurance Specialist
	• Number of structures exposed to flood risk within the community	• Community Floodplain Administrator (FPA)
	• Describe any areas of flood risk with limited NFIP policy coverage	• Community FPA & FEMA Insurance Specialist

Staff resources	• Does the community have a dedicated Floodplain Manager or NFIP Coordinator? • Is floodplain management an auxiliary duty? • Is there a Certified Floodplain Manager on staff? • Provide an explanation of NFIP administration services (e.g., permit review, GIS, education or outreach, inspections, engineering capability) • What are the barriers to running an effective NFIP program in the community, if any?	• Community FPA • Community FPA • Community FPA • Community FPA • Community FPA
Topic	**Considerations**	**Where to find information**
Compliance history	• Is the community in good standing with the NFIP? • Are there any outstanding compliance issues (i.e., current violations)? • When was the most recent Community Assistance Visit (CAV) or Community Assistance Contact (CAC)? • Is a CAV or CAC scheduled or needed?	• State NFIP Coordinator, FEMA NFIP Specialist, community records
Regulation	• When did the community enter the NFIP? • What did the communityôs Flood Insurance Rate Maps (FIRMs) become effective? • Are the FIRMs digital or paper? • Does the Floodplain Ordinance meet or exceed FEMA or State minimum requirements? If so, in what ways? • Provide an explanation of the permitting process and include a copy of floodplain permit	• Community Status Book http://www.fema.gov/fema/csb.shtm • Community FPA, State or FEMA NFIP Specialists • Community FPA • Community FPA
Community Rating System (CRS)	• Does the community participate in CRS? • What is the communityôs CRS Class Ranking? • What categories and activities provide CRS points and how can the class be improved? • Does the plan include CRS planning requirements	• Community FPA, State, FEMA NFIP • Flood Insurance Manual http://www.fema.gov/business/nfip/manual.shtm • Community FPA, FEMA CRS Coordinator, ISO representative • CRS manual http://www.fema.gov/library/viewRecord.do?id=2434

NFIP Continued Compliance Actions

The requirement to include actions related to continued compliance with the NFIP in the LHMPôs Mitigation Strategy is not met by discussing ways to reduce flood risk. The Mitigation Strategy must include actions that address the administration of the NFIP in the community. This section outlines topics to consider when developing NFIP compliance related actions.

Topic	Considerations
Staff resources	Identify need for additional staff Identify training needs of existing staff
Compliance	When is the next Community Assistance Visit anticipated? If unknown, discuss any need for CAV, CAC, or other compliance assistance.
Regulation	Are there potential ordinance changes to consider to strengthen requirements? Are there potential improvements to permitting process or other administrative aspects of the communityôs NFIP program? Could the community enhance its floodplain services?
Flood Risk Maps	Are there flood prone areas that need new flood studies? What areas are highest priority and why? Does the community have new data that can be included in future flood map updates?
Community Outreach	Consider outreach and education to provide in the community. Outreach can be targeted to increase NFIP policies, promote NFIP services, or increase knowledge of local flood risk, among other topics. Consider a variety of audiences, such as elected officials or builders.
Community Rating System (CRS)	Does the community want to participate in the CRS program? Does the community want to improve its current CRS class ranking? Identify activities the community is or will be pursuing to gain CRS points.

APPENDIX E –

MITIGATION STRATEGY GUIDANCE

Hello.

We're nearing the end of the mitigation planning process, with only one more step before the Draft Plan will be ready for distribution!

What is that last step? Identifying, evaluating and prioritizing mitigation actions – at the upcoming Mitigation Strategy Working Session on March 2nd, 2010. It would be very helpful if you came to this meeting with a list of mitigation actions that your municipality would like to pursue. This could be a long list, or a short one. The length really is not the issue. What's most important is that it contains what you feel is a manageable number of projects for your particular municipality to tackle, given your community's unique level of available resources/funding/staffing. Some actions may be things that you know your municipality can do with local funds. Other actions might be large projects that you will be seeking grant funding for. If you're having trouble coming up with some projects, you may consider talking to your local DPW or emergency management folks – they're often a great resource because they are typically the first to hit the street after a big hazard event, and thus many of them can give you a list of common problem areas and possible solutions right off the top of their head.

While the stated FEMA requirement is that each participating jurisdiction should identify more than one action item, FEMA reviewers who approve the final plan will want to see that a wide range of the hazards profiled as applicable to the County are addressed in the plan to some extent. It will greatly ease the plan's progress through the review process if between the County and the participating jurisdictions you can put forward actions to address as many different hazards as possible.

A couple of key points to remember when selecting potential mitigation actions: (1) All the actions/projects you put forward must be primarily intended to reduce the risk of damages from the future occurrence of natural hazard events. Actions or projects which are intended to improve emergency response (such as the purchase of a new fire truck) or general infrastructure investment (such as providing additional water supplies for new development) will not normally be considered eligible for FEMA mitigation grant funding. (2) Please try to provide specific locations for action items that involve actual construction or physical work, such as building retrofits, culvert replacements, and so on.

Remember: earning the eligibility to apply for mitigation project funds this is <u>the</u> reason why you all decided to prepare this plan in the first place - so make the most of it!

At the Working Session, we will be walking everyone through a series of worksheets regarding action item evaluation/prioritization and implementation strategy development. This is a FEMA requirement, and we have tried to make this as easy as possible. It looks like a lot, but really isn't too bad, and we have selected one of the simpler methodologies suggested in the FEMA guidance. We have attached the worksheets for your review in advance. The first worksheet for completion is entitled "<u>Prioritization of Actions</u>": Completion of this worksheet will result in a priority being

assigned to each of your jurisdictions actions: some instructions and guidance are included on the first page of this form, and we have attached some guidance from FEMA sources which provide some more detail about the STAPLEE evaluation criteria and how they are interpreted. This priority must then be transferred along with your jurisdictions actions to the worksheet entitled "Implementation Strategy". The third worksheet, entitled "NFIP Compliance" is to completed separately from the first two, but this worksheet combines prioritization and implementation into one worksheet – but only for actions intended to enhance or improve your community's compliance with the National Flood Insurance Program.

Before completing the worksheets, you should already have considered the information presented in the Risk Assessment Interim Deliverable (RAID) which describes the risks and vulnerabilities to which Lewis County is exposed, and which was made available on the County website on January 12th, 2010. If you haven't had a chance to read through it yet, we would highly recommend that you may wish to do so before the Working Session, especially Chapter 6, containing information on types of hazard mitigation actions, and the following sections; the mitigation action items "Tip Sheet", and the FEMA reference material.

While we will be happy to collect completed forms at the close of the meeting, the final deadline for completed worksheets is March 18th, 2010.

Feel free to contact our consultant for guidance and advice, using the contact details below.
We hope to see you at the Mitigation Strategy meeting on March 2nd.

URS Consultant to Lewis County for the Hazard Mitigation Plan
Richard Franks:
richard_franks@urscorp.com
Tel: 973-785-0700 ext. 449
Fax: 973-812-0985

Clarification of STAPLEE Criteria

Extracted from FEMA 386-3: ñDeveloping the Mitigation Plan: Identifying Mitigation Actions and Implementation Strategiesò

The full document can be found online at:

http://www.fema.gov/library/viewRecord.do?id=1886

Evaluation Category	Considerations	Sources of Information
Social	Community Acceptance	■ Questionnaire (see Appendix E) ■ Interviews with government staff, non-profit organizations, and neighborhood advocacy organizations ■ Community plans ■ Newspaper articles
	Adversely Affects Segment of Population	■ Maps showing demographics (race, age, income, voting districts, etc.) with locations of proposed mitigation actions
Technical	Technical Feasibility	■ Judgment of mitigation experts, scientists, and engineers ■ Existing literature/studies on the action
	Long-term Solution	■ Judgment of mitigation experts ■ Existing literature/studies on the action
	Secondary Impacts	■ Judgment of mitigation experts ■ Existing literature ■ Maps showing environmentally sensitive resources with locations of proposed mitigation actions ■ Scientific and/or engineering evaluations
Administrative	Staffing (sufficient number of staff and training)	■ Capability assessment (see Worksheets #2 and #3) ■ Jurisdiction organizational chart ■ Availability of technical assistance from regional or state agencies ■ Interviews with department heads and relevant staff
	Funding Allocated	■ Capability assessment (see Worksheets #2 and #3) ■ Annual operating budget ■ Capital improvement budget ■ Interviews with department heads and relevant staff
	Maintenance/Operations	■ Capability assessment (see Worksheets #2 and #3) ■ Existing literature on maintenance costs ■ Interviews with department heads and relevant staff
Political	Political Support	■ Questionnaire (see Appendix E) ■ Interviews with elected officials ■ Newspaper articles
	Local Champion or Plan Proponent (respected community member)	■ Questionnaire (see Appendix E) ■ Interviews with elected officials, community leaders, and private sector participants in planning process
	Public Support (Stakeholders)	■ Questionnaire (see Appendix E) ■ Interviews with government staff, non-profit organizations, and neighborhood advocacy organizations ■ Newspaper articles ■ Public meetings

Evaluation Category	Considerations	Sources of Information
Legal	State Authority	■ Research of state codes ■ Contact with state attorney general's office
	Existing Local Authority	■ Research of local codes and ordinances ■ Local legal counsel
	Action Potentially Subject to Legal Challenge by Opponents (stakeholders who would be negatively affected)	■ Research by local legal counsel ■ Maps, census, plans
Economic	Benefit of Mitigation Action	■ Benefit-cost analysis software/methodology ■ Judgment of experts ■ Existing literature ■ Case studies of similar implemented actions ■ Economic impact assessment
	Cost of Mitigation Action	■ Order of magnitude cost estimate (e.g., Action A costs five times more than Action B) ■ Judgment of experts ■ Local contractors ■ Case studies
	Contributes to Economic Goals	■ Judgment of experts ■ Evaluation of community's comprehensive plan, economic development plan, and other community plans and policies
	Outside Funding Required	■ Order of magnitude cost estimate ■ Evaluation of state and federal funding programs
Environmental	Affects Land/Water Bodies	■ Maps, studies, plans ■ Coordination with state and federal resource agencies, including compliance with all relevant statutes and regulations
	Affects Endangered Species	■ Maps, studies, plans ■ Coordination with state and federal resource agencies, including compliance with all relevant statutes and regulations
	Affects Hazardous Materials and Waste Sites	■ Maps, studies, plans ■ Hazardous waste site databases ■ Coordination with state and federal resource agencies, including compliance with all relevant statutes and regulations
	Consistent with Community's Environmental Goals	■ Maps of land use, zoning, sensitive areas, projected growth ■ Interviews with government staff ■ Review of local plans and policies
	Consistent with Federal Laws	■ Contact with federal agencies

Lewis County Multi-Jurisdictional Hazard Mitigation Plan

Action Items "Tip Sheet"

- **Each participating jurisdiction must identify several hazard mitigation actions, and endeavor to address multiple profiled hazards,** otherwise FEMA will not recognize your municipality's participation.

- **Don't pick action items arbitrarily! Information in the Risk Assessment Interim Deliverable (R.A.I.D) explains in great detail your risks, and arms you with the information that you will need to make sound decisions regarding action items for your municipality. Don't begin evaluating action items until you have perused the R.A.I.D. And be sure to select mitigation actions that will address the hazard(s) posing the greatest risk in your municipality. There is also an entire chapter in the R.A.I.D. dedicated to outlining types of potential mitigation actions for all the profiled hazards.**

- **Public awareness activities can be one of your actions, but they cannot be the only action you identify.** Also, be aware that FEMA mitigation project funding streams are not viable sources of outside funding for this type of activity.

- **In general, FEMA mitigation project funds are intended to be used to facilitate projects that will reduce or eliminate the losses from future disasters**. Projects must provide a long-term solution to a problem. In addition, a project's potential savings must be more than the cost of implementing the project.

- **Responding better is not the same as mitigating.** For example, buying additional motorboats to evacuate flooded residents is not flood *mitigation*; it is flood *response*. You want to select actions that truly reduce or eliminate impacts/damages in their own right, and reduce the likelihood of a future need to respond at all. For example, elevating or acquiring flood prone buildings. Response activities can be one of your actions, but they cannot be the only action you identify. And FEMA mitigation project grants are not the place to seek outside funding.

- **Sometimes a municipality may identify a good project at a location for which the municipal government has no jurisdiction (i.e., a privately-owned business or residential structure).** FEMA allows your municipality to apply on behalf of certain property owners. Your actions would be to:
  - Meet with the facility owner to advise them of the problem.
  - Support the facility owner to identify feasible alternatives to mitigate the problem (this may require a consultant/engineer to conduct a detailed evaluation of the site and specific construction details of the facility).
  - If requested by the facility owner, apply on the owner's behalf for federal mitigation project funding for the most cost-effective mitigation alternative (albeit through local operating budgets, or if needed through funding streams at the state or federal levels).

- **Under some FEMA grant funding streams, studies are eligible components of a larger mitigation project (where completion of the project is guaranteed regardless of study findings), but studies alone are not fundable mitigation projects.** Conducting a study may be one of your actions, but FEMA mitigation project funding streams are not viable sources of outside funding for this type of activity.

- **Large scale structural projects such as levees and floodwalls are typically not eligible under FEMA mitigation project funding streams unless there is a critical facility within the protected area.**

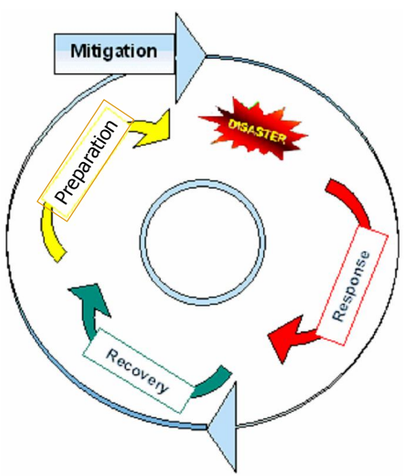
- **Your municipality can say that it will move forward with a project contingent upon local and/or grant funding being secured.**

- **If large scale or other mitigation measures are being considered in your area for implementation by another agency (such as the Army Corps of Engineers), bear in mind that the full completion of such projects is never guaranteed and often can take many years.** Projects and studies are often contingent upon: receiving funding in annual budget appropriations; receiving concurrence of study findings at various points in the process from stakeholders; the ability to purchase any lands needed for the project; and the local community's ability to fund any matches required for the various parts of the project. In such cases, a jurisdiction must consider whether or not it can accept the risk of damage if such projects do not come to fruition, or during the interim period before they are completed.

- One of the benefits of having a FEMA-approved hazard mitigation plan is that your jurisdiction will be eligible to apply to FEMA for hazard mitigation project funding. Thus, **while a jurisdiction could select virtually any mitigation action, it would seem to be in your best interest to incorporate at least one or more actions that are eligible types of projects under the FEMA funding streams for which your plan will make you eligible to apply for (PDM, HMGP, FMA, RFC, and SRL).**

- Additional information on FEMA's **HMGP** can be found in the HMGP Desk Reference at:
- www.fema.gov/library/viewRecord.do?id=1472

- Additional information on FEMA's **PDM, FMA, RFC and SRL** programs can be found in the Unified HMA Program Guidance at:
- www.fema.gov/library/viewRecord.do?id=3309



- **Examples of types of projects that are generally eligible under FEMA funding streams (such as PDM, HMGP, FMA, RFC, SRL) include but are not limited to:**

  - Acquisition of real property for willing sellers and demolition or relocation of buildings to convert the property to open space use
  - Elevation of flood prone structures
  - Mitigation reconstruction
  - Retrofitting structures and facilities to minimize damages from high winds, earthquake, flood, wildfire, or other natural hazards
  - Development and initial implementation of vegetative management programs
  - Minor flood control projects that do not duplicate the flood prevention activities of other Federal agencies
  - Localized flood control projects, such as certain ring levees and floodwall systems, that are designed specifically to protect critical facilities
  - Post-disaster building code related activities that support building code officials during the reconstruction process
  - Localized minor flood reduction projects
  - Dry floodproofing of residential property
  - Dry floodproofing of nonresidential structures
  - Stormwater management
  - Infrastructure protection measures
  - Vegetative management / soil stabilization
  - Safe room construction

- **Examples of other types of activities related to mitigation from FEMA's Mitigation Planning How-To Guide #3 include:**

  - Building codes
  - Density controls
  - Design review standards
  - Easements
  - Environmental review standards
  - Floodplain development regulations/zoning
  - Forest fire fuel reduction
  - Hillside development regulations
  - Open space preservation
  - Performance standards
  - Setback regulations
  - Special land use permits
  - Stormwater management regulations
  - Subdivision and development regulations
  - Transfer of development rights
  - Acquisition of hazard prone structures
  - Construction of barriers around structures
  - Elevation of structures
  - Relocation out of hazard areas
  - Structural retrofits (reinforcement/bracing, shutters, etc.)
  - Hazard information centers
  - Real estate disclosure
  - Dune and beach restoration
  - Forest and vegetation management
  - Sediment and erosion control regulations
  - Stream corridor restoration
  - Stream dumping regulations
  - Urban forestry and landscape management
  - Wetlands development regulations
  - Critical facilities protection
  - Emergency response services
  - Hazard threat recognition
  - Hazard warning systems
  - Health and safety maintenance
  - Post-disaster mitigation
  - Channel maintenance
  - Dams and reservoirs
  - Levees and floodwalls
  - Safe rooms and shelter
  - Seawalls and bulkheads

Additional information including descriptions of these actions can be found at:
http://www.fema.gov/library/viewRecord.do?id=1886

LEWIS COUNTY
MULTI-JURISDICTIONAL
HAZARD MITIGATION PLANNING PROJECT

WHAT IS THE ROLE OF A LOCAL JURISDICTION IN MITIGATION??

In developing your list of mitigation projects, you may think of some projects that will be undertaken at sites or facilities owned by your municipality. For example, maybe you would like to upgrade a stormwater drainage system, raise a locally-owned roadway, or relocate the local police station out of the floodplain. But what happens if you see a need for a mitigation project at a site or facility for which your municipality has no authority? For example, what if there is a privately-owned nursing home in the mapped floodplain in your community, and you think there would be a great benefit to building a floodwall to protect this facility? Or how about residential structures that you think should be elevated or subject to retrofit floodproofing measures? Here are some points which we hope will clarify the role of a local jurisdiction under these two circumstances.

If your municipality DOES NOT own the site/facility in need of mitigation….	**If your municipality DOES own the site/facility in need of mitigation….**
1. Meet with the facility owner to advise them of the problem.	1. Identify feasible alternatives to mitigate the problem (this may require a consultant/engineer to conduct a detailed evaluation of the site and specific construction details of the facility).
2. Support the facility owner to identify feasible alternatives to mitigate the problem (this may require a consultant/engineer to conduct a detailed evaluation of the site and specific construction details of the facility).	2. Fund the most cost-effective mitigation alternative (albeit through local operating budgets, or if needed through funding streams at the state or federal levels, such as FEMAôs Pre-Disaster Mitigation Program (PDM), Hazard Mitigation Grant Program (HMGP), or Flood Mitigation Assistance Program (FMA)).
3. If requested by the facility owner, apply on the ownerôs behalf for federal mitigation project funding for the most cost-effective mitigation alternative (albeit through local operating budgets, or if needed through funding streams at the state or federal levels, such as FEMAôs Pre-Disaster Mitigation Program (PDM), Hazard Mitigation Grant Program (HMGP), or Flood Mitigation Assistance Program (FMA)).	3. Initiate the project when funding is secured.

appendix d
worksheet job aids

Worksheet Job Aid #1: Alternative Mitigation Actions by Hazard

You can use this job aid when filling out Worksheet #1. This job aid shows you at a quick glance the type of actions that can address the selected seven hazards. A description of each action is included in the glossary in Appendix A.

Alternative Mitigation Actions	Prevention																
	Building codes	Coastal zone management regulations	Density controls	Design review standards	Easements	Environmental review standards	Floodplain development regulations	Floodplain zoning	Forest fire fuel reduction	Hillside development regulations	Open space preservation	Performance standards	Shoreline setback regulations	Special use permits	Stormwater management regulations	Subdivision and development regulations	Transfer of development rights
Floods	■	■	■	■	■	■	■	■			■	■	■	■	■	■	■
Earthquakes	■		■	■	■	■				■	■	■		■		■	■
Tsunamis	■	■	■	■		■					■	■	■	■		■	■
Tornadoes	■			■		■						■				■	
Coastal Storms	■	■	■	■	■	■	■	■			■	■	■	■		■	■
Landslides	■		■	■	■	■			■	■	■	■	■	■		■	■
Wildfires	■		■	■	■	■			■	■	■	■		■		■	■

Alternative Mitigation Actions	Property Protection					Public Education & Awareness		
	Acquisition of hazard-prone structures	Construction of barriers around structures	Elevation of structures	Relocation out of hazard areas	Structural retrofits (e.g., reinforcement, flood-proofing, storm shutters, bracing, etc.)	Hazard information centers	Public education and outreach programs	Real estate disclosure
Floods	■	■	■	■	■	■	■	■
Earthquakes	■			■	■	■	■	■
Tsunamis	■	■	■	■	■	■	■	■
Tornadoes					■	■	■	■
Coastal Storms	■	■	■	■	■	■	■	■
Landslides	■			■		■	■	■
Wildfires	■			■		■	■	■

Alternative Mitigation Actions	Natural Resource Protection							
	Best Management Practices (BMPs)	Dune and beach restoration	Forest and vegetation management	Sediment and erosion control regulations	Stream corridor restoration	Stream dumping regulations	Urban forestry and landscape management	Wetlands development regulations
Floods	■		■	■	■	■	■	■
Earthquakes	■							
Tsunamis		■		■				
Tornadoes								
Coastal Storms	■	■		■				■
Landslides	■		■	■	■		■	■
Wildfires	■		■				■	■

Alternative Mitigation Actions	Emergency Services						Structural Projects				
	Critical facilities protection	Emergency response services	Hazard threat recognition	Hazard warning systems (community sirens, NOAA weather radio)	Health and safety maintenance	Post-disaster mitigation	Channel maintenance	Dams/reservoirs	Levees and floodwalls	Safe room/shelter	Seawalls/bulkheads
Floods	■	■	■	■	■	■	■	■	■		
Earthquakes	■	■	■	■	■	■					
Tsunamis	■	■	■	■	■	■			■		■
Tornadoes	■	■	■	■	■	■				■	
Coastal Storms	■	■	■	■	■	■	■		■	■	■
Landslides	■	■	■	■	■	■					
Wildfires	■	■	■	■	■	■					

appendix a
glossary

Acquisition of hazard-prone structures — Local governments can acquire lands in high hazard areas through conservation easements, purchase of development rights, or outright purchase of property.

Base Flood Elevation (BFE) — Elevation of the base flood in relation to a specified datum, such as the National Geodetic Vertical Datum of 1929. The Base Flood Elevation is used as a standard for the National Flood Insurance Program.

Benefit-cost analysis (BCA) — Benefit-cost analysis is a systematic, quantitative method of comparing the projected benefits to projected costs of a project or policy. It is used as a measure of cost effectiveness.

Best Management Practices (BMPs) — Appropriate, site-specific management techniques that maximize the benefits of land and natural resource management actions, while minimizing impacts.

Bond — A debt obligation issued by states, cities, counties, and other governmental entities to raise money to pay for public projects, such as government facilities and infrastructure.

Building — A structure that is walled and roofed, principally above ground and permanently affixed to a site. The term includes a manufactured home on a permanent foundation on which the wheel and axles carry no weight.

Building codes — Regulations that set forth standards and requirements for the construction, maintenance, operation, occupancy, use, or appearance of buildings, premises, and dwelling units. Building codes can include standards for structures to withstand natural hazards.

Capability assessment — An assessment that provides an inventory and analysis of a community or state's current capacity to address the threats associated with hazards. The capability assessment attempts to identify and evaluate existing policies, regulations, programs, and practices that positively or negatively affect the community or state's vulnerability to hazards or specific threats.

Channel maintenance — Ensuring that flood channels, storm sewers, retaining ponds, etc. do not become blocked by debris, sedimentation, overgrowth, or structural failure.

Coastal zone — The area along the shore where the ocean meets the land as the surface of the land rises above the ocean. This land/water interface includes barrier islands, estuaries, beaches, coastal wetlands, and land areas with direct drainage to the ocean.

Coastal zone management regulations

Regulations enacted to control growth and protect natural resources along coastlines. Under the federal Coastal Zone Management Act (CZMA) enacted in 1972, states and local governments adopt coastal zone management regulations designed to preserve, protect, and, where possible, restore or enhance valuable natural coastal resources such as wetlands, floodplains, estuaries, beaches, dunes, barrier islands, and coral reefs, as well as the wildlife dependent on those habitats.

Community Rating System (CRS)

CRS is a program that provides incentives for National Flood Insurance Program communities to complete activities that reduce flood hazard risk. When the community completes specified activities, the insurance premiums of the policyholders in those communities are reduced.

Comprehensive plan

A document, also known as a "general plan," covering the entire geographic area of a community and expressing community goals and objectives. The plan lays out the vision, policies, and strategies for the future of the community, including all of the physical elements that will determine the community's future development. This plan can discuss the community's desired physical development, desired rate and quantity of growth, community character, transportation services, location of growth, and siting of public facilities and transportation. In most states, the comprehensive plan has no authority in and of itself, but serves as a guide for community decision-making.

Construction of barriers around structures

Protective structures, such as berms and retaining walls, created by grading or filling areas with soil meant to keep flood waters from reaching buildings.

Critical facilities

Facilities vital to the health, safety, and welfare of the population and that are especially important following hazard events. Critical facilities include, but are not limited to, shelters, police and fire stations, and hospitals.

Dams

Dams are artificial barriers which impound water, wastewater, or any liquid-borne material for the purpose of storage or control of water. For a more detailed definition, see the National Dam Safety Program Act (as amended through P.L. 106-580. December 29, 2000).

Debris

The scattered remains of assets broken or destroyed in a hazard event. Debris caused by a wind or water hazard event can cause additional damage to other assets.

Density controls

Regulations that manage growth by limiting the density of development, often expressed in terms of the number of dwelling units per acre. Density controls allow the community to plan in an orderly way for infrastructure.

Design review standards

Guidelines enacted by local governments requiring new development to meet certain appearance and aesthetic standards and establishing a process by which local officials can examine site plans or structure blueprints to assess compliance with those standards. Design review standards can help ensure new development blends with existing buildings and the landscape or meet other priorities, including hazard loss reduction.

Design standards

A set of guidelines pertaining to the appearance and aesthetics of buildings or improvements that governs construction, alteration, demolition, or relocation of a building or improvement of land.

Disaster Mitigation Act of 2000 (DMA 2000)
DMA 2000 (Public Law 106-390) is the latest legislation to improve the planning process. It was signed into law on October 30, 2000. This new legislation reinforces the importance of mitigation planning and emphasizes planning for disasters before they occur.

Dune and beach restoration
Actions taken to re-establish dunes and beaches that serve as natural protection against coastal flooding and storm surge. Dune and beach restoration activities consist of replenishing sand, re-planting protective vegetation, controlling or restricting foot and vehicles traffic, and constructing sand traps or wind barriers.

Earthquake
A sudden motion or trembling that is caused by a release of strain accumulated within or along the edge of earth's tectonic plates.

Easements
Grant a right to use property, or restrict the landowner's right to use the property in a certain way.

Elevation of structures
Raising structures above the base flood elevation to protect structures located in areas prone to flooding.

Emergency response services
The actions of first responders such as firefighters, police, and other emergency services personnel at the scene of a hazard event. The first responders take appropriate action to contain the hazard, protect property, conduct search and rescue operations, provide mass care, and ensure public safety.

Eminent domain
The right of a government to appropriate private property for public use, with adequate compensation to the owner.

Environmental review standards
Guidelines established to ensure new development adheres to certain construction and site design standards to minimize the impact on the environment.

Erosion
Wearing away of the land surface by detachment and movement of soil and rock fragments during a flood or storm over a period of years, through the action of wind, water, or other geologic processes.

Federal Emergency Management Agency (FEMA)
Independent agency created in 1979 to provide a single point of accountability for all federal activities related to disaster mitigation and emergency preparedness, response, and recovery.

Fire-proofing
Actions taken on and around buildings to prevent the spread of fires.

Flood Mitigation Assistance (FMA) Program
A program created as part of the National Flood Insurance Reform Act of 1994. FMA provides funding to assist communities and states in implementing actions that reduce or eliminate the long-term risk of flood damage to buildings, manufactured homes, and other NFIP insurable structures, with a focus on repetitive loss properties.

Floodplain development regulations
Regulations requiring flood insurance and mandating certain design aspects of new or substantially improved structures that lie within regulated flood-prone areas. Current federal regulations through the National Flood Insurance Program require that, at a minimum, new residential buildings in the Special Flood Hazard Area have their lowest floor at or above the base flood elevation.

Floodplain zoning Zoning regulations that prescribe special uses for and serve to minimize development in floodplain areas.

Flood-proofing Actions that prevent or minimize future flood damage. Making the areas below the anticipated flood level watertight or intentionally allowing floodwaters to enter the interior to equalize flood pressures are examples of flood proofing.

Forest and vegetation management The management of forests and vegetation so they are resilient to landslides, high-winds, and other storm-related hazards.

Forest fire fuel reduction Minimizing fuel loads in forested areas by clearing excess ground cover and thinning diseased or damaged woodland to create healthier forests and to decrease the vulnerability to the devastation of forest fire.

General obligation bond A bond secured by the taxing and borrowing power of the municipality issuing it.

Goals General guidelines that explain what you want to achieve. They are usually broad policy statements, long-term in nature.

Hazard A source of potential danger or adverse condition.

Hazard information center Information booths, publication kiosks, exhibits, etc. that display information to educate the public about hazards that affect the jurisdiction and hazard mitigation activities people can undertake.

Hazard mitigation Sustained actions taken to reduce or eliminate long-term risk from hazards and their effects.

Hazard Mitigation Grant Program (HMGP) Authorized under Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, HMGP is administered by FEMA and provides grants to states, tribes, and local governments to implement hazard mitigation actions after a major disaster declaration. The purpose of the program is to reduce the loss of life and property due to natural disasters and to enable mitigation activities to be implemented as a community recovers from a disaster.

Hazard profile A description of the physical characteristics of hazards and a determination of various descriptors, including magnitude, duration, frequency, probability, and extent. In most cases, a community can most easily use these descriptors when they are recorded and displayed as maps.

Hazard threat recognition The process of identifying possible hazards and estimating potential consequences.

Hazard warning systems Systems or equipment such as community sirens and National Oceanic Atmospheric Administration (NOAA) weather radios designed to provide advanced warning of an impending hazard. Warning systems allow communities to take protective actions before a hazard event occurs, including taking cover, finding shelter, or moving furniture, cars, and people out of harm's way.

HAZUS, HAZUS-MH A GIS-based, nationally standardized, loss estimation tool developed by FEMA. HAZUS-MH is the new multi-hazard version that includes earthquake, wind, hurricane, and flood loss estimate components.

Health and safety maintenance Sections of emergency response/operations plans that provide for the security of affected areas, including clean up and special precautions for each type of hazard (e.g., draining standing water after a flood, cautioning about aftershocks after an earthquake or successive tsunami waves, etc.).

Hillside development regulations Site design and engineering techniques prescribed through regulations such as selective grading, drainage improvements, and vegetation clearance to eliminate, minimize, or control development on hillsides, thereby protecting the natural features of hillsides and reducing the likelihood of property damage from landslides.

Levees and floodwalls Flood barriers constructed of compacted soil or reinforced concrete walls.

Loss estimation Forecasts of human and economic impacts and property damage from future hazard events, based on current scientific and engineering knowledge.

Mitigation actions Activities, measures, or projects that help achieve the goals and objectives of a mitigation plan.

National Flood Insurance Program (NFIP) Federal program created by Congress in 1968 that makes flood insurance available in communities that enact minimum floodplain management regulations as indicated in 44 CFR §60.3.

Objectives Objectives define strategies or implementation steps to attain the identified goals. Unlike goals, objectives are specific and measurable.

Open space preservation Preserving undeveloped areas from development through any number of methods, including low-density zoning, open space zoning, easements, or public or private acquisition. Open space preservation is a technique that can be used to prevent flood damage in flood-prone areas, land failures on steep slopes or liquefaction-prone soils, and can enhance the natural and beneficial functions of floodplains.

Ordinance A term for a law or regulation adopted by a local government.

Performance standards Standards setting the allowable effects or levels of impact of development. Often used in conjunction with traditional zoning, the standards typically address specific environmental conditions, traffic, or stormwater runoff. Can also be imposed on structures in hazard areas to ensure they withstand the effect of hazards.

Planning team A group composed of government, private sector, and individuals with a variety of skills and areas of expertise, usually appointed by a city or town manager, or chief elected official. The group finds solutions to community mitigation needs and seeks community acceptance of those solutions.

Policy A course of action or specific rule of conduct to be followed in achieving goals and objectives.

Post-disaster mitigation Mitigation actions taken after a disaster has occurred, usually during recovery and reconstruction.

Post-disaster recovery ordinance An ordinance authorizing certain governmental actions to be taken during the immediate aftermath of a hazard event to expedite implementation of recovery and reconstruction actions identified in a pre-event plan.

Post-disaster recovery planning The process of planning those steps the jurisdiction will take to implement long-term reconstruction with a primary goal of mitigating its exposure to future hazards. The post-disaster recovery planning process can also involve coordination with other types of plans and agencies, but it is distinct from planning for emergency operations.

Private activity bond A bond whose interest may or may not be federally taxable. Under the Internal Revenue Code, private activity bonds are described generally as any bond: (1) of which more than 10% of the proceeds is to be used in a trade or business of any person or persons other than a governmental unit, and which is to be directly or indirectly repaid, or secured by revenues from, a private trade or business; and (2) in which an amount exceeding the lesser of 5% or $5 million of the proceeds is to be used for loans to any person or persons other than a governmental unit. Certain private activity bonds are tax exempt when used to finance private water, wastewater, and multifamily housing projects.

Public education and outreach programs Any campaign to make the public more aware of hazard mitigation and mitigation programs, including hazard information centers, mailings, public meetings, etc.

Real estate disclosure Laws requiring the buyer and lender to be notified if a property is located in a hazard-prone area.

Regulation Most states have granted local jurisdictions broad regulatory powers to enable the enactment and enforcement of ordinances that deal with public health, safety, and welfare. These include building codes, building inspections, zoning, floodplain and subdivision ordinances, and growth management initiatives.

Relocation out of hazard areas A mitigation technique that features the process of demolishing or moving a building to a new location outside the hazard area.

Reservoirs Large water storage facilities that can be used to hold water during peak runoff periods for controlled release during off-peak periods.

Resources Resources include the people, materials, technologies, money, etc., required to implement strategies or processes. The costs of these resources are often included in a budget.

Retrofitting See definition for structural retrofitting.

Risk The estimated impact that a hazard would have on people, services, facilities, and structures in a community; the likelihood of a hazard event resulting in an adverse condition that causes injury or damage. Risk is often expressed in relative terms such as a high, moderate, or low likelihood of sustaining damage above a particular threshold due to a specific type of hazard event. It also can be expressed in terms of potential monetary losses associated with the intensity of the hazard.

Safe room/shelter — A small interior room constructed above grade and used to provide protection from tornadoes and other severe storm events. Bathrooms and large closets often double as safe rooms.

Seawalls/bulkheads — Vertical coastal walls that are built and designed to protect buildings against shoreline erosion. May also protect against storm surge.

Sediment and erosion control regulations — Regulations that stipulate the amount of sediment and erosion that is acceptable for land undergoing development.

Shoreline setback regulations — Regulations that establish a minimum distance between the existing shoreline and buildable areas.

Special tax bond — A bond secured by the pledge of a specific special tax.

Special use permits — Permits granted by local governments for land uses that have the potential for creating conflicts with uses on adjacent properties.

Stakeholder — Individual or group that will be affected in any way by an action or policy. Stakeholders include businesses, private organizations, and citizens.

State Hazard Mitigation Officer (SHMO) — The representative of state government who is the primary point of contact with FEMA, other state and federal agencies, and local units of government in the planning and implementation of pre- and post-disaster mitigation activities.

Storm water management regulations — Regulations governing the maintenance and improvement of urban storm water systems and the implementation of land treatment actions to minimize the effects of surface water runoff. Land treatment actions include maintenance of vegetative cover, terracing, and slope stabilization.

Strategy — Collection of actions to achieve goals and objectives.

Stream corridor restoration — The restoration of the areas bordering creeks, including the stream bank and vegetation.

Stream dumping regulations — Regulations prohibiting dumping in the community's drainage system, thereby maintaining stream carrying capacities and reducing the possibility of localized flooding.

Structural retrofitting — Modifying existing buildings and infrastructure to protect them from hazards.

Subdivision — The division of a tract of land into two or more lots for sale or development.

Subdivision and development regulations — Regulations and standards governing the division of land for development or sale. Subdivision regulations can control the configuration of parcels, set standards for developer-built infrastructure, and set standards for minimizing runoff, impervious surfaces, and sediment during development. They can be used to minimize exposure of buildings and infrastructure to hazards.

Taxation Taxes and special assessments can be an important source of revenue for governments to help pay for mitigation activities. The power of taxation can also have a profound impact on the pattern of development in local communities. Special tax districts, for example, can be used to discourage intensive development in hazard-prone areas.

Transfer of development rights (TDR) A growth management technique through which development rights are transferred from a designated "sending" area to a designated "receiving" area. The sending area is generally prohibited from development and the receiving area is a targeted development area that can be built at a higher density.

Urban forestry and landscape management Forestry management techniques that promote the conservation of forests and related natural resources in urbanized areas, with a focus on obtaining the highest social, environmental, and economic benefits.

Vulnerability Describes how exposed or susceptible to damage an asset is. Vulnerability depends on an asset's construction, contents, and the economic value of its functions.

Wetlands development regulations Regulations designed to preserve and/or minimize the impact of development on wetlands.

Wind-proofing Modification of design and construction of buildings to withstand wind damage.

Zoning The division of land within a local jurisdiction by local legislative regulation into zones of allowable types and intensities of land uses.

Zoning or land use map A map that identifies the various zoning district boundaries and the uses permitted by a zoning ordinance within those boundaries.

Zoning ordinance Designation of allowable land use and intensities for a local jurisdiction. Zoning ordinances consist of two components: a zoning text and a zoning map.

FEMA

GRANT PROGRAM COMPARISON

Mitigation Directorate Grant Programs

During FY09, FEMA will offer five Hazard Mitigation Assistance (HMA) programs – the Hazard Mitigation Grant Program, the Pre-Disaster Mitigation program, the Flood Mitigation Assistance program, the Repetitive Flood Claims program and the Severe Repetitive Loss program. Although all five programs have unique statutory authorities, program requirements, and triggers for funding, all of the programs also have the common goal of providing funds to States and local communities to reduce the loss of life and property from natural hazard events.

This chart will help illustrate the similarities and differences among the grant programs.

NOTE: For the purposes of HMGP, Applicants will be referred to as subapplicants and applications will be referred to as subapplications.

Program Element	Hazard Mitigation Grant Program (HMGP)	Pre-Disaster Mitigation (PDM)	Flood Mitigation Assistance (FMA)	Repetitive Flood Claims (RFC)	Severe Repetitive Loss (SRL)
Authorities	Section 404 of the Robert T. Stafford Disaster Assistance and Emergency Relief Act (Stafford Act), 42 U.S. Code (U.S.C.) 5170c.	Section 203 of the Stafford Act, 42 U.S.C. 5133.	Section 1366 of the National Flood Insurance Act of 1968 (NFIA); 42 U.S.C. 4101c, as amended by the National Flood Insurance Reform Act of 1994 (NFIRA), Public Law 103-325; and the Flood Insurance Reform Act of 2004 (FIRA), Public Law 108-264.	Section 1323 of the NFIA, 42 U.S.C. 4030, as amended by the FIRA 2004, Public Law 108-264.	Section 1361A of the NFIA, 42 U.S.C. 4102a, as amended by the FIRA 2004, Public Law 108-264.
Purpose	To significantly reduce or permanently eliminate future risk to lives and property from natural hazards. HMGP funds projects in accordance with priorities identified in State, Tribal, or local hazard mitigation plans, and enables mitigation measures to be implemented during the recovery from a disaster.	To provide funds for hazard mitigation planning and the implementation of mitigation projects prior to a disaster event. Funding these plans and projects reduces overall risks to the population and structures, while also reducing reliance on funding from actual disaster declarations.	To reduce or eliminate the long-term risk of flood damage to buildings, manufactured homes, and other structures insured under the National Flood Insurance Program (NFIP).	To reduce or eliminate the long-term risk of flood damage to structures insured under the NFIP that have had one or more claim payments for flood damages.	To reduce or eliminate the long-term risk of flood damage to severe repetitive loss residential structures insured under the NFIP.

Program Element	Hazard Mitigation Grant Program (HMGP)	Pre-Disaster Mitigation (PDM)	Flood Mitigation Assistance (FMA)	Repetitive Flood Claims (RFC)	Severe Repetitive Loss (SRL)
Program Priorities	Priorities are set by the State under each disaster declaration that includes authorized HMGP assistance.	Provide funds for hazard mitigation planning and the implementation of mitigation projects prior to a disaster event.	Mitigation activities that reduce or eliminate the long-term risk of flood damage to insured properties.	Funding mitigation activities that are in the best interest of the National Flood Insurance Fund (NFIF).	Funding mitigation activities that are in the best interest of the NFIF.
Applicant Eligibility	State emergency management agencies or a similar State office (i.e., the office that has primary emergency management or as designated by the Governor), the District of Columbia, the U.S. Virgin Islands, American Samoa, the Commonwealth of Puerto Rico, the Commonwealth of the Northern Mariana Islands, and federally recognized Indian Tribal governments. Each State, Territory, or Tribal government shall designate one agency to serve as the Grantee for the program.	State emergency management agencies or a similar State office (i.e., the office that has primary emergency management or floodplain management responsibility), the District of Columbia, the U.S. Virgin Islands, American Samoa, the Commonwealth of Puerto Rico, the Commonwealth of the Northern Mariana Islands, and federally recognized Indian Tribal governments. Each State, Territory, or Tribal government shall designate one agency to serve as the Applicant for the program.	State emergency management agencies or a similar State office (i.e., the office that has primary emergency management or floodplain management responsibility), the District of Columbia, the U.S. Virgin Islands, American Samoa, the Commonwealth of Puerto Rico, the Commonwealth of the Northern Mariana Islands, and federally recognized Indian Tribal governments. Each State, Territory, or Tribal government shall designate one agency to serve as the Applicant for the program.	State emergency management agencies or a similar State office (i.e., the office that has primary emergency management or floodplain management responsibility), the District of Columbia, the U.S. Virgin Islands, American Samoa, the Commonwealth of Puerto Rico, the Commonwealth of the Northern Mariana Islands, and federally recognized Indian Tribal governments. Each State, Territory, or Tribal government shall designate one agency to serve as the Applicant for the program. **RFC funds are only available to those States or communities that cannot meet the requirements of the FMA program for either cost share or capacity to manage the activities.**	State emergency management agencies or a similar State office (i.e., the office that has primary emergency management or floodplain management responsibility), the District of Columbia, the U.S. Virgin Islands, American Samoa, the Commonwealth of Puerto Rico, the Commonwealth of the Northern Mariana Islands, and federally recognized Indian Tribal governments. Each State, Territory, or Tribal government shall designate one agency to serve as the Applicant for the program.
Subapplicant Eligibility	• State-level agencies; • Federally recognized Indian Tribal	• State-level agencies including State institutions (e.g., State hospital or university);	• State-level agencies; • Federally recognized Indian Tribal	• State-level agencies; • Federally recognized Indian Tribal	• State-level agencies; • Federally recognized Indian Tribal

Program Element	Hazard Mitigation Grant Program (HMGP)	Pre-Disaster Mitigation (PDM)	Flood Mitigation Assistance (FMA)	Repetitive Flood Claims (RFC)	Severe Repetitive Loss (SRL)
Subapplicant Eligibility (continued)	governments; • Local governments (to include State-recognized Indian Tribes, authorized Indian Tribal organizations, and Alaska Native villages); and • Certain private nonprofit (PNP) organizations or institutions. Private individuals or businesses may not apply directly to the State or FEMA, but eligible local governments or PNP organizations may apply to benefit the private entity.	• Federally recognized Indian Tribal governments; • Local governments (to include State-recognized Indian Tribes, authorized Indian Tribal organizations, and Alaska Native villages); • Public colleges and universities; and • Indian Tribal colleges and universities. Private individuals, PNP organizations, and private colleges and universities are not eligible subapplicants; however, an eligible, relevant State agency or local government may apply to the Applicant as the subapplicant for assistance to benefit the private entity.	governments; and • Local governments (to include State-recognized Indian Tribes, authorized Indian Tribal organizations, and Alaska Native villages). Private individuals and PNP organizations are not eligible subapplicants. However, an eligible, relevant State agency or local government may apply to the Applicant as the subapplicant for assistance to benefit the private entity.	governments; and • Local governments (to include State-recognized Indian Tribes, authorized Indian Tribal organizations, and Alaska Native villages). Private individuals and PNP organizations are not eligible subapplicants. However, an eligible, relevant State agency or local government may apply to the Applicant as the subapplicant for assistance to benefit the private entity. **RFC funds are only available to those States or communities that cannot meet the requirements of the FMA program for either cost share or capacity to manage the activities.**	governments; and • Local governments (to include State-recognized Indian Tribes, authorized Indian Tribal organizations, and Alaska Native villages). Private individuals and PNP organizations are not eligible subapplicants. However, an eligible, relevant State agency or local government may apply to the Applicant as the subapplicant for assistance to benefit the private entity.
Eligible Project Grants	Projects to protect either public or private property, as long as the project fits within State and local government mitigation strategies to address areas of risk, and complies with program guidelines. Examples of projects include: • Acquisition and demolition or relocation	Examples of projects include: • Acquisition and demolition or relocation of structures, with conversion of the underlying property to deed-restricted open space; • Elevation of existing structures to at least the BFE or an ABFE or	Examples of projects include: • Acquisition and demolition or relocation of structures, with conversion of the underlying property to deed-restricted open space; • Elevation of existing structures to at least the BFE or an ABFE or	Examples of projects include: • Acquisition and demolition or relocation of structures, with conversion of the underlying property to deed-restricted open space; • Elevation of existing structures to at least the BFE or an ABFE or	Examples of projects include: • Acquisition and demolition or relocation of structures, with conversion of the underlying property to deed-restricted open space; • Elevation of existing structures to at least the BFE or an ABFE or

Program Element	Hazard Mitigation Grant Program (HMGP)	Pre-Disaster Mitigation (PDM)	Flood Mitigation Assistance (FMA)	Repetitive Flood Claims (RFC)	Severe Repetitive Loss (SRL)
Eligible Project Grants (continued)	of structures, with conversion of the underlying property to deed-restricted open space; • Elevation of existing structures to at least the base flood elevation (BFE) or an advisory base flood elevation (ABFE) or higher; • Structural and non-structural retrofitting of existing public or private structures; • Dry floodproofing of non-residential structures; • Minor and localized flood reduction projects; and • Construction of safe rooms (tornado and severe wind) for public and private structures.	higher; • Structural and non-structural retrofitting of existing public or private structures; • Construction of safe rooms (tornado and severe wind) for public and private structures; • Hydrologic and Hydraulic studies/analyses, engineering studies and drainage studies for the purpose of project design and feasibility determination directly related to the proposed project; • Vegetation management for natural dune restoration, wildfire, or snow avalanche; • Storm water management projects to reduce or eliminate long-term risk from flood hazards; and • Localized flood reduction projects that are designed specifically to protect critical facilities and that do not constitute a section of a larger flood control system.	higher; • Dry floodproofing of non-residential structures; and • Minor and localized flood reduction projects. All properties must be NFIP insured at the time of application.	higher; • Dry floodproofing of non-residential structures; and • Minor and localized flood reduction projects (funding limited to $1 million per project). All properties must be NFIP insured at the time of application.	higher. Mitigation reconstruction is permitted when traditional elevation cannot be implemented; • Dry floodproofing (historic properties only); and • Minor and localized flood reduction projects. All properties must be NFIP insured at the time of application.

Program Element	Hazard Mitigation Grant Program (HMGP)	Pre-Disaster Mitigation (PDM)	Flood Mitigation Assistance (FMA)	Repetitive Flood Claims (RFC)	Severe Repetitive Loss (SRL)
Eligible Planning Grants	Planning grants are available for developing State, local, or Tribal mitigation plans. **Funding is available for up to 7 percent of total HMGP grant amount.**	Planning grants are available for: • New plan development • Plan updates	Planning grants are available for planning activities that support the flood hazard component of a State, Indian Tribal, or local mitigation plan that meets the planning criteria outlined in 44 Code of Federal Regulations (CFR) Part 201.	**Planning grants are not available.**	**Planning grants are not available.**
Eligible Management Costs	**For disasters declared prior to November 13, 2007:** The HMGP provides three categories of "direct administrative costs": • State management; • Grantee administrative; and • Subgrantee administrative. **For disasters declared after November 13, 2007:** Administrative costs, management costs, and indirect costs are included in a single Management Cost rate. The amount of Management Cost available to the Grantee is based on a flat rate of 4.89 percent of the projected Federal funding for HMGP. Grantees determine the percentage or amount to pass through to subgrantees.	Management costs are available to support the planning and project subapplications: • Applicants/Grantees up to 10 percent of total funds requested; and • Subapplicants/subgrantees up to 5 percent of total funds requested.	Management costs are available to support the planning and project subapplications: • Applicants/Grantees up to 10 percent of total funds requested; and • Subapplicants/subgrantees up to 5 percent of total funds requested.	Management costs are available to support the project subapplications: • Applicants/Grantees up to 10 percent of total funds requested; and • Subapplicants/subgrantees up to 5 percent of total funds requested.	Management costs are available to support the project subapplications: • Applicants/Grantees up to 10 percent of total funds requested; and • Subapplicants/subgrantees up to 5 percent of total funds requested.

Program Element	Hazard Mitigation Grant Program (HMGP)	Pre-Disaster Mitigation (PDM)	Flood Mitigation Assistance (FMA)	Repetitive Flood Claims (RFC)	Severe Repetitive Loss (SRL)
Planning Requirements	All States/Tribes/Territories must have a FEMA-approved and adopted State/Tribal Standard or Enhanced Mitigation Plan to receive HMGP funds. In addition, all subapplicants must have a FEMA-approved local mitigation plan in accordance with 44 CFR Parts 201.6 and 206.434(b) to be eligible to receive project grant funding under the HMGP. All activities submitted for consideration must be consistent with the Grantee's State/Tribal standard or enhanced hazard mitigation plan and the subapplicant's Tribal/local/university hazard mitigation plan for the local jurisdiction in which the activity is located.	All Applicants must have a FEMA-approved State Mitigation Plan (Standard or Enhanced) or Tribal Mitigation Plan by the application deadline to be eligible to apply for project grant funding under the PDM program in accordance with 44 CFR Part 201. In addition, all subapplicants must have a FEMA-approved mitigation plan by the application deadline to be eligible to apply for project grant funding under the PDM program. Projects submitted for consideration must be consistent with the goals and objectives identified in the current FEMA-approved State/Tribal Mitigation Plan and the Tribal/local/university mitigation plan for the jurisdiction in which the activity is located. If any plan is due to lapse soon after application, the project award may be held pending approval of a new or updated plan.	All Applicants must have a FEMA-approved State Mitigation Plan (Standard or Enhanced) or Tribal Mitigation Plan by the application deadline to be eligible to receive project grant funding under the FMA program, in accordance with 44 CFR Part 201. In addition, all subapplicants must have a FEMA-approved mitigation plan by the application deadline to be eligible to receive project grant funding under the FMA program. In order to be eligible for an increased Federal cost share of up to 90 percent for severe repetitive loss properties, the FEMA-approved State or Tribal Standard Mitigation Plan in effect at the time of grant award must address repetitive loss properties. If any plan is due to lapse soon after application, the project award may be held pending approval of a new or updated plan.	All Applicants must have a FEMA-approved State Mitigation Plan (Standard or Enhanced) or Tribal Mitigation Plan by the application deadline to be eligible to receive project grant funding under the RFC program, in accordance with 44 CFR Part 201. If any plan is due to lapse soon after application, the project award may be held pending approval of a new or updated plan. **No local plan requirement.**	All Applicants must have a FEMA-approved State Mitigation Plan (Standard or Enhanced) or Tribal Mitigation Plan by the application deadline to be eligible to receive project grant funding under the SRL program, in accordance with 44 CFR Part 201. In addition, all subapplicants must have a FEMA-approved mitigation plan by the application deadline to be eligible to receive project grant funding under the SRL program. In order to be eligible for an increased cost share of up to 90 percent, the FEMA-approved State or Tribal Mitigation Plan in effect at the time of grant award must address repetitive loss properties. If any plan is due to lapse soon after application, the project award may be held pending approval of a new or updated plan.
Application Process	The primary responsibility for selecting and administering mitigation activities resides with the	Applicants must apply electronically via FEMA's *e*Grants application, available at	Applicants must apply electronically via FEMA's *e*Grants application, available at	Applicants must apply electronically via FEMA's *e*Grants application, available at	Applicants must apply electronically via FEMA's *e*Grants application, available at

Program Element	Hazard Mitigation Grant Program (HMGP)	Pre-Disaster Mitigation (PDM)	Flood Mitigation Assistance (FMA)	Repetitive Flood Claims (RFC)	Severe Repetitive Loss (SRL)
Application Process (continued)	State. The State sets mitigation priorities and selects project subapplications that are developed and submitted by local jurisdictions. Although individuals may not apply directly to the State for assistance, local governments may sponsor an application on their behalf. After its eligibility review, the State forwards subapplications consistent with State mitigation planning objectives to FEMA for review and approval.	https://portal.fema.gov. Subapplicants apply directly to the Applicant, who reviews and prioritizes the subapplications. The Applicant submits the Grant application with subapplications to FEMA for review and approval.	https://portal.fema.gov. Subapplicants apply directly to the Applicant, who reviews and prioritizes the subapplications. The Applicant submits the Grant application with subapplications to FEMA for review and approval.	https://portal.fema.gov. Subapplicants apply directly to the Applicant, who reviews and prioritizes the subapplications. The Applicant submits the Grant application with subapplications to FEMA for review and approval.	https://portal.fema.gov. Subapplicants apply directly to the Applicant, who reviews and prioritizes the subapplications. The Applicant submits the Grant application with subapplications to FEMA for review and approval.
Available Funds	Federal funding under the HMGP is available following a major disaster declaration, if requested by the Governor. As of October 4, 2006, if a State has a FEMA-approved Standard State Mitigation plan, HMGP funds are available based on up to 15 percent for amounts not more than $2 billion of the total of Public and Individual Assistance funds authorized for the disaster; up to 10 percent for amounts of $2 billion to not more than $10 billion; 7.5 percent for amounts of $10 billion to not more than $35.333 billion. If a State	Pending Appropriation.	Pending Appropriation.	Pending Appropriation.	Pending Appropriation.
Available Funds					

Program Element	Hazard Mitigation Grant Program (HMGP)	Pre-Disaster Mitigation (PDM)	Flood Mitigation Assistance (FMA)	Repetitive Flood Claims (RFC)	Severe Repetitive Loss (SRL)
(continued)	has a FEMA-approved Enhanced Mitigation plan, HMGP funds are available based on up to 20 percent of the total of Public and Individual Assistance funds authorized for the disaster.				
Cost-Share Requirements	HMGP grant funds may be used to pay up to 75 percent of the eligible project costs. The non-Federal match does not need to be cash; in-kind services or materials may be used.	FEMA may contribute up to 75 percent Federal funding for the amount approved under the grant award to implement approved activities. Small and impoverished communities may be eligible for up to a 90 percent Federal cost share.	FEMA may contribute up to 75 percent Federal funding for the amount approved under the grant award to implement approved activities. An increased Federal cost share of up to 90 percent is available for the mitigation of severe repetitive loss properties for any Applicant that has taken actions to reduce the number of repetitive loss properties, including severe repetitive loss properties, and has a FEMA-approved State or Tribal Mitigation Plan that specifies how it has reduced, and how it intends to reduce, the number of such repetitive loss properties.	FEMA may contribute up to 100 percent Federal funding for the amount approved under the grant award to implement approved activities.	FEMA may contribute up to 75 percent Federal funding for the amount approved under the grant award to implement approved activities. An increased Federal cost share of up to 90 percent is available for any Applicant that has taken actions to reduce the number of repetitive loss properties, including severe repetitive loss properties, and has a FEMA-approved State or Tribal Mitigation Plan that specifies how it has reduced, and how it intends to reduce, the number of such repetitive loss properties.
Distribution of Funds **Distribution of**	The HMGP is administered by the State. The mitigation planning and application development process begins at the local level. States prioritize local subapplications and select projects for funding.	Grants are awarded on a competitive basis. Eligible subapplications will compete nationally for grant funds.	Applicants may receive a FMA project and planning target allocation based on the national percentage of NFIP policies present within the jurisdiction. An Applicant may apply for funding up to or exceeding	Grants are awarded on a competitive basis. Eligible subapplications will compete nationally for grant funds.	Applicants may receive a target allocation based on the national percentage of severe repetitive loss properties present within the jurisdiction. An Applicant may apply for funding up to or exceeding its target

Program Element	Hazard Mitigation Grant Program (HMGP)	Pre-Disaster Mitigation (PDM)	Flood Mitigation Assistance (FMA)	Repetitive Flood Claims (RFC)	Severe Repetitive Loss (SRL)
Funds (continued)			its target allocation.		allocation. Applicants that do not meet the minimum threshold to receive a target allocation will be eligible to apply for a 10 percent set-aside of the SRL funds.
Application Deadline	Generally, subapplications must be submitted to the State for consideration within 12 months following a disaster declaration.	Applicants must submit an FY09 grant application through the *e*Grants system to the appropriate FEMA Regional Office by December 19, 2008, at 11:59:59 p.m. Eastern Standard Time. All supporting documentation that cannot be attached to the *e*Grants system must be received by the FEMA Regional Office by the application deadline.	Applicants must submit an FY09 grant application through the *e*Grants system to the appropriate FEMA Regional Office by December 19, 2008, at 11:59:59 p.m. Eastern Standard Time. All supporting documentation that cannot be attached to the *e*Grants system must be received by the FEMA Regional Office by the application deadline.	Applicants must submit an FY09 grant application through the *e*Grants system to the appropriate FEMA Regional Office by December 19, 2008, at 11:59:59 p.m. Eastern Standard Time. All supporting documentation that cannot be attached to the *e*Grants system must be received by the FEMA Regional Office by the application deadline.	Applicants must submit an FY09 grant application through the *e*Grants system to the appropriate FEMA Regional Office by December 19, 2008, at 11:59:59 p.m. Eastern Standard Time. All supporting documentation that cannot be attached to the *e*Grants system must be received by the FEMA Regional Office by the application deadline.
Application Review **Application**	Project subapplications are reviewed by the State to ensure all program requirements are met. States should submit eligible subapplications for funding. There are five minimum criteria that all projects must meet in order to be considered for funding: • Conforms with the State Hazard Mitigation Plan; • Provides beneficial impact upon the designated disaster area;	Project subapplications are reviewed by the Applicant to ensure all program requirements are met. Applicants should submit eligible subapplications for funding. Applications and subapplications are reviewed by FEMA for: • Eligibility and completeness; • Cost effectiveness; • Engineering feasibility	Project subapplications are reviewed by the Applicant to ensure all program requirements are met. Applicants should submit eligible subapplications for funding. Applications and subapplications are reviewed by FEMA for: • Eligibility and completeness; • Cost effectiveness; • Engineering feasibility	Project subapplications are reviewed by the Applicant to ensure all program requirements are met. Applicants should submit eligible mitigation project subapplications for funding. Project applications and subapplications are reviewed by FEMA for: • Eligibility and completeness; • Cost effectiveness; • Engineering feasibility	Project subapplications are reviewed by the Applicant to ensure all program requirements are met. Applicants should submit eligible mitigation project subapplications for funding. Project applications and subapplications are reviewed by FEMA for: • Eligibility and completeness; • Cost effectiveness; • Engineering feasibility

Program Element	Hazard Mitigation Grant Program (HMGP)	Pre-Disaster Mitigation (PDM)	Flood Mitigation Assistance (FMA)	Repetitive Flood Claims (RFC)	Severe Repetitive Loss (SRL)
Review **(continued)**	• Conforms with environmental laws and regulations; • Solves a problem independently or constitutes a function portion of a solution; and • Is cost-effective.	and effectiveness; and • Environmental/Historic Preservation compliance. National Ranking - FEMA will score all eligible planning and project subapplications on the basis of predetermined, objective, quantitative factors to calculate a National Ranking Score. National Evaluation - National panels chaired by FEMA and composed of representatives from FEMA Headquarters and Regions, other Federal agencies, States, federally-recognized Indian Tribal governments, Territories, and local governments convene to evaluate planning and project subapplications on the basis of additional pre-determined qualitative factors. Technical Review - FEMA conducts technical reviews for Benefit Cost and Engineering Feasibility on the highest scoring project subapplications representing approximately 150 percent of available funding.	and effectiveness; and • Environmental/Historic Preservation compliance.	and effectiveness; and • Environmental/Historic Preservation compliance.	and effectiveness; and • Environmental/Historic Preservation compliance.

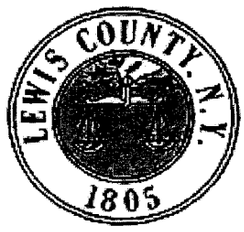
APPENDIX F –

SUPPORTING DOCUMENTATION

This Appendix contains the following documents which were integral to the planning process:

- Letter inviting municipalities to participate in the plan
- Municipal Statement of Authority ï Participating
- Municipal Statement of Authority ï Non-Participating
- Municipal Statement of Authority ï Participating (completed example)
- Plan Fact Sheets
- Land Use and Development Questionnaire
- Capabilities Assessment Questionnaire
- Hazard Identification Questionnaire

James M. Martin
Director



Emergency Services Management
Fire Coordinator
5252 Outer Stowe Street
Lowville, NY 13367
Tel: (315) 376-5234 Fax: (315) 376-5293
E-mail: jmartin@lewiscountyny.org

April 28, 2009

Mr. Thomas Fleming
Town Supervisor
Town of Denmark
3707 Roberts Road
Carthage, NY 13619

Dear Mr. Fleming:

Lewis County has recently received grant funding from the Federal Emergency Management Agency (FEMA) to prepare a natural Hazard Mitigation Plan. The primary purpose of a hazard mitigation planning project is to identify community policies, actions, and tools for implementation over the long term that will result in a reduction in risk and potential for future losses as a result of natural hazards.

We are undertaking this process in order to meet the requirements of the Disaster Mitigation Act of 2000 (DMA 2000). Passed by the President in October of 2000, this Act mandates that all states and local governments must have hazard mitigation plans approved by the Federal Emergency Management Agency to be eligible for certain types of federal disaster mitigation project funding (under such programs as the Hazard Mitigation Grant Program and the Pre-Disaster Mitigation Program). To be compliant with the DMA 2000, a community must either: (a) prepare its own hazard mitigation plan, or (b) participate in a "multi-jurisdictional" plan development process.

Lewis County has elected to use its grant funding to lead the effort for preparing what is called a 'multi-jurisdictional' plan. We are writing to you today to invite you to participate with us in this important endeavor as we work to become a more sustainable and disaster-resistant county. Municipalities are by no means required to participate. However, some advantages to participating in a multi-jurisdictional process include:

- All jurisdictions that participate in the process will be compliant with DMA 2000 once FEMA approves the final plan and the jurisdiction's local governing body formally adopts the final plan.

Lewis County is an equal opportunity provider and employer. Complaints of discrimination should be made known to Lewis County Board of Legislators

- Multi-jurisdictional planning committees can provide a forum for engaging in partnerships that could provide technical, financial, and/or staff resources in your effort to reduce the effects, and hence the costs, of hazards.

- Smaller jurisdictions can benefit from the additional resources and expertise that collaboration can bring.

- Multi-jurisdictional hazard mitigation plans are practical for addressing issues best dealt with on a larger scale, which do not recognize political boundaries.

- Multi-jurisdictional planning creates economies of scale and enables pooling of limited resources.

While natural disasters cannot be prevented from occurring, the continued implementation of our hazard mitigation plan over the long-term will gradually, but steadily, lessen the impacts associated with hazard events in our county.

Please advise if your municipality is interested in participating in the process or wishes to decline. We have enclosed two formal statements – one indicating a desire to participate and the second indicates a desire to decline. Please complete and return the appropriate form to us no later than May 8, 2009. Note that if your municipality wishes to participate, we have asked that you identify a single representative and an alternate to represent your jurisdiction on the Core Planning Group. Ideal candidates might be someone from your emergency management office, planning department, public works department, etc. who is familiar with the hazards in your community.

For participating jurisdictions, please be prepared to attend a Kickoff Meeting for the project on May 21, 2009 at the Lowville Fire Hall at 1pm.

We look forward to your participation with us in this very important project. If you have any questions, please feel free to contact me.

Sincerely,

James M. Martin

James M. Martin
Director,
Lewis County Fire and Emergency Management

Enclosures

Lewis County is an equal opportunity provider and employer. Complaints of discrimination should be made known to Lewis County Board of Legislators

Statement of Authority - Participating

Lewis County Multi-Jurisdictional Natural Hazard Mitigation Plan

Lead Agency: Lewis County Fire and Emergency Management
5252 Outer Stowe Street
P.O. Box 233
Lowville, New York 13367
Contact: James Martin, Director

This document is prepared as a statement of the authority advising Lewis County Office of Fire and Emergency Management that the _____ of _____ **has opted to participate** in development of the Lewis County Multi-Jurisdictional Natural Hazard Mitigation Plan. Our municipality has committed to participating in development of a county-wide, multi-jurisdictional natural hazard mitigation plan. We have authorized the following two individuals: _____ and _____ ("Representative" and "Alternate", respectively) as local members serving on the Multi-Jurisdictional Core Planning Group and to actively participate as requested throughout the planning process.

We understand that our entity will be required to name its own local hazard mitigation planning committee ("Jurisdictional Assessment Team") if it has not already done so. The Local Emergency Planning Committee may be able to serve in this capacity.

At the end of the project, it is understood that our entity will need to pass a resolution formally adopting the final plan if they are in agreement with said plan and wish to apply for future funding for mitigation projects. This resolution will be provided immediately to Lewis County Fire and Emergency Management for submittal to FEMA, who requires the resolution on file.

*Name of Entity*_____

*Name & Title of Authorizing Individual*_____

*Authorizing Signature and Date*_____

*Representative's Name & Title*_____

*Representative's Address*_____

*Representative's Phone, Fax and Email*_____

*Alternate's Name & Title*_____

*Alternate's Address*_____

*Alternate's Phone, Fax and Email*_____

Statement of Authority – Not Participating

Lewis County Multi-Jurisdictional Natural Hazard Mitigation Plan

Lead Agency: Lewis County Fire and Emergency Management
5252 Outer Stowe Street
P.O. Box 233
Lowville, New York 13367
Contact: James Martin, Director

This document is prepared as a statement advising Lewis County Office of Fire and Emergency Management that the _____ of _____ **has opted not to participate** in development of the Lewis County Multi-Jurisdictional Natural Hazard Mitigation Plan.

It is understood that unless our entity prepares its own, single-jurisdiction hazard mitigation plan, we will not be in compliance with the Disaster Mitigation Act of 2000 and, as such will not be eligible to apply for future federal funding for hazard mitigation projects.

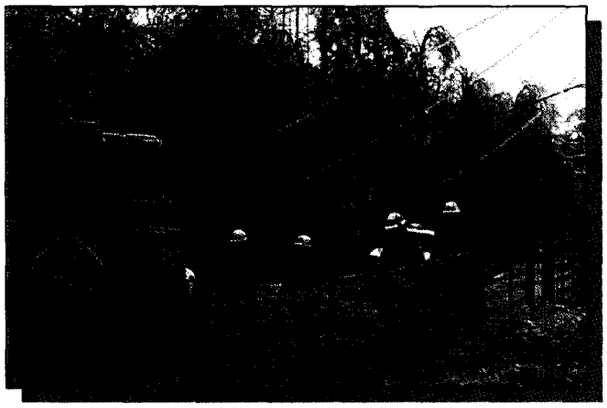
*Name of Entity*_____

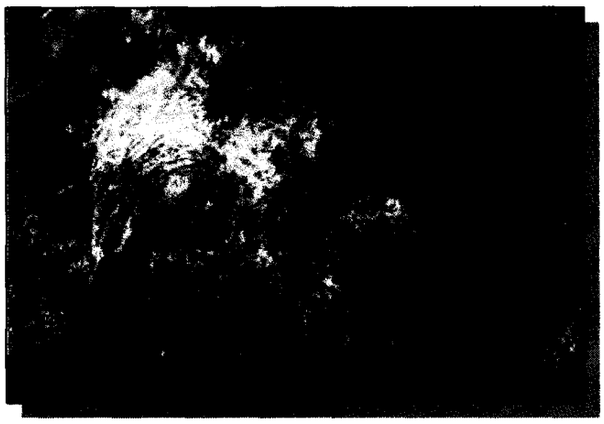
*Name & Title of Authorizing Individual*_____

*Authorizing Signature and Date*_____

Lewis County
Multi-Jurisdictional
Hazard Mitigation Planning Project
PLAN FACTS

APRIL 2009

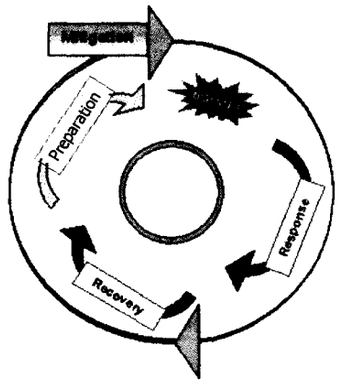




WHAT IS HAZARD MITIGATION?

Natural hazards have the potential to cause property damage, loss of life, economic hardship, and threats to public health and safety.

Hazard mitigation measures are the things you do today to be more protected in the future. They are measures taken before a disaster happens to reduce the impact that future disasters will have on people and property in the community. Mitigation reduces the risk of loss and creates a more disaster-resistant and sustainable community. Hazard mitigation measures are essential to breaking the typical disaster cycle of damage, reconstruction, and repeated damage.



PURPOSE AND NEED FOR THE PLAN

Hazard mitigation plans are developed BEFORE a disaster strikes. The plans identify community policies, actions, and tools for long-term implementation to reduce risk and potential for future losses. Adopted, implemented and maintained on an ongoing basis, these plans will gradually, but steadily, lessen the impacts associated with hazard events.

As of November 1, 2004 communities without a FEMA-approved hazard mitigation plan are not eligible for FEMA project grant monies under programs such as the Hazard Mitigation Grant Program (HMGP), Flood Mitigation Assistance Program (FMA) and Pre-Disaster Mitigation Grant Program (PDM).

PARTICIPATION

Jurisdictions who wish to be recognized by FEMA as being compliant with DMA 2000 must either: (a) participate in the multi-jurisdictional plan development process and formally adopt the final plan, or (b) prepare their own hazard mitigation plan. All jurisdictions in Lewis County are being invited to participate in the multi-jurisdictional planning process.

To be recognized in FEMA's eyes as successfully participating in the multi-jurisdictional plan, jurisdictions must: participate actively in the planning process; develop unique jurisdictional mitigation actions; and formally adopt the final plan. Active participation involves attending meetings, providing feedback, and reaching out to the public and other key stakeholders in the community.

While the primary advantage of having a mitigation plan in place is the jurisdiction's eligibility to apply for FEMA hazard mitigation project grant monies, participation has other advantages as well:

- Because a consulting team has been hired to conduct the analyses and author the plan, participation involves relatively little effort on the part of jurisdictions.
- Because Federal grant monies have been received to develop the plan, participation involves little cost to local jurisdictions - only allocation of staff time to participate in the process, and a contribution toward the grant's 25% matching funds.
- Multi-jurisdictional hazard mitigation plans are practical for addressing issues that do not recognize political boundaries.
- Over time, implementation of the plan will reduce economic damages resulting from future natural disasters.

STRUCTURE

Elected and appointed government officials, business leaders, volunteers of non-profit organizations, citizens, and other stakeholders who choose to participate will become part of our overall Lewis County Multi-Jurisdictional Hazard Mitigation Planning Committee. To keep meeting sizes to workable numbers, the Planning Committee will be broken up into a Core Planning Group (CPG) and Jurisdictional Assessment Teams (JATs).

The CPG will include representatives of Lewis County and any of the county's jurisdictions who choose to participate in the process. The CPG will oversee the overall plan formulation activities and contribute to the decision making process. The CPG will coordinate the plan efforts by organizing outreach by means of a team concept through the JATs.

The JATs will include representatives from the individual participating jurisdictions. It will be responsible for local community involvement in the multi-jurisdictional mitigation plan.

Regardless of team, all participating jurisdictions must:

- Coordinate and facilitate local efforts.
- Attend meetings.
- Provide information and feedback.
- Involve the public and community stakeholders in the planning process.
- Assess mitigation alternatives.
- Select a course of action to be followed for their communities.
- Plan implementation, monitoring and updates.

PROCESS

- Research a full range of natural hazards.
- Identify subset of significant hazards; these will be the focus of the plan.
- Identify location and extent of hazard areas.
- Identify assets located within hazard areas.
- Characterize existing and potential future assets at risk.
- Assess vulnerabilities to the identified hazards.
- Evaluate and prioritize goals, objectives, and hazard mitigation actions.
- Implement the Plan and monitor its progress.

SCHEDULE

The mitigation plan development process will occur over approximately one year, beginning in Spring 2009. A Draft Plan is targeted for completion in December of 2009.

OUR WEBSITE

A Multi-Jurisdictional Hazard Mitigation Planning Page is currently under development on the County's web site. We encourage you to check back for additional information and updates at: www.lewiscountyny.org.

FOR MORE INFORMATION

Thank you for your interest! For questions or other feedback, please contact:

James Martin, Director
Lewis County
Fire & Emergency Management
Phone: 315-376-5234
E-mail: jmartin@lewiscountyny.org

Statement of Authority - Participating

Lewis County Multi-Jurisdictional Natural Hazard Mitigation Plan

Lead Agency: Lewis County Fire and Emergency Management
5252 Outer Stowe Street
P.O. Box 233
Lowville, New York 13367
Contact: James Martin, Director

This document is prepared as a statement of the authority advising Lewis County Office of Fire and Emergency Management that the Town of Denmark **has opted to participate** in development of the Lewis County Multi-Jurisdictional Natural Hazard Mitigation Plan. Our municipality has committed to participating in development of a county-wide, multi-jurisdictional natural hazard mitigation plan. We have authorized the following two individuals: Patrick Mahar and _____ ("Representative" and "Alternate", respectively) as local members serving on the Multi-Jurisdictional Core Planning Group and to actively participate as requested throughout the planning process.

We understand that our entity will be required to name its own local hazard mitigation planning committee ("Jurisdictional Assessment Team") if it has not already done so. The Local Emergency Planning Committee may be able to serve in this capacity.

At the end of the project, it is understood that our entity will need to pass a resolution formally adopting the final plan if they are in agreement with said plan and wish to apply for future funding for mitigation projects. This resolution will be provided immediately to Lewis County Fire and Emergency Management for submittal to FEMA, who requires the resolution on file.

Name of Entity Town of Denmark

Name & Title of Authorizing Individual Thomas W. Fleming - Town Supervisor

Authorizing Signature and Date Thomas W. Fleming 6/8/09

Representative's Name & Title PATRICK F. MAHAR Highway Superintendent

Representative's Address 3707 Roberts Rd Carthage NY 13619

Representative's Phone, Fax and Email 315-493-3846 ext 2 315-493-4809 Denmark Highway Super @ Yahoo.com

Alternate's Name & Title _____

Alternate's Address _____

Alternate's Phone, Fax and Email _____

Lewis County
Multi-Jurisdictional
Hazard Mitigation Planning Project

LAND USES AND DEVELOPMENT TRENDS QUESTIONNAIRE

Part of the plan development process involves an evaluation of land uses and development trends within each participating jurisdiction. This look into the future is important because development in hazard areas could put more assets at risk and, in turn, could work to increase potential disaster-related damages at a time when the mitigation plan's purpose is to reduce the potential for damages emanating from natural disasters.

The URS Team will be describing existing land use based on a review of Lewis County GIS-based land use maps. Plan sections regarding future development trends will also incorporate relevant information contained in the latest Cross Acceptance Reports for the County and each municipality.

We would appreciate your feedback at this juncture to supplement our broader efforts with more specific information about your municipality. Please answer the questions on the attached pages, and return to URS by email, US mail, or fax, no later than August 14, 2009.

Richard Franks / Anna Foley
URS Corporation
201 Willowbrook Boulevard, 3rd Floor
Wayne, New Jersey 07470-7005
Phone: 973-785-0700 ext. 449 (RF) ext 339 (AF)
Fax: 973-812-0985
Email: richard_franks@urscorp.com anna_foley@urscorp.com

Thank you, in advance! If you have questions, please reach out to us at any time.

Suggestion: Your municipal planner (or planning board) may be of great assistance to you in completing this questionnaire.

Name: _____

Title/Department: _____

Jurisdiction You Are Representing: _____

Email Address: _____

1. **In the space below, please describe significant development trends that are occurring within your jurisdiction, such as the predominant types of development occurring, location, expected intensity, and pace by land use. While some degree of detail is preferred, it is also ok if your feedback is qualitative and quite general, such as: "***high-occupancy, high-density residential development is occurring near the waterfront***" ...or... "***single family residential development is occurring in presently undeveloped woodland areas outside of the city center***" ...or... "***retirement housing is being constructed on lands that were previously used for farming***".**

Name: _____

Title/Department: _____

Jurisdiction You Are Representing: _____

Email Address: _____

2. **Does your jurisdiction enforce regulations/ordinances/codes to protect new development from the effects of natural hazards? (Some examples might be floodplain management ordinances enforcing FEMA's NFIP for new development or substantial improvements in the floodplain; steep slope ordinances for communities which may have landslide hazards; earthquake resistant design criteria and/or high wind design criteria; or buffer zones in wildfire hazard areas.) If so, please list/briefly describe.**

Lewis County

Multi-Jurisdictional

Hazard Mitigation Planning Project

CAPABILITY ASSESSMENT QUESTIONNAIRE

Performing a Capability Assessment is one step of preparing a hazard mitigation plan. A mitigation planning Capability Assessment consists of taking an in-depth look at community mechanisms (such as plans, codes, ordinances, staffing, etc.) that can affect hazard mitigation activities in a jurisdiction. Sometimes, these mechanisms are found to contribute to mitigation in a positive way - things that will *facilitate* mitigation actions. On the contrary, other mechanisms are sometimes found to have the opposite effect – things that can *hinder* the effective or efficient pursuit of mitigation actions (such as outdated policies, insufficient annual budgets, lack of an appropriate department or program, insufficient staffing, lack of appropriate legal authority, or 'red tape').

Performing the Capability Assessment is useful for two main reasons:

1. It provides information that can be used to develop an approach for Plan Integration (the step of identifying how the plan, once it is adopted, will tie into existing plans, policies, procedures, etc).
2. It documents information that will be useful for jurisdictions in developing an implementation strategy for selected hazard mitigation actions (that is, defining who in the jurisdiction will take the lead on moving forward with the mitigation action).

While sounding like an ominous task, FEMA has put together a Capability Assessment Questionnaire (attached here, from their Mitigation Planning How-To Guide #3, Worksheet #3, Job Aid #2) which for the most part, requires a series of 'yes' or 'no' responses. The Capability Assessment Questionnaire walks the preparer through a process of documenting community agencies/departments/organizations and their missions, functions, programs, plans, policies, regulations, funding, etc. of each group, in order to create an inventory of resources that can be brought to bear on mitigation efforts. It also helps preparers identify the regulatory, administrative, technical, and fiscal capacities and capabilities of each entity. In the plan, URS will summarize capabilities at the State and Federal levels. We will also incorporate into that assessment any feedback submitted by local jurisdictions who return their completed Capability Assessment Questionnaires.

If you have questions or need help completing the forms, please let us know. We will also set aside some time at a future meeting to assist you.

Please return completed questionnaires to us by November 6th, 2009 so that we will have time to incorporate all of your information into the plan. You can submit your response by email, US mail, or fax, to:

James Martin / Sarah Bullock
Lewis County Fire and Emergency Management
Public Safety Building
5252 Outer Stowe Street
Lowville, NY 13367
Phone: 315 376 5305
Fax: 315 376 5293
Email: sbullock@lewiscountyny.org jmartin@lewiscountyny.org

Suggestion: *The other members of your Jurisdictional Assessment Team may be of great assistance to you in completing this questionnaire. You may wish to complete this questionnaire as a group during a meeting.*

FEMA How-To #3, Worksheet #3: Local Mitigation Capability Assessment

On the following page, list the name of the agency and its mission in the first column. By identifying the missions and functions, as well as programs, plans, policies, regulations, funding and other practices administered by that agency, local and tribal jurisdictions create an inventory of resources that can be brought to bear on mitigation efforts within the community or tribe.

List any programs, plans, policies, etc., this agency has in the second column. It is important to include within this column any legal authorities (which can be found by reviewing the state capability assessment) that govern how land would be developed within hazard areas. Typically, these types of regulations are found in local zoning, building, subdivision, and other special land development codes (such as floodplain management ordinances, hillside ordinances, etc.). You should also take the opportunity to include any resources that this organization has developed for local use as part of each respective program. Include any appropriate legal citations or source references for programs, regulations, policies, etc.

If you know a point of contact, list it in the third column.

Check off whether the programs, plans, policies, etc., have an effect on loss reduction. Communities and tribes should now evaluate the effects or implications of these activities on efforts to reduce losses within the jurisdiction (fourth column). The essential questions to be answered are: Does/would this program/plan/policy, etc., support or facilitate mitigation efforts, or does/would it hinder these efforts? How or why? Put these reasons in the Comments column. At this point, you will not try to resolve any issues (such as if a particular program or policy could negatively affect proposed mitigation efforts), but the planning team will carry this information forward as input into the evaluation of specific actions in later phases of the process.

Finally, add any other comments you may have about the agency or its activities in the last column.

FEMA How-To #3, Worksheet Job Aid #2: Local Hazard Mitigation Capabilities

This job aid will assist the planning team in identifying the various capabilities and capacities in your jurisdiction.

Legal authority and administrative, technical, and fiscal capabilities and capacities in local jurisdictions vary greatly. It is important to recognize the capabilities and limitations of each jurisdiction in the plan.

Section 1: Legal and Regulatory Capability

The following section encourages the planning team to think about the legal authorities available to your community and/or enabling legislation at the state level affecting all types of planning and land management tools that can support local hazard mitigation planning efforts in your community.

The following planning and land management tools are typically used by states and local and tribal jurisdictions to implement hazard mitigation activities. Which of the following does your jurisdiction have? If the jurisdiction does not have this capability or authority, does another entity/jurisdiction have this authority at a higher level of government (county, parish, or regional political entity), or does the state prohibit the local jurisdictions from having this authority?

Name:_____ Title/Dept.:_____ Jurisdiction:_____ Email:_____

Agency/Department Name and Mission/Function	Programs, Plans, Policies, Regulations, Funding, or Practices	Point of Contact Name, Address, Phone, Email	Effect on Loss Reduction*		Comments
			Facilitate	Hinder	

***Definitions:** **Facilitate:** Programs, plans, policies, etc. that make implementing mitigation actions easier. **Hinder:** Programs, plans, policies, etc. that pose obstacles to implementation of mitigation actions, (i.e., outdated policies, insufficient annual budgets, lack of an appropriate department or program, insufficient staffing, lack of appropriate legal authority, or red tape)

Name:_____Title/Dept.:_____Jurisdiction:_____Email:_____

Section 2: Administrative and Technical Capacity

The following section encourages the planning team to inventory existing personnel and technical resources that can be used for mitigation planning and implementation of specific mitigation actions. Think about the types of personnel employed by your jurisdiction and the public and private sector resources that may be accessed to implement hazard mitigation activities in your community.

For smaller jurisdictions with limited capacities, no local staff resources may be available for many of the categories noted below. If so, the planning team should consider public resources at the next higher level of government that may be able to provide technical assistance to the community. For example, a small town may be able to turn to county planners or engineers to support its mitigation planning efforts or a regional planning agency may be able to provide assistance. For some hazard mitigation actions, consider federal agencies that provide technical assistance, such as the U.S. Department of Agriculture (USDA) Cooperative Extension Service, which has offices in most counties. The planning team in rural communities must be creative in identifying outside resources to augment limited local capabilities. For larger or more urban jurisdictions, this inventory task may involve targeting specific staff in various departments that have the expertise and may be used to support hazard mitigation initiatives.

You will need this information when preparing your mitigation strategy (later phases of the planning process).

Identify the personnel resources responsible for activities related to hazard mitigation/loss prevention within your jurisdiction. Does your jurisdiction have:

Staff/Personnel Resources	Yes/No	If "Yes", Identify Department/Agency and Position
a. Planner(s) or engineer(s) with knowledge of land development and land management practices		
b. Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure		
c. Planners or Engineer(s) with an understanding of natural and/or human-caused hazards		
d. Floodplain manager		
e. Surveyors		
f. Staff with education or expertise to assess the community's vulnerability to hazards		

Regulatory Tools (ordinances, codes, plans)	Local Authority (Y/N)	Does State Prohibit? (Y/N)	Higher Level Jurisdiction Authority (Y/N)	Comments
a. Building code				
b. Zoning ordinance				
c. Subdivision ordinance or regulations				
d. Special purpose ordinances (floodplain management, stormwater management, hillside or steep slope ordinances, wildfire ordinances, hazard setback requirements)				
e. Growth management ordinances (also called "smart growth" or anti-sprawl programs)				
f. Site plan review requirements				
g. General, comprehensive or master plan				
h. A capital improvements plan				
i. An economic development plan				
j. An emergency response plan				
k. A post-disaster recovery plan				
l. A post-disaster recovery ordinance				
m. Real estate disclosure requirements				
n. Other				

Name:_____Title/Dept.:_____Jurisdiction:_____Email:_____		
g. Personnel skilled in GIS and/or HAZUS		
h. Scientists familiar with the hazards of the community		
i. Emergency manager		
j. Grant writers		

Section 3. Fiscal Capability

Identify whether your jurisdiction has access to or is eligible to use the following financial resources for hazard mitigation.

Financial Resources	Accessible or Eligible to Use (Yes/No/Don't Know)
a. Community Development Block Grants (CDBG)	
b. Capital improvements project funding	
c. Authority to levy taxes for specific purposes	
d. Fees for water, sewer, gas, or electric service	
e. Impact fees for homebuyers or developers for new developments/homes	
f. Incur debt through general obligation bonds	
g. Incur debt through special tax and revenue bonds	
h. Incur debt through private activity bonds	
i. Withhold spending in hazard-prone areas	
j. Other	

Lewis County, New York
Multi-Jurisdictional Hazard Mitigation Plan
HAZARD IDENTIFICATION QUESTIONNAIRE

IDENTIFICATION OF POTENTIAL HAZARDS

The first step in completing a multi-jurisdictional risk assessment for Lewis County is to answer the question: *what kinds of natural hazards can affect the planning area?* In completing this step we must simply identify all the natural hazards that might affect your communities, and then narrow the list down to those hazards that are most likely to have significant impacts. Further research and analysis will then be focused on those hazards identified as significant, while the other hazards will be eliminated from further consideration in the risk assessment and mitigation planning process.

FEMA's current regulations and interim guidance under the Disaster Mitigation Act of 2000 (DMA 2000) require, at a minimum, an evaluation of a full range of natural hazards. To receive a 'satisfactory' score for this element, the plan must indicate:

- which hazards were initially considered
- which hazards *were* identified as significant hazards to be addressed in the plan (and why)
- which hazards *were not* identified as significant hazards to be addressed in the plan (and why not)

FEMA Planning Requirement

44 CFR Part 201.6(c)(2)(i): [The risk assessment shall include] a description of the type... of all natural hazards that can affect the jurisdiction.

Our consultants at URS have considered a full range of natural hazards, and have identified several as significant hazards that are recommended to be addressed in the Multi-Jurisdictional Hazard Mitigation Plan. These hazards were identified through an extensive process that involved research of past disaster declarations in the County; review of the New York State Hazard Mitigation Plan; and an evaluation of readily available online information from reputable sources (such as Federal and state agencies) to supplement information from these key sources. The following table documents this evaluation process for the full range of hazards considered. For each hazard considered, the table indicates whether or not the hazard was identified as a significant hazard to be addressed in the plan, how this determination was made (i.e. the sources of information that were consulted while researching each hazard), and why this determination was made. *(Please note that some hazards not currently identified as significant may be reconsidered during future plan updates and possibly included in subsequent versions of the plan.)* For your convenience, brief definitions of each hazard are listed on pages 16 through 18.

The hazard identification process is not complete without your feedback. Please take a moment to review this table and fill in the "Core Planning Group Member Feedback" column. Do you concur with the determination? We are also interested in anything that may come to mind regarding: (a) historic events, including the date, number of injuries, and types (and/or dollar amounts) of damages to buildings, utilities, infrastructure and, especially, critical facilities; and (b) any areas of town and/or specific facilities that you feel are particularly at risk, even if there are no historic occurrences. *(Note: There is no need to re-submit this information if you have already provided it).*

Please provide feedback using the following table and return to Lewis County by email, US mail, or fax, no later than **September 18, 2009**. Please make sure to provide your contact information on page 2, and feel free to attach additional pages if needed. *Thank you in advance for your participation!*

James Martin / Sarah Bullock
Lewis County Fire and Emergency Management
Public Safety Building
5252 Outer Stowe Street
Lowville, NY 13367
Phone: 315 376 5305
Fax: 315 376 5293
Email: jmartin@lewiscountyny.org sbullock@lewiscountyny.org

CONTACT INFORMATION

Name: _____

Title/Agency: _____

Jurisdiction You Are Representing: _____

Phone: _____

E-mail: _____

Natural Hazards Considered	Was this hazard identified as a significant hazard to be addressed in the plan at this time? (Yes or No)	Which sources of information were used to make this determination?	Why was this determination made?	Core Planning Group Member Feedback • *Do you concur? If no, please explain* • *Any historic events? If so, when? What were the damages?* • *Any localized areas and/or specific facilities particularly at risk?*
ATMOSPHERIC HAZARDS				
Avalanche	NO	• Review of US Forest Service National Avalanche Center web site • Review of NY State Hazard Mitigation Plan • Review of FEMA's Multi-Hazard Identification and Risk Assessment	• Avalanches are not included in the State Hazard Mitigation Plan, and are not discussed for New York on the US Forest Service Avalanche Center web site. • While avalanches are not unknown in northern New York State, the topography and climate in Lewis County do not support conditions required for the occurrence of significant avalanches.	
Extreme Temperatures	**YES**	• Review of NY State Hazard Mitigation Plan • Review of NOAA National Climatic Data Center (NCDC) Database • Review of FEMA's Multi-Hazard Identification and Risk Assessment (MHIRA) • Lewis County HAZNY • Lewis County Planning Group (Anticipated)	• Extreme heat events are mentioned in the State Plan as a discrete hazard. Extreme cold is mentioned in the context of winter storms. • The State Plan does not record any significant instances of extreme heat since June 1994 that have specifically affected Lewis County. • According to the State plan, almost 20% of the population of Lewis County are vulnerable to extreme heat events (i.e. under 5 years of age or over 65), ranking Lewis County 25th out of 62 counties in the State. • NCDC reports three significant extreme temperature events for areas including Lewis County between February 1993 and March	

Natural Hazards Considered	Was this hazard identified as a significant hazard to be addressed in the plan at this time? (Yes or No)	Which sources of information were used to make this determination?	Why was this determination made?	Core Planning Group Member Feedback • *Do you concur? If no, please explain* • *Any historic events? If so, when? What were the damages?* • *Any localized areas and/or specific facilities particularly at risk?*
			2009 (including one extreme winter cold event and two unseasonably warm events). While $50,000 in property damages were attributed to the extreme cold event in the overall region, these events these events are recorded as having caused no deaths, injuries, property damage or crop damages specifically recorded in Lewis County. • According to US Department of Commerce data reproduced in FEMA's MHIRA guidance, there is a 5% chance that summer temperatures will exceed 105° – 110° in any given year. This is consistent with most of the rest of the State, except for some counties in the extreme east of the State, which can expect to experience slightly higher temperatures. • Extreme temperatures were not specifically considered in the Lewis County HAZNY study.	
Extreme Wind	**YES**	• Review of NY State Hazard Mitigation Plan • Review of FEMA's MHIRA • Review of NOAA NCDC Storm Events Database • Review of American Society of Civil Engineers (ASCE) Standard 7-02 (Minimum Design Loads for Buildings and Other Structures) • Review of Wind Zones in the United States as per FEMA Publication 320 – Taking Shelter From the Storm • Lewis County HAZNY	• Extreme wind events are included in the State Plan in the context of hurricane and tornado events. • The State Plan ranks Lewis County as last out of all 62 counties in the state for the threat of extreme wind and vulnerability to extreme wind losses, mainly due to the comparatively small number of structures in the County. • Lewis County is located in a climate region that is susceptible to several types of extreme wind events including straight line winds and severe thunderstorms. • According to FEMA-320, Lewis County is located in a wind zone where extreme wind speeds of 160mph are possible. • NCDC reports 106 high wind events (wind speed > 50 knots/58 mph) for Lewis County since June 1966, of which 88 have been recorded since 1990, when detailed records	

Natural Hazards Considered	Was this hazard identified as a significant hazard to be addressed in the plan at this time? (Yes or No)	Which sources of information were used to make this determination?	Why was this determination made?	Core Planning Group Member Feedback • *Do you concur? If no, please explain* • *Any historic events? If so, when? What were the damages?* • *Any localized areas and/or specific facilities particularly at risk?*
		• Lewis County Planning Group (Anticipated)	begin. These events have most often been associated with thunderstorms, and have caused more than $40 million in property damage and $400,000 crop damages in the affected area including Lewis County. Extreme wind events are recorded by NCDC as directly causing one death in Lewis County since 1966. • The 3 second wind gust for Lewis County for building design purposes as per ASCE 7-02 is between 90 and 95 mph. • Extreme winds were not specifically considered in the Lewis County HAZNY study.	
Hailstorm	NO	• Review of NY State Hazard Mitigation Plan • Review of FEMA's Multi-Hazard Identification and Risk Assessment • Review of NOAA NCDC Storm Events Database and NOAA NSSL website • Lewis County HAZNY • Lewis County Planning Group (Anticipated)	• The state plan includes hailstorms as a discrete hazard. • NCDC reports 13 severe hailstorm events (at least 3/4 inch diameter hail or greater) for Lewis County between June 1969 and March 2009. Four of these events produced hailstones of one inch diameter or larger. For all these events there are approximately $100,000 recorded total property damages, but no recorded crop damages, deaths or injuries in Lewis County. When annualized, these damages amount to only $2,500 per year across the whole county. • According to NSSL data, Lewis County is located in a part of the USA with the lowest annual number of days with hailstorms (less than one), and where the annual average number of damaging hail events is less than 0.25. • There are few hazard mitigation techniques available to reduce hailstorm impacts to property, outside of the emergency preparedness procedures and severe weather warning systems already in place (i.e. mass public notifications that recommend immediate	

Natural Hazards Considered	Was this hazard identified as a significant hazard to be addressed in the plan at this time? (Yes or No)	Which sources of information were used to make this determination?	Why was this determination made?	Core Planning Group Member Feedback • *Do you concur? If no, please explain* • *Any historic events? If so, when? What were the damages?* • *Any localized areas and/or specific facilities particularly at risk?*
			protective actions). There are no essentially no practicable hail mitigation measures for crops, which often incur by greater hail damages than structures or other property. • Hailstorms were not specifically addressed in the Lewis County HAZNY study.	
Hurricane and Tropical Storm	No	• Review of NY State Hazard Mitigation Plan • Analysis of NOAA historical tropical cyclone tracks • Review of NOAA National Hurricane Center website • Review of NOAA NCDC Storm Events Database and National Hurricane Center web site • Review of FEMA's Multi-Hazard Identification and Risk Assessment • Lewis County HAZNY • Lewis County Planning Group (Anticipated)	• Hurricane and tropical storm events are discussed in the State Plan, which includes FEMA mapping showing Lewis County located outside the area of New York State considered to be hurricane-prone. • NOAA historical data records the tracks of 18 tropical or former tropical storms that have passed within 100 nautical miles of the approximate center of Lewis County since 1876. Of these 18 storms, none have been classed as full hurricanes of any category, five have been classed as tropical storms, two have been tropical depressions, and 11 have been classed as extratropical, meaning that by the time an advisory was issued for the Lewis County area, these formerly tropical storms had lost their tropical characteristics including their energy source. • None of the 18 storm tracks recorded by NOAA passed directly over any portion of Lewis County. • The most recent of the recorded events to pass close to Lewis County was Extratropical Storm Frances, the center of which passed through Jefferson and St. Lawrence Counties in September 2004. Only two other storms have been recorded passing within comparable distances of Lewis County; Extratropical Storm Dennis in September 1999, and an unnamed tropical storm in August 1933. • NCDC does not report any hurricane/tropical	

Natural Hazards Considered	Was this hazard identified as a significant hazard to be addressed in the plan at this time? (Yes or No)	Which sources of information were used to make this determination?	Why was this determination made?	Core Planning Group Member Feedback • *Do you concur? If no, please explain* • *Any historic events? If so, when? What were the damages?* • *Any localized areas and/or specific facilities particularly at risk?*
			storm events directly affecting Lewis County between January 1950 and March 2009 • Hurricanes and tropical storms were not specifically considered in the Lewis County HAZNY study, although "Severe Storms" were placed 10th (moderately low risk) out of the 15 hazards considered in the Lewis County HAZNY study.	
Lightning	No	• Review of NY State Hazard Mitigation Plan • Review of NOAA NCDC Storm Events Database, NOAA lightning statistics, and National Severe Storms Laboratory (NSSL) web site • Review of FEMA's Multi-Hazard Identification and Risk Assessment • Lewis County HAZNY • Lewis County Planning Group (Anticipated)	• Lightning is not considered as a discrete hazard in the State Plan or in the Lewis County HAZNY. • According to NOAA and FEMA data, Lewis County is located in an area of the country that experiences an average of only two to five lightning flashes per square mile per year. For comparison, large areas of the USA experience more than 25 lightning flashes per square mile annually. • NOAA records that New York State has experienced the fourth most deaths and third most damages from lightning in the United States from 1959 to 1994. • NCDC reports no significant lightning events for Lewis County between 1950 and March 2009.	
Nor'easter	No	• Review of NY State Hazard Mitigation Plan • Review of NOAA NCDC Storm Events Database • Review of FEMA's Multi-Hazard Identification and Risk Assessment • Lewis County HAZNY • Lewis County Planning Group (Anticipated)	• Nor'easters are not considered as a discrete hazard in the State Plan, but are mentioned as a common cause of flooding and snowstorms, particularly in the south eastern part of New York State. • While the southeastern parts of New York State commonly experience all the potential effects of nor'easters (heavy rain, riverine and coastal flooding, storm surges, heavy surf/waves, coastal erosion, and heavy snowfall), readily available information indicates that Lewis County has only occasionally been affected by	

Natural Hazards Considered	Was this hazard identified as a significant hazard to be addressed in the plan at this time? (Yes or No)	Which sources of information were used to make this determination?	Why was this determination made?	Core Planning Group Member Feedback • *Do you concur? If no, please explain* • *Any historic events? If so, when? What were the damages?* • *Any localized areas and/or specific facilities particularly at risk?*
			heavy snowfalls attributable to nor'easters. For further consideration of heavy snowfall, see *Winter Storm*. • Nor'easters were not considered as a specific hazard in the Lewis County HAZNY.	
Tornado	**YES**	• Review of NY State Hazard Mitigation Plan • Review of NOAA NCDC Storm Events Database and National Severe Storms Laboratory (NSSL) web site • Review of FEMA's Multi-Hazard Identification and Risk Assessment • Lewis County HAZNY • Lewis County Planning Group (Anticipated)	• The State Plan acknowledges that all of New York State has a definite vulnerability to tornadoes, with a statewide average annual occurrence of 6 tornadoes per year since 1950. • NCDC reports four tornado events in Lewis County between July 1969 and June 2008. These events have resulted in no recorded deaths or injuries but have caused $95,000 in property damage. Of the four recorded events, two were of magnitude F1 (moderate damage) on the Fujita scale and two were F0 (light damage). • NSSL tornado probability data indicate that while Lewis County is in an area that experiences 0 to 0.2 tornado events per year, life-threatening and damaging tornado events remain a possibility. • Tornados were not specifically considered in the Lewis County HAZNY study.	
Winter Storm	**YES**	• Review of NY State Hazard Mitigation Plan • Review of FEMA's Multi-Hazard Identification and Risk Assessment (MHIRA) • Review of NOAA NCDC Storm Events Database • New York State Climate Office web site • Lewis County HAZNY • Lewis County Planning Group (Anticipated)	• Winter storms including heavy snow and ice storms are discussed in the State Plan, which notes that Lewis County is one of the three counties in the State receiving the heaviest annual snowfall, with an average of 158 inches per year, . The statewide average is 65 inches, with 60% of the state experiencing at least 70 inches annually. • The State plan ranks Lewis County 25th out of 62 counties in the state for most threatened by snow and vulnerable to snow losses, based on a combined assessment of annual and extreme snowfall, snow-related disasters, and estimated	

Natural Hazards Considered	Was this hazard identified as a significant hazard to be addressed in the plan at this time? (Yes or No)	Which sources of information were used to make this determination?	Why was this determination made?	Core Planning Group Member Feedback • *Do you concur? If no, please explain* • *Any historic events? If so, when? What were the damages?* • *Any localized areas and/or specific facilities particularly at risk?*
			numbers of structures in each county. The plan also ranks Lewis County 35th out of 62 for most vulnerable to ice storms and ice storm losses, based on a combined assessment of ice storm occurrences and numbers of structures. • FEMA's MHIRA guidance indicates that Lewis County experiences an average of 15-18 hours of freezing rain per year, with only a few isolated areas in Maine, Massachusetts and elsewhere in New York State experiencing more per year in the contiguous United States. • NCDC reports that Lewis County has been affected by 129 significant snow and ice events between January 1993 and March 2009. More than $92 million in property damages are attributed to these events, including some damages occurring outside Lewis County. • FEMA and NYSEMO records show that Lewis County has been specifically included in two snow-related disaster declarations, two ice storm disaster declarations, and four snow-related emergency declarations since 1977. • Ice storms/severe winter storms were placed 5th and 6th respectively (moderately high risk) out of the 15 hazards in the Lewis County HAZNY study. Of the natural hazards in the study, only floods and fire were ranked higher.	
HYDROLOGIC HAZARDS				
Coastal Erosion	NO	• Review of NY State Hazard Mitigation Plan • Review of FEMA's Multi-Hazard Identification and Risk Assessment	• While coastal erosion is identified as a hazard and discussed in the State plan, it does not apply to Lewis County since the county has no ocean or great lakes coastline.	
Dam Failure	**YES**	• Review of NY State Hazard Mitigation Plan • Review of New York	• Dam Failure is briefly discussed in the State Plan as a potential cause of flooding. • The NYSDEC database records 109 dams in	

Natural Hazards Considered	Was this hazard identified as a significant hazard to be addressed in the plan at this time? (Yes or No)	Which sources of information were used to make this determination?	Why was this determination made?	Core Planning Group Member Feedback • *Do you concur? If no, please explain* • *Any historic events? If so, when? What were the damages?* • *Any localized areas and/or specific facilities particularly at risk?*
		State Department of Environmental Conservation (NYSDEC) Bureau of Flood Protection and Dam Safety database • Review of Stanford University's National Performance of Dams Program (NPDP) database • Review of FEMA's Multi-Hazard Identification and Risk Assessment • Lewis County HAZNY • Lewis County Planning Group (Anticipated)	Lewis County, of which five are classified as having "High" hazard potential, nine with "Moderate" hazard potential, and the remainder with "Low" or "None. • According to USGS criteria, there are five "Major" dams in the County, by virtue of having a dam height of more than 50 feet or a normal storage volume of more than 5,000 acre-feet. Of these, two are "High" hazard dams, two are "Moderate" and one "Low" hazard potential. • Only one of the "Major" dams in the County meets both the dam height and normal storage criteria – the Soft Maple Terminal Dam in the Town of Croghan, which is classified as "Moderate" hazard by NYSDEC. • The NPDP database records 13 dam incidents involving failure, misoperation or flooding related to dams in Lewis County since detailed records began in 1868. • Dam failure was placed 12th (moderately low risk) out of the 15 hazards considered in the Lewis County HAZNY study.	
Drought	**YES**	• Review of NY State Hazard Mitigation Plan • Review of FEMA's Multi-Hazard Identification and Risk Assessment • Review of NOAA NCDC Database • Review of National Drought Mitigation Center /NOAA web sites • US Department of Agriculture National Agricultural Statistics	• Drought is discussed in the State Plan, which lists Lewis County as being in NYSDEC Drought Management Region V (Adirondack). • While droughts may have widespread social and economic effects, for the purposes of this plan the primary impacts of drought are assumed to fall on agriculture, which is economically significant in Lewis County: According to the USDA Agricultural Census of 2007, there are 616 farms in the County, covering more than 167,000 acres, or approximately 20% of the County land area. The market value of agricultural products sold in 2007 was more than $112 million, of which	

Natural Hazards Considered	Was this hazard identified as a significant hazard to be addressed in the plan at this time? (Yes or No)	Which sources of information were used to make this determination?	Why was this determination made?	Core Planning Group Member Feedback • *Do you concur? If no, please explain* • *Any historic events? If so, when? What were the damages?* • *Any localized areas and/or specific facilities particularly at risk?*
		Survey: 2007 Census of Agriculture • Lewis County HAZNY • Lewis County Planning Group (Anticipated)	almost $7 million came from crop sales. • NCDC records one significant drought having some impact on Lewis County, this event took place in the summer and fall of 1993 and is recorded as having caused $50 million in crop damages across eastern New York State. • According to the Palmer Drought Severity Index (PDSI) Map for the USA, Lewis County is located in an area that experienced drought conditions for less than 5% of the period 1895 to 1995. • Droughts were placed 14th (low risk) out of the 15 hazards considered in the Lewis County HAZNY study.	
Flood	**YES**	• Review of NY State Hazard Mitigation Plan • Review of NOAA NCDC Storm Events Database • Review of FEMA's Multi-Hazard Identification and Risk Assessment • Review of FEMA's National Flood Insurance (NFIP) Community Status Book and Community Rating System (CRS) • Review of FEMA Flood Insurance Rate Maps (FIRMs) for Lewis County municipalities participating in the NFIP • Lewis County HAZNY • Lewis County Planning Group (Anticipated)	• Flooding is described in the State Plan as the primary natural hazard in the State of New York and is discussed in comprehensive detail. • Of the seven Federal disaster declarations covering Lewis County since 1985, four have been triggered by flooding. • NCDC records 21 flood events affecting Lewis County since April 1994. More than $4 million in damages was attributed to these events. • A review of digitized Lewis County FIRMs overlaid on aerial photographs of the County indicate that there are structures located in the 1% annual chance ("100-year") floodplain in more than of half the municipalities in Lewis County. • All except one of the 26 municipalities covered by this plan participate in the NFIP but none participate in the CRS, which provides discounted flood insurance premiums for communities choosing to implement floodplain management measures over and above the statutory minimum. • Floods were placed 3rd (moderately high risk)	

Natural Hazards Considered	Was this hazard identified as a significant hazard to be addressed in the plan at this time? (Yes or No)	Which sources of information were used to make this determination?	Why was this determination made?	Core Planning Group Member Feedback • *Do you concur? If no, please explain* • *Any historic events? If so, when? What were the damages?* • *Any localized areas and/or specific facilities particularly at risk?*
			out of the 15 hazards considered in the Lewis County HAZNY study, and were the highest ranked natural hazard.	
Ice Jams	**YES**	• Review of NY State Hazard Mitigation Plan • Review of FEMA's Multi-Hazard Identification and Risk Assessment • USACE Cold Regions Research & Engineering Laboratory (CRREL) Ice Jams Database • Lewis County HAZNY • Lewis County Planning Group (Anticipated)	• Ice jams are mentioned as a significant cause of flooding in the State Plan – New York State has experienced more ice jam events than any other U.S. state except Montana in the period 1867 through 2007. • The USACE CRREL Ice Jams database records more than 30 ice jam incidents in on all watercourses in Lewis County from 1875 to 2007. While no damages are recorded by CRREL for these incidents, ice jams occur fairly regularly in Lewis County and have the potential to cause flooding and other concerns such as damage to bridges and river control structures. The NCDC data for flood events records one additional event during which significant flooding was caused by an ice jam. • Ice jams were placed 13th (moderately low risk) out of the 15 hazards considered in the Lewis County HAZNY study.	
Storm Surge	NO	• Review of NY State Hazard Mitigation Plan • Review of FEMA's Multi-Hazard Identification and Risk Assessment	• While storm surge is discussed in the State Plan in the flood hazard and hurricane/tropical storm hazard profiles, storm surges are considered a coastal phenomenon. Since Lewis County is located more than 200 miles from the nearest ocean coastline, and between 20 and 50 miles from the shore of Lake Ontario, they are not regarded as a hazard for the purposes of this plan.	
Wave Action	NO	• Review of NY State Hazard Mitigation Plan • Review of FEMA's Multi-Hazard Identification and Risk Assessment	• While waves are discussed in the state plan under flood hazard, damage-causing waves are considered to be a coastal phenomenon. Since Lewis County is located more than 200 miles from the nearest ocean coastline and between 20 and 50 miles from the shore of Lake	

Natural Hazards Considered	Was this hazard identified as a significant hazard to be addressed in the plan at this time? (Yes or No)	Which sources of information were used to make this determination?	Why was this determination made?	Core Planning Group Member Feedback • *Do you concur? If no, please explain* • *Any historic events? If so, when? What were the damages?* • *Any localized areas and/or specific facilities particularly at risk?*
			Ontario, they are not regarded as a hazard for the purposes of this plan.	
GEOLOGIC HAZARDS				
Earthquake	**YES**	• Review of NY State Hazard Mitigation Plan • Review of USGS Earthquake Hazards Program mapping and web site • Review of FEMA's Multi-Hazard Identification and Risk Assessment • Lewis County HAZNY • Lewis County Planning Group (Anticipated)	• Earthquakes are discussed in the State Plan, since numerous earthquakes have occurred in and around the State of New York in the past. • The state plan ranks Lewis County 43rd out of 62 counties for potential annualized earthquake losses but 8th out of 62 for potential annualized earthquake loss per capita. • According to USGS seismic hazard maps, the peak ground acceleration (PGA) with a 10% probability of exceedance in 50 years Lewis County is 3%-4% of gravity in the southwestern corner of the County, rising to 4%-6% of gravity in the northeastern part of the County. Current FEMA guidance requires that earthquakes be evaluated in detail for mitigation purposes in areas where a PGA of 3%g or more has a 10% probability of exceedance in 50 years. • USGS mapping records four earthquakes epicentered in Lewis County between 1638 and 1998; three of magnitude 3.0-3.9, and one of magnitude 4.0-4.9. The New York State Plan records one significant earthquake event in Lewis County in the same period, of magnitude 5.0-5.9. • USGS soil survey maps indicate that much of the developed areas of Lewis County are underlain by soil types which have the potential to amplify the effects of earthquakes. • Earthquakes were not specifically considered in the Lewis County HAZNY study.	
Expansive Soils	NO	• Review of NY State Hazard Mitigation Plan	• Expansive soils are not identified as a hazard in the State Plan.	

Natural Hazards Considered	Was this hazard identified as a significant hazard to be addressed in the plan at this time? (Yes or No)	Which sources of information were used to make this determination?	Why was this determination made?	Core Planning Group Member Feedback • *Do you concur? If no, please explain* • *Any historic events? If so, when? What were the damages?* • *Any localized areas and/or specific facilities particularly at risk?*
		• Review of FEMA's Multi-Hazard Identification and Risk Assessment • US Department of Transport Federal Highway Administration (USDOT FHA) Geological Data • Review of USDA Natural Resources Conservation Service (NRCS) Soil Websites • Lewis County HAZNY • Lewis County Planning Group (Anticipated)	• According to FEMA and USGS sources, Lewis County is located in an area where less than 50% of the underlying soils have "slight to moderate" clay swelling potential. No examples of risk or damage to property in Lewis County due to soil expansion have been found in the course of general research. • According to USDOT FHA Report No. FHWA-RD-76-82, Lewis County lies in an area mapped as non-expansive – i.e. the occurrence of expansive materials is extremely limited. • New York State building codes are based on the International Building Code (2000, with 2001 supplement), in which Chapter 18 includes provisions for building on expansive soils (through design, removal or stabilization) so that new construction will be protected. • Expansive soils were not specifically considered in the Lewis County HAZNY study.	
Landslide	**YES**	• Review of NY State Hazard Mitigation Plan • Review of USGS Landslide Incidence and Susceptibility Hazard Map • Review of New York State Geological Survey (NYSGS) inventory of historic landslides in New York • Review of FEMA's Multi-Hazard Identification and Risk Assessment • Lewis County HAZNY • Lewis County Planning Group (Anticipated)	• Landslides are discussed in the State Plan, which records seven significant landslide events in Lewis County between 1837 and 1989. Only 16 out of the 62 counties in the State have recorded more landslides in the same period. • Additionally, the Landslide Inventory Map of New York State obtained from NYSGS identifies an area along the Independence River valley, extending slightly into the Black River valley, as an "Area of slumping and landslides where individual slides are too numerous to map". • All seven landslides recorded by the State Plan in Lewis County were "natural earth slump" events. None were recorded as having caused any fatalities. • USGS landslide hazard maps indicate the Lewis County area is identified as being of "Low	

Natural Hazards Considered	Was this hazard identified as a significant hazard to be addressed in the plan at this time? (Yes or No)	Which sources of information were used to make this determination?	Why was this determination made?	Core Planning Group Member Feedback • *Do you concur? If no, please explain* • *Any historic events? If so, when? What were the damages?* • *Any localized areas and/or specific facilities particularly at risk?*
			landslide incidence" (less than 1.5% of the area is at risk). • Landslides were not specifically considered in the Lewis County HAZNY study.	
Land Subsidence	NO	• Review of NY State Hazard Mitigation Plan • Review of FEMA's Multi-Hazard Identification and Risk Assessment • Review of USGS Fact Sheet 165-00 Land Subsidence in the U.S. • Lewis County HAZNY • Lewis County Planning Group (Anticipated)	• Land subsidence is discussed as a discrete hazard in the State Plan, which includes mapping of geological formations prone to causing subsidence, such as carbonate karst and evaporite rocks (salt or gypsum). Of these formations, only carbonate karst is present in Lewis County, primarily located along the Black River Valley. • The State Plan lists no examples of historic land subsidence occurrences in Lewis County, and none have been identified via additional general research. • USGS-165-500 indicates that Lewis County is located in an area where subsidence caused by consolidation of aquifers or drainage of organic soils is not considered to be a risk. • While there is some history of underground mining in Lewis County (for example, talc, lead, and graphite have been mined in the County), no records of mining-related subsidence risks or historical occurrences have been found. • Land subsidence was not specifically considered in the Lewis County HAZNY study.	
Tsunami	NO	• Review of NY State Hazard Mitigation Plan • Review of FEMA's Multi-Hazard Identification and Risk Assessment	• Tsunamis are not discussed in the State Plan. Since Lewis County is located more than 200 miles from the ocean, and no records exists of catastrophic Atlantic basin tsunamis impacting the mid-Atlantic coast of the USA, FEMA mitigation planning guidance suggests that locations in the eastern U.S. north of Virginia have a relatively low tsunami risk and need not conduct a tsunami risk assessment at this time.	

Natural Hazards Considered	Was this hazard identified as a significant hazard to be addressed in the plan at this time? (Yes or No)	Which sources of information were used to make this determination?	Why was this determination made?	Core Planning Group Member Feedback • *Do you concur? If no, please explain* • *Any historic events? If so, when? What were the damages?* • *Any localized areas and/or specific facilities particularly at risk?*
Volcano	NO	• Review of NY State Hazard Mitigation Plan • Review of USGS Volcano Hazards Program web site	• No volcanoes are located within approximately 2,000 miles of Lewis County.	
OTHER HAZARDS				
Wildfire	**YES**	• Review of NY State Hazard Mitigation Plan • Review of NOAA NCDC Storm Events Database • USGS National Land Cover GIS data • Review of NYSEMO and NYSDEC web sites • Review of FEMA's Multi-Hazard Identification and Risk Assessment • Lewis County HAZNY • Lewis County Planning Group (Anticipated)	• Wildfires are discussed in the State Plan as a hazard of concern, and NYSDEC notes that areas that are heavily forested or contain large tracts of brush and shrubs are particularly prone to fires. • According to USGS land cover GIS data, approximately two thirds of Lewis County is covered by wildfire-prone areas in the form of forests or shrublands (not including wooded wetlands). • Wildfire hazard risks are expected to increase as development continues in wooded areas, increasing the length of the interface between improved property and the most wildfire-prone land. Currently the length of this interface in Lewis County is slightly more than 45 miles, measured in GIS using County parcel data and USGS land cover data. • Fire in general was placed 4th (moderately high risk) out of the 15 hazards considered in the Lewis County HAZNY study. Flooding was the only natural hazard ranked higher than fire in the study.	

APPENDIX G –

MEETING AGENDAS AND PRESENTATIONS

This Appendix contains copies of the agendas, attendance records, and presentations for the key Core Planning Group meetings held on

May 21, 2009:	Planning Process Kickoff Meeting
August 17 & 18, 2009:	Information/Progress Meetings
February 9, 2010:	Risk Assessment Question and Answer Session
March 2, 2010:	Mitigation Strategy Working Session

And also:

May 4, 2010:	Meeting to Present the Draft Plan to Public and County Legislators

Lewis County Multi-Jurisdictional
Natural Hazard Mitigation Planning Project
Kickoff Meeting
May 21, 2009
1pm

Agenda

- Welcome & Opening Remarksé é é é é *James Martin, Lewis County Fire and Emergency Management*

- Overview of the Projecté é é é é .....*Richard Franks, URS*

    - Intent of the Project
        - Why Prepare a Hazard Mitigation Plan?
        - What is a Multi-Jurisdictional Plan?
        - Why Participate in a Multi-Jurisdictional Plan Development Process?
    - Organizational Structure of the Planning Group
    - Overview of the Plan Development Process
    - The Role of Participating Jurisdictions, Contractors, the Public & Other Stakeholders
    - Participation Criteria
    - Key Deliverables
    - Data Collection//Supporting Documents
    - Project Timeline
    - Next Steps

- Questions & Answersé é é é é .é é é *All*

- Closing Remarksé é é é é é é é é é ..*James Martin, Lewis County Fire and Emergency Management*

- Adjourn

Please remember to
SIGN IN
if you haven't already done so.
Thank you.

Lewis County Multi-Jurisdictional Hazard Mitigation Planning Project
Project Kickoff Meeting – Thursday May 21, 2009 (1:00 pm)
Lowville Fire Hall, 5240 Parkway, Lowville, NY

Last Name	First Name	Representing	Email Address	Phone
Liendecker	Catherine (Katie)	Village of Lyons Falls	pliendec@twcnyrr.com	348-8744
Seymour	Darrell	T/O Diana		405-1298
Hunt	Douglas	Village of Turin	northdp2@hotmail.com	778-3444
Shumbo	William	Village of Croghan	hillshumbo@twcny.rr.com	346-6874
Zehr	James	Village of Croghan	JZEHR2@TWCNY-RR.COM	346-6251
FREDENBURG	Eric	Lowville Village (PD)	laupdchief@maymail.com	376-6511
LaFave	Glenn	Hudson River - Black River Regulating District	brau@hrbrd.com	788-5476
Bullock	Sarah	Lewis Co. Planning	sbullock@lewiscountyny.org	377-2029
Martin	James	Lewis Co. Energy Mgmt.	jmartin@lewiscountyny.org	376-5234

Lewis County Multi-Jurisdictional Hazard Mitigation Planning Project
Project Kickoff Meeting – Thursday May 21, 2009 (1:00 pm)
Lowville Fire Hall, 5240 Parkway, Lowville, NY

Last Name	First Name	Representing	Email Address	Phone
Langs	Chuck	Lewis County Highway		376 5350
Manning	Kathy	T/Vs Lowville Codes	lowvillecodes@frontiernet.net	376-8070 Ext 6
HAENLIN	GERALD	NATIONAL GRID	gerald.haenlin@us.ngrid.com	785-7226
Seymour	James	V- Harrisville		543-2211
Tuttle	Mark	Lewis Co. EMS	mtuttle@lewiscountyny.gov	376-5383
Burpee	Jack	Lewis Co. Legislators		348-8033
Patterson	Marilyn	Town of Greig	mpatte@twcny.rr.com	348-8283
Wood	Al	Lowville Zoning Administration	Awood@Lowville.com	
RAYMOND	EDWARD	NYSEMO REG. IV	EDWARD.RAYMOND@SEMO.STATE.NY.US	529-0781
RICHARD	FRANKS	URS	richard_franks@urscorp.com	973 785 0733 x448

Lewis County Multi-Jurisdictional Hazard Mitigation Planning Project
Project Kickoff Meeting – Thursday May 21, 2009 (1:00 pm)
Lowville Fire Hall, 5240 Parkway, Lowville, NY

Last Name	First Name	Representing	Email Address	Phone
Mosher	Grant	Constableville		315-397-2078
Sullivan	Mark	Constableville	C-villesull@Hotmail.com	397-2578
Shaw	Warren	Town of Croghan	W B Shaw M@ Yahoo, Com	346-6722 – 778-1595
CLARKE	KENNETH	Village of Copenhagen	VCopenhagen Ocentral ny.twcbc.com	[illegible] 688-4229(311)
Hammond	Harold	Town of Croghan	10615 Jackson Ln Carthage NY 13619	493-2556
Billhardt	Nichelle	Lewis Co. Soil & Water	nbillhardt@lewiscountyny.org	315-376-6122
Taylor	Virgil	Town of Watson	V.ny.lt@citlink.NET	315-376-2389
HUNTER	Jim	Village Harrisville	ohtayjim911@yahoo.com	315-543-2832
KELLERHALS	Bill	Village of Harrisville	bkellerh@twcny.rr.com	315-543-2434
Stevens	Charles	T/V of Lowville	lowvillecodes@frontiernet.net	315-376-8070 ext.6
LEITNER	HOWARD	T of TURIN	hleitner@portstel.net	315-348-8650
BOYD	JOHN	CO. LEG		
Samson	Trevor	Port Leyden	tsamson001@twcny.rr.com	315 513-4022
Lyndaker	Loren	Town of Harrisburg	swnhpwl@gmail.com	315-376-9415
FAWCETT	ROCKY	TOWN OF LYONSDALE	RocknWoody@frontiernet.net	315 348-9991

Lewis County Multi-Jurisdictional
Natural Hazard Mitigation Planning Project

Kickoff Meeting
May 21, 2009
1:00 pm – 3:00 pm

Today's Agenda:

- Welcome & Opening Remarks…James Martin, LCFEM
- Overview of the Process…Richard Franks, URS
- Questions and Answers
- Closing Remarks…James Martin, LCFEM
- Adjourn

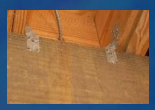
Mitigation and Mitigation Planning

- Hazard Mitigation is any sustained action taken to reduce or eliminate long-term risk to life and property from a hazard event.
- Hazard Mitigation Planning is a **process** for State, local, and Indian Tribal governments to identify policies, activities, and tools to implement mitigation actions.
- Consultants walk you through the process needed to meet FEMA requirements and author the plan.

Intent of the Project:
Why Prepare a Hazard Mitigation Plan?

- Study natural hazards,
- Evaluate hazard effects, and
- Identify hazard mitigation measures that will reduce risks.

Mitigation Measures – Some Examples



- *Elevating a house to reduce flood damages*
- *Installing hurricane clips to roofs to reduce wind damage*
- *Retrofit structures with fire-resistant materials (e.g. roofing)*
- *Modifying building codes to incorporate hazard-resistant design*

Mitigation Works!

Elevated homes in Sweet Lake, LA (near Lake Charles) after Hurricane Rita (09/24/05).

Intent of the Project: Why Prepare a Hazard Mitigation Plan?

- Mitigation planning leads to judicious selection of risk reduction actions and established funding priorities.

- Implementation of mitigation actions is intended to reduce the costs of a future disaster.

Intent of the Project: Why Prepare a Hazard Mitigation Plan?

- Costs of a disaster can often exceed available State and Federal aid.

- Damages can be prevented by taking the time to:
  - learn about hazards and anticipate where and how they occur; and
  - allocate resources accordingly.

Intent of the Project: Why Prepare a Hazard Mitigation Plan?

- Disaster Mitigation Act of 2000 requires it!
- Plan preparation is funded by a FEMA grant
- No out-of-pocket cost to local municipalities
- Once the plan is approved by FEMA, participating jurisdictions will be eligible to apply for mitigation project grants.

Some Key Points:

- Under DMA 2000:
  - Natural Hazards → Required
  - Man Made Hazards → Not Required
- URS has been asked to focus solely on natural hazards for the purposes of this planning effort.

Intent of the Project: What is a Multi-Jurisdictional Plan?

- Communities joining together to participate in a single local mitigation plan development process.
- Common:
  - Planning Process
  - Hazards
  - Goals
  - Plan Maintenance Procedures
- Unique:
  - Risks
  - Mitigation Actions
  - Participation
  - Plan Adoption

Intent of the Project: What is a Multi-Jurisdictional Plan?

- Each jurisdiction will identify its own set of mitigation actions for the plan
- No competition between municipalities

- Unique:
  - Risks
  - Mitigation Actions
  - Participation
  - Plan Adoption

Intent of the Project: What is a Multi-Jurisdictional Plan?

- Basic processes for single jurisdiction and multi-jurisdictional plans are identical.
- Difference lies in degree of complexity.

Intent of the Project: Why Participate in a Multi-Jurisdictional Plan Development Process?

- The burden on each municipality is minimal, but the cost to do a single jurisdiction plan is not.
- There are tremendous economies of scale (resources, staff hours, and $$) that are realized by coming together in a joint process.
- By participating in a multi-jurisdictional plan, your municipality will gain all the benefits of having a plan with the minimum level of effort in plan development.

Organizational Structure of the Planning Group

Jurisdictional Assessment Teams:
- For each participating jurisdiction
- Head member (plus alternate) on Core Planning Group

Planning Committee
Core Planning Group Plus Public & Other Stakeholders

Core Planning Group
County, Cities, Villages, Boroughs, Townships

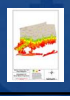
URS Team

Overview of the Plan Development Process: Key Steps

- Researching a full range of natural hazard events to determine which are the most prevalent;
- Identifying the location and extent of hazard areas;
- Identifying assets located within these hazard areas;

Overview of the Plan Development Process: Key Steps

- Characterizing existing and potential future assets at risk;
- Assessing vulnerabilities to the most prevalent hazards; and
- Evaluating and prioritizing goals, objectives, and mitigation actions to reduce or avoid long-term vulnerabilities to the most prevalent hazards.



Key Steps

- **Identification of Potential Hazards**
  - Evaluation of a full range of natural hazards
    - Hazards identified for inclusion & why
    - Hazards not identified & why not

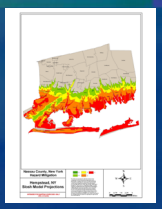
A questionnaire will be distributed to Core Planning Group Members:
Target dates: Distribution – 8/12/2009, Return 10/30/2009

What is the "full range" of hazards that we consider for possible inclusion in the plan?

- Avalanches
- Coastal Erosion
- Wave Action
- Earthquakes
- Expansive Soils
- Floods
- Storm Surge
- Dam Failure
- Ice Jams
- Landslides
- Land Subsidence
- Drought
- Extreme Temps
- Hail
- Hurricanes / Tropical Storms
- Nor'easters
- Tornadoes
- Winter Storms / Ice Storms
- Tsunamis
- Volcanoes
- Wildfires
- Extreme Winds
- Lightning

Key Steps

- **Risk Assessment**
  - Hazard Profiles
    - Description of hazard
    - Location of hazard area
    - Extent (magnitude or severity)
    - Previous occurrences
    - Probability/likelihood of future occurrences



Key Steps

- **Risk Assessment**
  - Asset Identification and Characterization
    - Quantifies what is at risk
    - Five key types of assets considered:

- Improved property
- Emergency facilities
- Utilities
- Historic & cultural resources
- Population

Key Steps

- **Risk Assessment**
  - Damage Estimates
    - Estimate potential losses (dollars/ qualitative) to assets located in hazard areas
    - *Why?* To identify centers where the cost of potential damage is the highest

Key Steps

- **Risk Assessment**
  - Existing Land Uses and Future Development Trends in Hazard Areas
    - Where is new development planned?
    - How much of this is in hazard areas?
    - Are there codes/regulations in place to provide a certain degree of protection from the most frequent events?

A brief questionnaire will be distributed to Core Planning Group Members: Target dates: Distribution – 9/25/2009, Return 10/30/2009

Key Steps

- **Capabilities and Resources**
  - Plans, codes, and ordinances currently in place
  - Can contribute to, or be utilized for, hazard mitigation
  - Local Municipalities, County, State, Federal

A brief questionnaire will be distributed to Core Planning Group Members: Target dates: Distribution – 7/01/2009, Return 18/13/2009

Key Steps

- **Mitigation Strategy**
  - Goals
  - Evaluate full range of actions
  - Select actions
  - Prioritize selected actions
  - Identify responsible party, potential funding source, and time frame

This step will be the subject of a workshop and three worksheets:
Target dates for these items: Early February 2010

Key Steps

- **Plan Maintenance**
  - Final Plan is a "living document"
  - DMA 2000 requires updates, 5 year cycle
  - Regular monitoring and review of progress

Key Steps

- **Plan Integration**
  - DMA 2000 requires integration of mitigation plan into
    - job descriptions,
    - other local plans,
    - permitting vehicles,
    - etc…

The Role of Participating Jurisdictions, Consultants, the Public and Other Stakeholders

- Who Are Participating Jurisdictions:

Jurisdictions that want the overall multi-jurisdictional plan to "count", in FEMA's eyes, as their jurisdiction's mitigation plan.

- Participate, contribute

AND

- Formally adopt the Final Plan

The Role of Participating Jurisdictions, Consultants, the Public and Other Stakeholders

- Who Are Other Stakeholders?

- Neighborhood groups
- Non-profit organizations (i.e. scout troops, Red Cross, Salvation Army)
- Housing organizations
- Environmental groups
- Historic preservation groups
- Parent-teacher organizations
- Church organizations
- Parks organizations
- State, federal, and local government offices
- Neighboring communities/counties
- Business and development organizations
- Academic institutions
- Utility providers
- Hospitals
- Tribal groups
- Transportation entities
- Regional planning organizations
- Emergency service providers
- Jurisdiction web site managers / IT staff
- Any local office and/or group with a public outreach focus

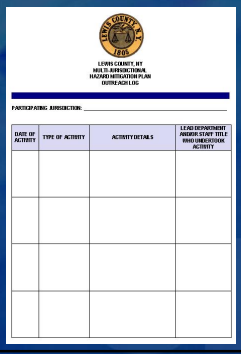
The Role of Participating Jurisdictions, Consultants, the Public and Other Stakeholders

- Role of the Public and Other Stakeholders:
  - Advisory role
  - Provide feedback
    - Historic hazard effects
    - Proposed mitigation actions
    - Etc…
  - Get the word out

Participation Criteria

- Participating Jurisdictions must…
  - Attend meetings (up to four in total with URS)
  - Provide available data/documents on the "Wish List"
  - Respond to questionnaires (three)
  - Give the public and key stakeholders in their jurisdiction opportunities to participate in plan development – See Guidance Memo #1

Public Outreach



LEWIS COUNTY, NY
MULTI-JURISDICTIONAL
HAZARD MITIGATION PLAN
OUTREACH LOG

PARTICIPATING JURISDICTION: _____

DATE OF ACTIVITY	TYPE OF ACTIVITY	ACTIVITY DETAILS	LEAD DEPARTMENT AND/OR STAFF TITLE WHO UNDERTOOK ACTIVITY

Participation Criteria

- Participating Jurisdictions must…
  - Select mitigation actions (worksheet)
  - Define implementation strategy (worksheet)
  - Adopt the plan (by resolution)
  - Participate in plan maintenance/updates

The Lewis County Planning Project

IMPORTANT!

The plan will only apply to the County and any jurisdictions that:

- Participate in the process;
- Develop a mitigation strategy*; and
- Formally adopt the final plan and provide a copy of your adoption resolution to FEMA

* Mitigation Actions – Identified by Each Jurisdiction

The Lewis County Planning Project

THE FINAL COUNTY-WIDE PLAN

Recognized by FEMA:
- County
- Jurisdictions meeting ALL of the participation criteria

NOT Recognized by FEMA:
- Any jurisdictions that don't meet ALL of the participation criteria

Key URS Deliverables

- Guidance Memorandums (3 throughout process)
- Working Draft Plan Chapters (ongoing)
- Risk Assessment Interim Deliverable (January 2010)
- Draft Plan (March 2010)

Review: Planning Committee, NYSEMO & FEMA

- Final Plan (60 days from coordinated comments on Draft)

Other URS Deliverables

- Fact Sheet
- Web Site Development Support
- Sample Adoption Resolution
- Meeting Minutes
- Working Chapters of the Draft Plan

Project Timeline

IMPLEMENTATION SCHEDULE:
Lewis County, New York
Multi-Jurisdictional Hazard Mitigation Planning Project

Task	Deliverable	Days	Schedule based on Actual Task 1 meeting date
1	Project Initiation Meeting - Refinement of Work Plan	15 days from NTP	03/30/09
2	Establish the Planning Committee	30 days from Task 1	04/29/09
3	Project Kickoff Presentation with the Planning Committee	45 days from Task 1	05/14/09
4	Outreach Tools	45 days from Task 1	05/14/09
5	Review of Available Data	60 days from Task 3	07/13/09
6	Identify Hazards	30 days from Task 5	08/12/09
7	Profile Hazards	30 days from Task 6	09/11/09
8	Asset Inventory	30 days from Task 7	10/11/09
9A	Vulnerabilities Assessment	30 days from Task 8	11/10/09
9B	Land Uses and Development Trends in Hazard Areas	60 days from Task 6	10/11/09
10	Research of Mitigation Alternatives	30 days from Task 9A	12/10/09
11	Risk Assessment Interim Deliverable	30 days from Task 10	01/09/10
12	Risk Assessment Q&A Session	15 days from Task 12	01/24/10
13	Capability Assessment	150 days from NTP	09/12/09
14	Mitigation Strategy	30 days from Task 13	02/23/10
15	Plan Maintenance Procedures	210 days from NTP	11/11/09
16	Plan Integration Strategy	210 days from NTP	11/11/09
17	Draft to NYSEMO	30 days from Task 15	03/25/10
18	Final	60 days from coordinated comments on draft	

Core Planning Group Responsibilities

- If you do not participate actively in the plan's development (through submittal of Core Planning Group Deliverables)

OR

- If you do not identify an implementation strategy for at least one mitigation action that your municipality will pursue

THEN

- FEMA will not approve the plan for your municipality.

The "Wish List"

- Info/data/documents that we have:
  - FEMA Act, Rule, Guidelines, and How-To Guides
  - State Hazard Mitigation Plan
  - On-line resources (USGS, NOAA, FEMA, etc.)
  - County GIS Data

The "Wish List"

- Info/data/documents we'd like from you
  - Readily-available items from the "Wish List" (handout)
  - Deadline: June 26, 2009
  - Send To:

James Martin
Lewis County
Fire and Emergency Management
5252 Outer Stowe Street
Lowville, NY 13367
Phone: (315) 376-5234 Fax: (315) 376-5293
Email: jmartin@lewiscountyny.org

Questions and Answers

Lewis County, New York
Multi-Jurisdictional Hazard Mitigation Planning Project
Kickoff Meeting
May 21, 2009 at 1:00 p.m.
Lowville Fire Hall, Lowville, NY

Meeting Minutes

ATTENDANCE (see attached sign-in sheet)

AGENDA ITEMS DISCUSSED:

Welcome & Opening Remarks

Jim Martin, Director of Fire and Emergency Management, welcomed everyone to the meeting. Mr. Martin explained the history of the county hiring URS Corporation as the contractor for the project and the importance of municipal involvement throughout the process. After reviewing some housekeeping measures, Mr. Martin turned the floor over to Richard Franks of URS.

Overview of the Project – What is a Multi-Jurisdictional Plan?

Mr. Franks thanked everyone for attending and began his presentation by discussing the intent of the Lewis County Multi-Jurisdictional Natural Hazard Mitigation Plan. Mr. Franks defined hazard mitigation and the importance of studying natural hazards, not only for the purposes of preparing the plan for the Federal Emergency Management Agency (FEMA), but also for the municipality to understand the effects of hazards. He explained that the goal is to identify hazard mitigation measures that will reduce risks to human life. Mr. Franks explained that the Disaster Mitigation Act of 2000 requires that every municipality have an approved plan. Mr. Franks further explained that Lewis County has taken the initiative for all 26 of its jurisdictions by providing a method for each municipality to work jointly to prepare a county-wide plan. Mr. Franks explained that there is no out-of-pocket cost to municipalities, but some time and resources will be needed from participating jurisdictions. Finally, Mr. Franks explained that once a plan is approved by FEMA, participating jurisdictions will be eligible for mitigation planning grants.

Mr. Franks wanted to make sure that everyone understood that the hazards that will be studied over the coming months will only be natural hazards, and not man-made hazards. Some municipalities choose to study man-made hazards (homeland security and terrorism), but it is very costly. Mr. Franks explained that FEMA does not require man-made hazard analysis, only natural.

Mr. Franks made the following points:

- Each jurisdiction will identify its own set of mitigation actions for the plan
- There is no competition between municipalities.

Key Steps in the Process

After the initial description of the program and project, Mr. Franks began to talk about key steps in the process. He stated that the process would:

- identify potential hazards,
- assess the risk of the municipalities to particular hazards (identify assets, damage estimates, existing land use and future development trends),
- review capabilities and resources of municipalities (local, county, state and federal regulations and codes),
- prepare a mitigation strategy, including goals and priorities
- provide for plan maintenance
- provide for plan integration as required by DMA 2000

Participating Jurisdictions and Stakeholders

All jurisdictions that participate, contribute AND formally adopt the plan will benefit from the final approved plan. Participating jurisdictions are encouraged to provide historical information and other data to URS and Lewis County Fire and Emergency Management throughout the process. Participating jurisdictions are REQUIRED to attend meetings, provide data, respond to questionnaires, and give the public and key stakeholders in their jurisdiction opportunities to participate in plan development. Participating jurisdictions are also required to select mitigation actions, define implementation strategy, and adopt the plan.

Other stakeholders, including neighborhood groups, businesses, hospitals, emergency service providers, etc. are encouraged to participate in the plan, as well.

Additionally, Mr. Franks stated that if a municipality does not participate actively in the plan's development, or if it does not identify an implementation strategy for at least one mitigation action, then FEMA will not approve the plan for that municipality. Mr. Franks encouraged active participation from all municipalities.

Closing

Mr. Franks reviewed the "Wish List" that was distributed to each attendee and explained that information from that list should be forwarded to Jim Martin by June 26, 2009.

There were no immediate questions from the attendees. Sarah Bullock, of Lewis County Economic Development and Planning, explained that as municipal representatives, the attendees duties were not to be the only person who knew about the plan's progress. It was encouraged that the representatives take the materials and information back to their municipalities and engage others in the conversation.

Mr. Martin thanked everyone for attending and encouraged them to check his website for more information about the plan.

Lewis County Multi-Jurisdictional Hazard Mitigation Plan
Municipal Representatives Information Session
Croghan Fire Hall
August 17, 2009

I. Explanation of Information Session
   A. Many not at Kickoff Meeting

   B. Some confusion on role of representatives

   C. Answer any questions about the plan

II. Purpose of Hazard Mitigation Plan
   A. Definition of HMP ï process for State and local governments to identify policies, activities, and tools to implement mitigation activities.

   B. Allows us to study natural hazards, evaluate their effects, and IDENTIFY HAZARD MITIGATION MEASURES THAT WILL REDUCE RISKS!!!
      i. Examples include
         1. elevating a house to reduce flood damages
         2. modifying building codes to incorporate hazard-resistant design

   C. Mitigation planning can help reduce or eliminate future disaster damages

   D. ONCE THE PLAN IS APPROVED BY FEMA, PARTICIPATING JURISDICTIONS WILL BE ELIGIBLE TO APPLY FOR MITIGATION PROJECT GRANTS!

III. Plan Process
   A. County has received a grant from FEMA/SEMO to do a multi-hazard mitigation plan
   B. Each participating jurisdiction will identify its own set of mitigation actions in the plan, and there is no competition between jurisdictions.
   C. Participating jurisdictionsô representatives make up the ñCore Planning Groupò
   D. The entire planning committee includes the Core Planning Group and other stakeholders (businesses, utilities, other agencies).
   E. KEY STEPS of PROCESS:
      i. Identify Potential Hazards
         - evaluation of a full range of natural hazards
         - avalanches ï floods ï wildfires ï wind
         - QUESTIONNAIRE #2

      ii. Risk Assessment
         1. hazard profile
            - description of hazard
            - location of hazard area

- extent
- previous occurrences
- probability/likelihood of future occurrence

2. Asset Identification and Characterization
   - Quantifies what is at risk
   - Assesses property, emergency facilities, utilities, historic/cultural resources, and population
   - Damage Estimates
   - Existing Land Uses and Development Trends (QUESTIONNAIRE #1)
   -

iii. Capabilities and Resources
   1. plans, codes, and ordinances

iv. Mitigation Strategy
   1. goals
   2. evaluate full range of actions
   3. select actions
   4. prioritize selected actions
   5. identify responsible party

   THIS WILL BE THE SUBJECT OF A WORKSHOP AND WORKSHEETS

v. Plan Maintenance
   1. final plan is a ñliving documentò
   2. DMA 2000 requires an update every 5 years
   3. regular monitoring and review of progress

IV. Participating Jurisdictionôs Roles
   A. Contribution of information ï questionnaires and beyond
      i. Attend meetings
      ii. Provide available data
      iii. Respond to questionnaires
   B. Select mitigation actions
   C. Define implementation strategy for mitigation actions
   D. Formal adoption of the plan
   E. Participate in plan maintenance/updates

   ***THE PLAN WILL ONLY APPLY TO THE COUNTY AND JURISDICTIONS THAT PARTICIPATE IN THE PROCESS, DEVELOP A MITIGATION STRATEGY, AND FORMALLY ADOPT THE FINAL PLAN!

V. Current Questionnaires
VI. Open Discussion

Lewis County, New York
Multi-Jurisdictional Hazard Mitigation Planning Project
Municipal Representative Information Session
August 17, 2009 at 7:00 p.m.
Croghan Fire Hall, Croghan, NY

Meeting Minutes

ATTENDANCE

Frank Yerdon ï Town of Osceola
Mark Birchenough ï Village of Castorland
James Zehr ï Village of Croghan
William Shambo ï Village of Croghan
Adrian Perry ï Town of Montague
Gerald Snyder ï Village of Copenhagen
Warren Shaw ï Town of Croghan
Sarah Bullock ï Lewis County Dept. of Economic Development and Planning
Jim Martin ï Lewis County Emergency Management

AGENDA ITEMS DISCUSSED:

Welcome & Opening Remarks

Jim Martin, Director of Fire and Emergency Management, welcomed everyone to the session and explained the purpose of the county doing the multi-jurisdictional hazard mitigation plan. He then turned it over to Sarah Bullock

Purpose of Information Session

Ms. Bullock explained that the kickoff meeting held in May was well attended, but many of those in attendance were the Town Supervisors and Village Mayors, and those individuals may not be the same people asked to represent the municipality throughout the planning process. Ms. Bullock explained that their purpose this evening was to touch on much of what was discussed at the kickoff meeting, but focus on the roles and responsibilities of the municipal representatives.

Purpose of Plan

Mr. Martin spoke briefly on the purpose of the plan, giving a background of how the county is funded for this venture and how it will cost the municipalities time and expertise only. Mr. Martin explained that in order for a municipality to seek mitigation funding, they must have an approved hazard mitigation plan. Ms. Bullock explained that DMA 2000 requires all municipalities adopt a hazard mitigation plan, and that by doing a multi-jurisdictional approach, it will be more cost effective and efficient for each municipality.

Plan Process and Key Steps

Ms. Bullock reiterated the steps outlined by URS at our Kickoff meeting in May:

- identify potential hazards,

- assess the risk of the municipalities to particular hazards (identify assets, damage estimates, existing land use and future development trends),
- review capabilities and resources of municipalities (local, county, state and federal regulations and codes),
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- provide for plan integration as required by DMA 2000

Additionally, Ms. Bullock focused on the two questionnaires that are currently in circulation, (1) Land Use Development Trends and (2) Hazard Identification. Ms. Bullock explained the importance of completing those (and future) questionnaires and returning them to either the county or URS.

Participating Jurisdictions Roles

Ms. Bullock discussed the roles and responsibilities of the municipal representatives and made clear to those in attendance that it is vital that they complete questionnaires in a timely manner, attend meetings when requested, and provide as much information as possible throughout the process. Specifically, the group discussed the importance of participation during the ñMitigation Strategyò portion of the planning process and that in order for a municipality to have an approved plan, they must identify a mitigation strategy for their jurisdiction. This led to discussion of types of mitigation strategies within municipalities. Washed out roads and culverts were discussed.

Ms. Bullock talked about the importance of maintaining contact with the public throughout the process and soliciting information from everyone within the municipality. It was made clear that as a representative it is that individualôs responsibility to gather the information, but it should be a collaborative effort at the municipal level. Each representative should be reporting back to their municipality about the plan and working with the municipality to gather the necessary information.

Hazard Identification Questionnaire

Ms. Bullock distributed a copy of the Hazard Identification Questionnaire and reviewed it with the attendees. The questionnaire covers all natural hazards and it was noted that our contractor has done much of the work for us. Ms. Bullock explained that the municipal representatives should review the items URS has completed and comment on it in the blank block in the table.

Closing

Attendees were encouraged to gather historical storm and disaster data to pass along to our contractors, in addition to completing the questionnaires that are in circulation currently. Ms. Bullock and Mr. Martin offered their assistance throughout the process and explained that if there are any questions in the future, they should not hesitate to be in touch.

Lewis County, New York
Multi-Jurisdictional Hazard Mitigation Planning Project
Municipal Representative Information Session
August 18, 2009 at 7:00 p.m.
Constableville Fire Hall, Constableville, NY

Meeting Minutes

ATTENDANCE

Don Gydesen ï Town of Lyonsdale
Bruce Myers ï Town of Leyden
Verle Yelton ï Town of Leyden
Richard Failing ï Town of West Turin
Catherine Liendecker ï Village of Lyons Falls
Cheryl LaLonde ï Village of Lyons Falls
Tom Gunn ï Town of Greig
Pete Kraeger ï Village of Port Leyden
Sarah Bullock ï Lewis County Dept. of Economic Development and Planning
Jim Martin ï Lewis County Emergency Management

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Closing

There were questions about what types of mitigation strategies could be identified. Ms. Bullock described situations including chronically washed out roads due to storm events, inadequate culverts that suffer from storm events, and storm drainage in flood zones. The group then began to discuss some of the items that they might be looking at during the mitigation strategy portion of the project. Ms. Bullock explained that there will be workshops during that portion of the process and that it is critical that they are in attendance.

Attendees were encouraged to gather historical storm and disaster data to pass along to our contractors, in addition to completing the questionnaires that are in circulation currently. Ms. Bullock and Mr. Martin offered their assistance throughout the process and explained that if there are any questions in the future, they should not hesitate to be in touch.

Lewis County Multi-Jurisdictional
Natural Hazard Mitigation Plan
Q&A Session on the Risk Assessment Interim Deliverable
February 9, 2010
Legislative Chambers, Lewis County Courthouse,
7660 North State Street, Lowville, NY

Agenda

- Welcome & Opening Remarksé é é é é é é é .é ..*James Martin, Lewis County Fire and Emergency Management*
- **R**isk **A**ssessment **I**nterim **D**eliverable Overview é é é é .....*Richard Franks, URS*
  - *Hazard Identification*
  - *Hazard Profiles*
  - *Asset Identification and Characterization*
  - *Land Uses and Development Trends*
  - *Damage Estimates*
  - *Types of Mitigation Actions to Consider for Various Hazards*
- Next Stepsé é é é é é é é é é é é é é . é é é é .....*Richard Franks, URS*
- Questions & Answers, Discussioné é é é é é .é ……..……*All*
- Closing Remarksé é é é é .....é é é é é é é .. ……*James Martin, LCFEM*
- Adjourn

Please remember to
SIGN IN
if you haven't already done so.
Thank you.

Lewis County Multi-Jurisdictional Hazard Mitigation Plan
Q&A Session on the Risk Assessment Interim Deliverable – February 9th, 2010
Legislative Chambers, Lewis County Courthouse
7660 North State Street, Lowville, NY

Last Name	First Name	Representing	Email Address	Phone
Shaw	Warren	T/o Croghan	wbshaw79@yahoo.com	346-6722
Failing	Richard	T/o West Turin		397-2231
Forney	Craig	T/o Martinsburg		376-2309
Hayes	Edward	T/o West Turin		397-2595
Gydesen	Donald	Town Lyonsdale		348-8826
Pendergast	David	Lewis County	dpendergast@lewiscountyny.org	(315) 376-5355
BOYD	JOHN	LEW. CO. LEG. DIST 4		376-3580
Bush	Jack	Lewis County	JBUSH010@twcny.rr.com	348-8033
MAHAR	PAT	T/o Denmark		493-3896
Peters	Joseph	Town of Lowville		376-6424
McHale	Helen	Town of Leyden	hmchale@frontiernet.net	348-8205
Zehr	James	Village of Croghan	jzehr2@twcny.rr.com	346-1979
Martin	James	FC-1	jmartin@lewiscountyny.org	376-5305
Virkler	Steve	Watertown Daily Times	svirkler@wdt.net	376-3811
BRECHBROUGH	MARK	VILLAGE OF CASTORLAND		376-6195

Lewis County Multi-Jurisdictional Hazard Mitigation Plan
Q&A Session on the Risk Assessment Interim Deliverable – February 9th, 2010
Legislative Chambers, Lewis County Courthouse
7660 North State Street, Lowville, NY

Last Name	First Name	Representing	Email Address	Phone
Failing	Mary	Village of Constableville	villconst@frontiernet.net	397-8063
Raymond	Ronald	NYSDOT Region IV		529-078
Simpson	Carol	HRBRRD	csimpsan@hrbrrd.com	788-5440
Inbolt	Mike	Lewis Co Sheriff	SheriffC lewiscountyny.org	376-5571
Peebles	Gordon	Township Maintenance		376-8400
Manning	Kathy	T/V Lowville	lowvillecodes@frontiernet.net	376-8870 ext 6
Gunn	Tom	Greig	gunn.tp@Gmail	348-6247
Roberts	Sandra	Lewis Co. Head Start	lchs@twcny.rr.com	376-7531
Reed Sr	Gerald	Town of Turin	WyReed@Frontiernet.net	376-7078
Bullock	Sarah	Lewis Co. Planning	sbullock@lewiscountyny.org	377-2024
Richard	Frances	URS	richard.francis@urscorp.com	973 785 0700

Lewis County Multi-Jurisdictional Hazard Mitigation Plan
Q&A Session on the Risk Assessment Interim Deliverable – February 9th, 2010
Legislative Chambers, Lewis County Courthouse
7660 North State Street, Lowville, NY

Last Name	First Name	Representing	Email Address	Phone
Shambo	William	Village of Croghan	billShambo@twcny.rr.com	346-6874
Martin	James	FC-1	jmartin@lewiscountyny.org	376-5305
LaLonde	Cheryl	Village of Lyons Falls	tclalonde318@frontiernet.net	348-6345

Multi-Jurisdictional Hazard Mitigation Plan

Lewis County, New York

Risk Assessment Interim Deliverable
Question & Answer Session
February 9, 2010

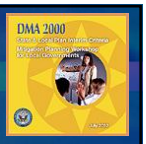
This Presentation

- Background and Progress
- The Risk Assessment Interim Deliverable
  - Hazard Identification
  - Hazard Profiles
  - Asset Identification and Characterization
  - Land Use and Development
  - Damage Estimates
  - Potential Mitigation Actions
- Next Steps

Mitigation and Mitigation Planning

- Hazard Mitigation is any sustained action taken to reduce or eliminate long-term risk to life and property from a hazard event.
- Hazard Mitigation Planning is the **process** by which State, local, and Indian Tribal governments identify policies, activities, and tools to implement mitigation actions that will reduce these risks.

The Purpose of the Plan



- Any local government jurisdiction wishing to apply for grants from FEMA to implement hazard mitigation actions must have a FEMA-approved hazard mitigation plan.

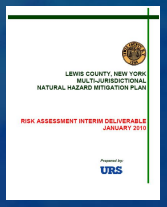
  The Disaster Mitigation Act, 2000
- The Plan is funded by a FEMA grant, no out-of-pocket expenses for municipalities.
- The Consultants role is to walk the County and participating municipalities through the process needed to meet FEMA requirements and to author the plan.

Project Progress Timeline to Draft Plan

Kickoff Meeting:	May 21, 2009
Plan Development:	Ongoing
Local Feedback:	Ongoing
Risk Assessment Interim Deliverable:	January 8, 2010
Risk Assessment Q&A Session:	February 9, 2010
Mitigation Strategy Working Session:	March 2, 2010*
Draft Plan:	March 25, 2010

* This is a targeted meeting date and is to be confirmed

Risk Assessment Interim Deliverable



- Working chapters of the full draft plan:
  - Hazard Identification
  - Hazard Profiles
  - Asset Identification and Characterization
  - Damage Estimates
  - Land Uses and Development Trends
  - Types of Mitigation Actions to Consider for Various Hazards

Hazard Identification

- Evaluation of a wide range of natural hazards
  - Hazards selected for further analysis and reasons why
  - Hazards not selected and reasons why not

Hazard Identification

Table 2.3
Summary Results of the Hazard Identification and Evaluation Process

ATMOSPHERIC	GEOLOGIC
☐ Avalanche	☑ Earthquake
☑ Extreme Temperatures	☐ Expansive Soils
☑ Extreme Wind	☑ Landslide
☐ Hailstorm	☐ Land Subsidence
☐ Hurricane and Tropical Storm	☐ Tsunami
☐ Lightning	☐ Volcano
☐ Nor'easter	
☑ Tornado	**OTHER**
☑ Winter Storm	☑ Wildfire
HYDROLOGIC	
☐ Coastal Erosion	
☑ Dam Failure	
☑ Drought	
☑ Flood	
☑ Ice Jams	
☐ Storm Surge	
☐ Wave Action	

☑ = Hazard considered significant enough for further evaluation through the multi-jurisdictional hazard risk assessment.

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23 natural hazards evaluated
11 considered significant enough for further evaluation through risk assessment

Summary of Affected Municipalities

Table 3a.1
Summary of Profiled Hazards

Jurisdiction		Extreme Temperatures	Extreme Wind	Tornado	Winter Storm	Dam Failure[1]	Drought	Flood[1]	Ice Jam[1]	Earthquake	Landslide[1]	Wildfire[2]
Lewis	County	•	•	•	•	•	•	•	•	•	•	•
Castorland	Village	•	•	•	•	•	•	•		•		•
Constableville	Village	•	•	•	•		•	•		•		•
Copenhagen	Village	•	•	•	•	•	•		•	•		•
Croghan	Town	•	•	•	•	•	•	•		•		•
Croghan	Village	•	•	•	•	•	•	•		•		•
Denmark	Town	•	•	•	•	•	•	•	•	•		•
Diana	Town	•	•	•	•		•	•		•		•
Greig	Town	•	•	•	•	•	•	•		•	•	•
Harrisburg	Town	•	•	•	•		•			•		•
Harrisville	Village	•	•	•	•		•	•		•		•
Lewis	Town	•	•	•	•	•	•	•		•		•
Leyden	Town	•	•	•	•	•	•	•		•	•	•
Lowville	Town	•	•	•	•		•	•	•	•	•	•
Lowville	Village	•	•	•	•		•	•		•		•
Lyons Falls	Village	•	•	•	•		•	•		•	•	•
Lyonsdale	Town	•	•	•	•	•	•	•	•	•		•
Martinsburg	Town	•	•	•	•	•	•	•		•		•
Montague	Town	•	•	•	•		•			•		•
New Bremen	Town	•	•	•	•	•	•	•		•		•
Osceola	Town	•	•	•	•		•	•		•		•
Pinckney	Town	•	•	•	•		•			•		•
Port Leyden	Village	•	•	•	•		•	•		•		•
Turin	Town	•	•	•	•	•	•	•		•		•
Turin	Village	•	•	•	•		•	•		•		•
Watson	Town	•	•	•	•	•	•	•	•	•	•	•
West Turin	Town	•	•	•	•		•		•	•		•

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Hazard Profiles

- Description of hazard
- Location of hazard area
- Extent (magnitude or severity)
- Previous occurrences
- Probability of future occurrences

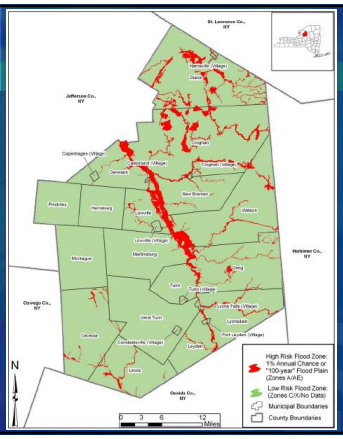
Hazard Profiles

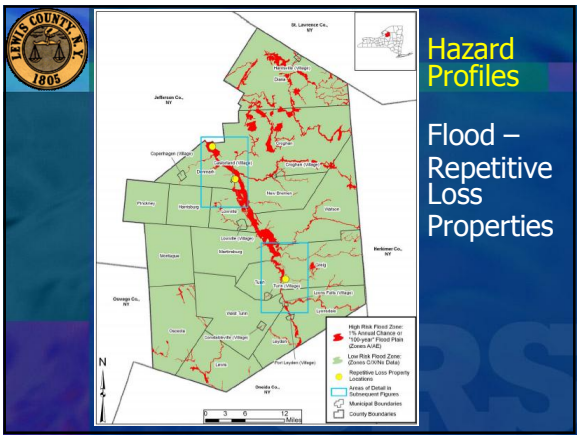
Countywide Hazards

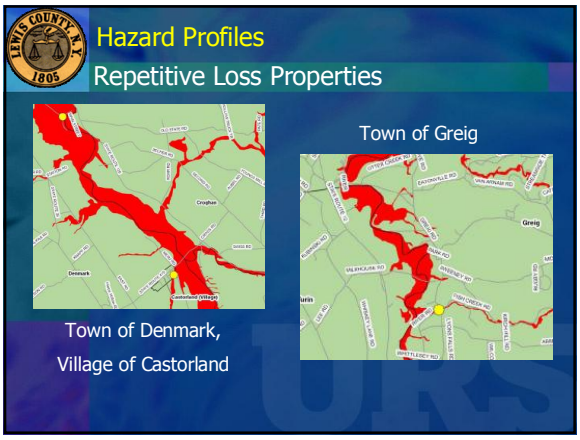
- Uniform risk of occurrence assumed across the whole County
- No specific delineable risk areas
  - Extreme temperatures
  - Extreme winds
  - Winter storms
  - Tornados

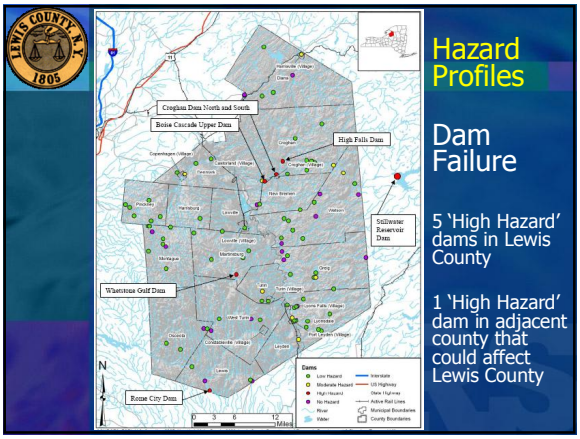
Hazard Profiles

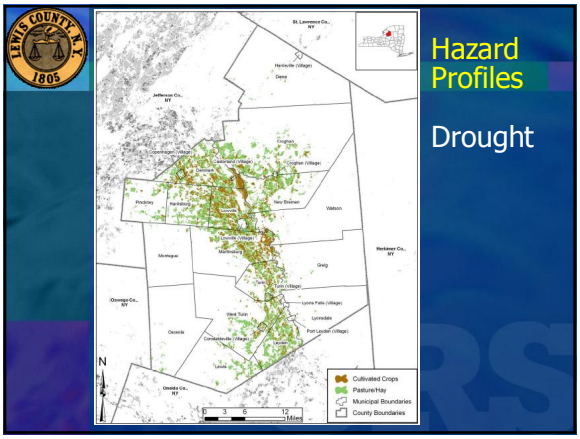
Flood

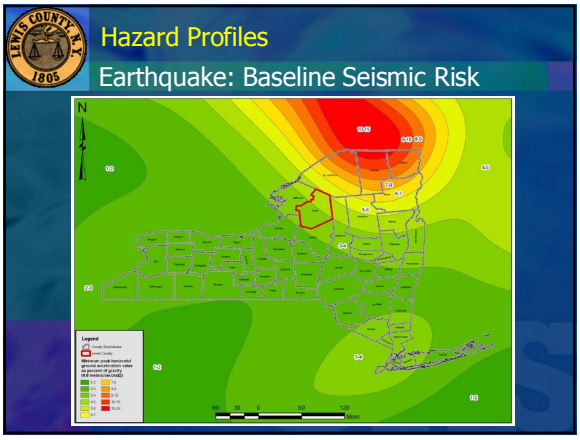


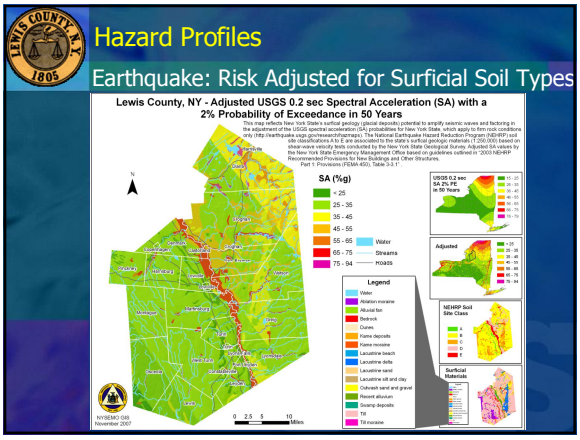

Hazard Profiles
Flood – Repetitive Loss Properties


Hazard Profiles
Repetitive Loss Properties
Town of Greig
Town of Denmark,
Village of Castorland


Hazard Profiles
Dam Failure
5 'High Hazard' dams in Lewis County
1 'High Hazard' dam in adjacent county that could affect Lewis County

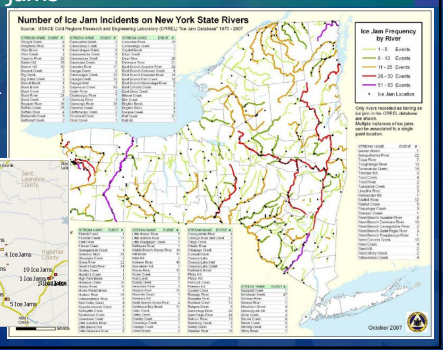

Hazard Profiles
Drought


Hazard Profiles
Earthquake: Baseline Seismic Risk

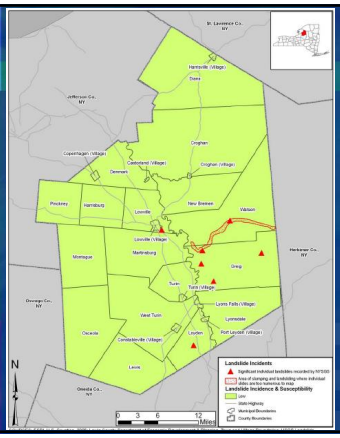

Hazard Profiles
Earthquake: Risk Adjusted for Surficial Soil Types
Lewis County, NY - Adjusted USGS 0.2 sec Spectral Acceleration (SA) with a 2% Probability of Exceedance in 50 Years

Hazard Profiles
Ice jams

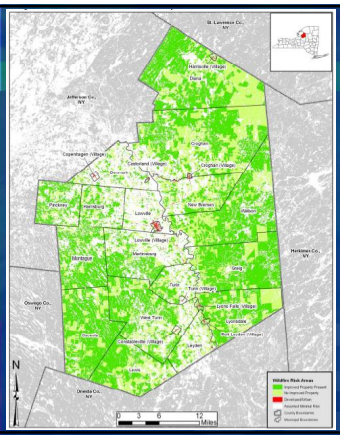
31 ice jam incidents recorded by USACE CRREL in Lewis County



Hazard Profiles
Landslides



Hazard Profiles
Wildfire



Asset Identification and Characterization

- Quantifies what is at risk
- Six categories of assets considered:
  - Improved property
  - Emergency facilities
  - Critical infrastructure & utilities
  - Historic & cultural resources
  - Population
  - Other key facilities

Asset Identification and Characterization

Table 3b.1
Improved Property by Jurisdiction

Jurisdiction	Total Number of Parcels	Number of Improved Parcels	Percentage of Improved Parcels	Total Value of Improvements*
Castorland, Village of	130	114	88%	$4,536,601
Constableville, Village of	197	163	83%	$11,969,739
Copenhagen, Village of	270	223	86%	$26,225,170
Croghan, Town of	2372	1431	60%	$259,596,262
Croghan, Village of	294	245	83%	$48,524,225
Denmark, Town of	1129	701	62%	$51,035,932
Diana, Town of	1836	1116	61%	$33,233,076
Greig, Town of	2011	1159	58%	$52,613,343
Harrisburg, Town of	613	258	42%	$19,470,912
Harrisville, Village of	351	293	83%	$15,891,401
Lewis, Town of	892	482	54%	$49,834,257
Leyden, Town of	1003	678	68%	$30,798,285
Lowville, Town of	809	520	64%	$36,607,940
Lowville, Village of	1347	1248	93%	$73,478,434
Lyons Falls, Village of	380	282	74%	$32,514,533
Lyonsdale, Town of	1062	574	54%	$43,943,874
Martinsburg, Town of	1230	698	57%	$3,315,970
Montague, Town of	561	260	46%	$3,801,003
New Bremen, Town of	1512	1041	69%	$8,089,227
Osceola, Town of	838	420	49%	$9,948,744
Pinckney, Town of	613	277	45%	$13,882,466
Port Leyden, Village of	321	268	83%	$11,456,300
Turin, Town of	622	367	59%	$31,441,775
Turin, Village of	167	131	78%	$4,818,300
Watson, Town of	2451	1423	58%	$5,843,340
West Turin, Town of	1308	668	51%	$32,111,809
County Total	24339	15050	62%	*$914,983,118*

*Not including some public buildings and other tax-exempt structures.

Improved Property: Approx $900 million

Asset Identification and Characterization
Improved Property in Delineated Hazard Areas

Table 3b.2
Percentage of Improved Property in Delineated Hazard Areas

Municipality	Total Value of Improvements	High Flood Risk (A/AE Zones)	Wildfire	Earthquake (Soil Types D & E)
Castorland, Village of	$4,536,601	5%	33%	45%
Constableville, Village of	$11,969,739	5%	35%	22%
Copenhagen, Village of	$26,225,170	0%	10%	0%
Croghan, Town of	$259,596,262	52%	42%	81%
Croghan, Village of	$48,524,225	5%	14%	99%
Denmark, Town of	$51,035,932	7%	18%	23%
Diana, Town of	$33,233,076	15%	65%	45%
Greig, Town of	$52,613,343	19%	78%	8%
Harrisburg, Town of	$19,470,912	0%	34%	2%
Harrisville, Village of	$15,891,401	9%	37%	57%
Lewis, Town of	$49,834,257	34%	66%	41%
Leyden, Town of	$30,798,285	9%	34%	13%
Lowville, Town of	$36,607,940	5%	20%	16%
Lowville, Village of	$73,478,434	0%	9%	0.4%
Lyons Falls, Village of	$32,514,533	8%	46%	75%
Lyonsdale, Town of	$43,943,874	33%	55%	30%
Martinsburg, Town of	$3,315,970	11%	23%	7%
Montague, Town of	$3,801,003	0%	67%	0.2%
New Bremen, Town of	$8,089,227	9%	41%	69%
Osceola, Town of	$9,948,744	2%	78%	4%
Pinckney, Town of	$13,882,466	0%	53%	1%
Port Leyden, Village of	$11,456,300	6%	31%	19%
Turin, Town of	$31,441,775	1%	52%	11%
Turin, Village of	$4,818,300	10%	23%	6%
Watson, Town of	$5,843,340	13%	74%	43%
West Turin, Town of	$32,111,809	0%	43%	5%
County Total	*$914,983,118*	22%	40%	42%

Asset Identification and Characterization

Emergency Facilities: 19 (Identified/Georeferenced)

Table 3b.3
Emergency Facilities by Jurisdiction

Jurisdiction	Fire Stations	Police Stations	EMS / Ambulance Stations	Hospitals
Castorland, Village of	1			
Constableville, Village of	1			
Copenhagen, Village of	1			
Croghan, Town of	1			
Croghan, Village of	1			
Denmark, Town of				
Diana, Town of				
Greig, Town of	1			
Harrisburg, Town of				
Harrisville, Village of	1			
Lewis, Town of	1			
Leyden, Town of				
Lowville, Town of				
Lowville, Village of	1	2	1	1
Lyons Falls, Village of	1			
Lyonsdale, Town of				
Martinsburg, Town of	1			
Montague, Town of				
New Bremen, Town of	1			
Osceola, Town of				
Pinckney, Town of				
Port Leyden, Village of	1			
Turin, Town of	1			
Turin, Village of	1			
Watson, Town of				
West Turin, Town of				
County Total	*15*	*2*	*1*	*1*

Asset Identification and Characterization

Critical Infrastructure and Utilities: 62

Table 3b.4
Critical Infrastructure and Utilities by Jurisdiction

Municipality	Community Water Supply Systems	Waste Water Facilities	Power Substations	Gas Pipeline	Public Works Facilities	Airports	Communications Facilities
Castorland, Village of	1	1					
Constableville, Village of	1	1			1		
Copenhagen, Village of	1	1	1				
Croghan, Town of		2	8	Y	1		
Croghan, Village of	1						
Denmark, Town of				Y			
Diana, Town of			1		1		2
Greig, Town of				Y	1		
Harrisburg, Town of					1		
Harrisville, Village of	1				1		
Lewis, Town of					1		
Leyden, Town of			4	Y	1		1
Lowville, Town of			1		1		
Lowville, Village of	1	1			1		
Lyons Falls, Village of	1	1	1				
Lyonsdale, Town of			3		1		
Martinsburg, Town of	2	1	1		1		1
Montague, Town of					1		1*
New Bremen, Town of			3	Y	1	1	
Osceola, Town of	1				1		
Pinckney, Town of					1		2
Port Leyden, Village of	1	1	2				
Turin, Town of				Y			
Turin, Village of	1				1		
Watson, Town of			2	Y			
West Turin, Town of			1	Y			
County Total	*12*	*9*	*28*		*17*	*1*	*7*

Asset Identification and Characterization

Other Key Facilities: 30

Table 3b.5
Other Key Facilities by Jurisdiction

Jurisdiction	Schools	Residential Senior Care Facilities*
Castorland, Village of	2	1
Constableville, Village of	1	0
Copenhagen, Village of	1	1
Croghan, Town of	0	0
Croghan, Village of	0	1
Denmark, Town of	0	0
Diana, Town of	0	0
Greig, Town of	0	0
Harrisburg, Town of	0	0
Harrisville, Village of	2	1
Lewis, Town of	1	0
Leyden, Town of	0	0
Lowville, Town of	0	1
Lowville, Village of	4	4
Lyons Falls, Village of	0	1
Lyonsdale, Town of	0	0
Martinsburg, Town of	1	0
Montague, Town of	0	0
New Bremen, Town of	3	0
Osceola, Town of	0	0
Pinckney, Town of	0	0
Port Leyden, Village of	1	2
Turin, Town of	2	0
Turin, Village of	0	0
Watson, Town of	0	0
West Turin, Town of	0	0
County Total	*18*	*12*

Asset Identification and Characterization

Critical Facilities in Hazard Areas

Table 3b.6 in RAID

High Flood Risk:	24
Earthquake:	44
Wildfire:	21

Table 3b.6
Critical Facilities and Infrastructure Exposed to Delineated Hazards

Municipality	Type	Name	Location/Address	Earthquake (Soils Type D & E)	Wildfire	Flood (A/AE Zone)
Croghan (Town)	Power Substation	No Information Available	No Information Available	■		
Croghan (Town)	Power Substation	No Information Available	No Information Available			
Croghan (Town)	Waste Water Facility	Croghan Town Waste Water Treatment Facility	No Information Available	■		■
Croghan (Town)	Natural Gas Pipeline	Iroquois Pipeline	No Information Available	■	■	■
Croghan (Village)	Power Station	Croghan Fire Department	4823 Football Street			
Denmark	Communications Facility	WNBZ-TS 264	No Information Available	■		
Denmark	Communications Facility	WWTI-TS 74	No Information Available			
Denmark	Highway Garage	Denmark Town Garage	3507 Roberts Road	■		
Denmark	Power Substation	No Information Available	No Information Available		■	■
Denmark	Waste Water Facility	Carterland Village Waste Water Treatment Facility	Po Box 164, State Route 410	■		■
Diana	Natural Gas Pipeline	Iroquois Pipeline	No Information Available	■	■	■
Greig	Fire Station	5/3 Fire Department	Fairchildsville Road			
Greig	Highway Garage	Greig Town Garage	3181 Greig Road			
Greig	Natural Gas Pipeline	Iroquois Pipeline	No Information Available	■	■	■
Harrisburg	Highway Garage	Harrisburg Town Garage	3514 Cobb Road			
Harrisville	Fire Station	Harrisville Fire Department	14426 Church Street	■		
Harrisville	Highway Garage	Main Town Garage	3532 Old State Street Extension	■		
Harrisville	School	Harrisville Elementary School	14251 Finnis Lane			
Harrisville	School	Harrisville Junior/Senior High School	14251 Finnis Lane			
Lewis	Fire Station	West Leyden Fire	3268 State Route 26			

Asset Identification and Characterization

Historic and Cultural Resources: 19

Constable Hall (1819), Town of Leyden

Table 3b.7
Historic and Cultural Resources by Jurisdiction

Jurisdiction	Asset Name/Description	Location
Constableville, Village of	Constableville Village Historic District	Bounded by Sugar River, Main, North Main, West Main, Church, High, West and James Streets
Leyden, Town of	Constable Hall	Off NY 26
Leyden, Town of	Edmund Wilson House	S of Port Leyden off NY 12 on Talcottville Road
Lowville, Village of	Franklin B. Hough House	Collins Street
Lowville, Village of	Bateman Hotel	7274 S. State Street
Lowville, Village of	Lewis County Fairgrounds	Bostwick Street
Lowville, Village of	Lewis County Soldiers' and Sailors' Monument	Village Green, NY26 and Bostwick Street
Lowville, Village of	Lowville Presbyterian Church	7707 North State Street
Lowville, Village of	Lowville Masonic Temple	7532 South State Street
Lyons Falls, Village of	Gould Mansion Complex	Main Street
Lyons Falls, Village of	Forest Presbyterian Church and Manse	4109 Center Street
Lyonsdale, Town of	"The Pines"	3995-4000 Lyons Falls Road
Martinsburg, Town of	Methodist Episcopal Church of West Martinsburg	West Martinsburg Road
Martinsburg, Town of	Martinsburg Town Hall	NY 12 D-NY 26
Martinsburg, Town of	General Walter Martin House	6775 Main Street (NY 26)
Osceola, Town of	Osceola Town Hall (Former Methodist Church)	Cobrin Road
Port Leyden, Village of	Saint Mark's Church	West Main Street
Watson, Town of	Pine Grove Community Church	Austin Road and Pine Grove Road
West Turin, Town of	Jonathon C. Collins House and Cemetery	West Road

Asset Identification and Characterization

Historic Structures in Hazard Areas

Table 3b.8 in RAID

High Flood Risk:	1
Earthquake:	6
Wildfire:	6

Table 3b.8
Historical and Cultural Resources Exposed to Delineated Hazards

Jurisdiction	Asset Name/Description	Flood (Zone A/AE)	Earthquake (Soil Type D*)	Wildfire
Constableville, Village of	Constableville Village Historic District	■	■	■
Leyden, Town of	Constable Hall		■	■
Leyden, Town of	Edmund Wilson House			
Lowville, Village of	Franklin B. Hough House			
Lowville, Village of	Bateman Hotel			
Lowville, Village of	Lewis County Fairgrounds			
Lowville, Village of	Lewis County Soldiers' and Sailors' Monument			
Lowville, Village of	Lowville Presbyterian Church			
Lowville, Village of	Lowville Masonic Temple			
Lyons Falls, Village of	Gould Mansion Complex		■	
Lyons Falls, Village of	Forest Presbyterian Church and Manse		■	
Lyonsdale, Town of	"The Pines"		■	■
Martinsburg, Town of	Methodist Episcopal Church of West Martinsburg			■
Martinsburg, Town of	Martinsburg Town Hall			
Martinsburg, Town of	General Walter Martin House			
Osceola, Town of	Osceola Town Hall (Former Methodist Church)			
Port Leyden, Village of	Saint Mark's Church			■
Watson, Town of	Pine Grove Community Church			■
West Turin, Town of	Jonathon C. Collins House and Cemetery		■	

Asset Identification and Characterization

Population – Vulnerable Sectors (2000) ~ 20%

Table 3b.10
Vulnerable Sectors of the Population by Jurisdiction (2000 Census[1])

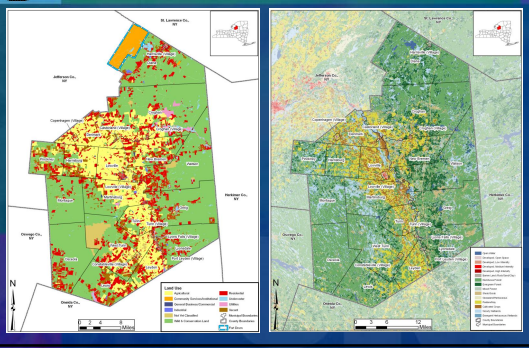
Jurisdiction	Total Population	Under 5 Years	Percent of Municipal Total	65 Years and over	Percent of Municipal Total	Total Vulnerable Population	Percent of Municipal Total
Castorland, Village of	306	20	6.5%	46	15.0%	66	21.6%
Constableville, Village of	303	19	6.2%	48	15.7%	67	22.0%
Copenhagen, Village of	865	100	11.6%	69	8.0%	169	19.5%
Croghan, Town of[2]	2,704	183	5.9%	369	11.7%	554	17.3%
Croghan, Village of	665	33	5.0%	147	22.1%	180	27.1%
Denmark, Town of	1,576	214	7.8%	268	9.8%	482	17.3%
Diana, Town of	1,008	101	6.1%	208	12.5%	309	18.6%
Greig, Town of	1,365	75	5.5%	199	14.6%	274	20.1%
Harrisburg, Town of	423	27	6.4%	36	8.5%	63	14.9%
Harrisville, Village of	653	40	6.1%	105	16.1%	145	22.2%
Lewis, Town of	857	48	5.6%	95	11.1%	143	16.7%
Leyden, Town of[2]	1,320	101	5.6%	219	12.2%	320	17.9%
Lowville, Town of	1,072	253	5.5%	948	20.8%	1,200	26.4%
Lowville, Village of	3,476	200	5.8%	747	21.3%	947	27.2%
Lyons Falls, Village of	591	43	7.3%	99	16.8%	142	24.0%
Lyonsdale, Town of[2]	1,023	84	6.6%	165	13.0%	249	19.6%
Martinsburg, Town of	1,249	92	7.4%	158	12.7%	250	20.0%
Montague, Town of	108	6	5.6%	15	13.9%	21	19.4%
New Bremen, Town of[2]	2,414	176	6.5%	308	11.3%	484	17.8%
Osceola, Town of	265	14	5.3%	36	13.6%	50	18.9%
Pinckney, Town of	319	13	4.1%	32	10.0%	45	14.1%
Port Leyden, Village of	665	38	5.7%	127	19.1%	165	24.8%
Turin, Town of	530	47	5.9%	122	15.4%	169	21.3%
Turin, Village of	263	10	3.8%	46	17.5%	56	21.3%
Watson, Town of[2]	1,987	105	5.3%	283	14.2%	388	19.5%
West Turin, Town of	835	115	6.9%	249	14.9%	364	21.7%
County Total	*26,944*	*1,855*	*6.1%*	*3,710*	*13.8%*	*5,165*	*19.9%*

Land Uses and Development Trends

- Overview of land use and land cover across entire planning area
- Discussion of land use and development trends in each jurisdiction
- Potential for future development in hazard areas (vacant parcel analysis, and per hazard)
- Responses to LUDT questionnaires (tabulated)

Land Uses and Development Trends

Land Use | Land Cover



Land Uses and Development Trends

Land Use Estimates

Land Use Category	Acres	%
Parks/Open Space	438,817	54.0%
Agricultural	153,349	18.9%
Residential	107,831	13.3%
Vacant	58,379	7.2%
Not Yet Classified	21,828	2.7%
Community Services/Institutional	20,963	2.6%
Utilities	8,087	1.0%
Industrial	1,879	0.2%
General Business/Commercial	978	0.1%
Water	294	0.04%
Total	*812,405*	*100%*

Land Uses and Development Trends

Vacant Land in Delineable Hazard Areas

Municipality	In Wildfire Hazard Area	In Flood Hazard Area	In Higher Risk Earthquake Area	Total in Delineable Hazard Areas	% of Municipality Land Area
Castorland	2	14	6	22	13%
Constableville	0	13	5	19	3%
Copenhagen	0	1	0	1	0%
Croghan	289	2,401	1,950	4,640	4%
Croghan (Village)	1	4	17	22	9%
Denmark	1,001	1,444	1,583	4,028	13%
Diana	492	3,195	1,633	5,320	6%
Greig	411	3,104	795	4,310	7%
Harrisburg	0	2,455	57	2,512	10%
Harrisville	28	47	59	133	29%
Lewis	257	4,629	616	5,502	13%
Leyden	201	1,393	317	1,911	9%
Lowville	375	201	401	977	4%
Lowville (Village)	6	26	0	32	3%
Lyons Falls	14	97	58	169	31%
Lyonsdale	208	2,407	932	3,548	8%
Martinsburg	94	2,256	169	2,518	5%
Montague	490	564	0	1,054	3%
New Bremen	0	2,917	2,317	5,234	15%
Osceola	22	1,787	110	1,919	3%
Pinckney	0	3,046	65	3,111	12%
Port Leyden	19	48	25	91	23%
Turin	78	1,075	161	1,314	7%
Turin (Village)	2	11	4	17	3%
Watson	702	2,981	1,710	5,394	7%
West Turin	0	4,094	84	4,178	7%

Estimates of Annualized Losses for Each Hazard

- Incorporates historical loss data where available
- Makes use of HAZUS results from state plan where available
- Damage information for entire County distributed among individual jurisdictions based on improvement values where appropriate
- Limitations of analysis:
  - Limited relevant historical data
  - Very conservative for some hazards
  - Structure-specific damages beyond current scope

Estimates of Annual Losses for Each Hazard

U_N = Unquantifiable but assumed negligible U_S = Unquantifiable but potentially significant

Table 3c.8
Summary of Annual Loss Estimates by Municipality, All Natural Hazards

Jurisdiction	Extreme Temperature	Extreme Wind	Tornado	Winter Storm	Dam Failure	Drought	Flood	Ice Jam	Earthquake	Landslide	Wildfire
Castorland, Village of	U_N	$5,418	$15	$3,102	U_N	$277	$746	U_N	$122	U_N	U_S
Constableville, Village of	U_N	$14,295	$41	$8,184	U_N	$824	$238	U_N	$323	U_N	U_S
Copenhagen, Village of	U_N	$31,319	$90	$17,930	U_N	$924	$0	U_N	$707	U_N	U_S
Croghan, Town of	U_N	$310,018	$887	$177,483	U_N	$16,007	$55,508	U_N	$7,003	U_N	U_S
Croghan, Village of	U_N	$57,949	$166	$33,175	U_N	$138	$1,075	U_N	$1,309	U_N	U_S
Denmark, Town of	U_N	$60,949	$174	$34,893	U_N	$39,754	$4,468	U_N	$1,377	U_N	U_S
Diana, Town of	U_N	$39,688	$114	$22,721	U_N	$251	$2,615	U_N	$897	U_N	U_S
Greig, Town of	U_N	$62,832	$180	$35,971	U_N	$1,773	$5,357	U_N	$1,419	U_N	U_S
Harrisburg, Town of	U_N	$23,253	$67	$13,312	U_N	$13,819	$0	U_N	$525	U_N	U_S
Harrisville, Village of	U_N	$18,978	$54	$10,863	U_N	$44	$594	U_N	$429	U_N	U_S
Lewis, Town of	U_N	$59,514	$170	$34,071	U_N	$2,460	$2,850	U_N	$1,344	U_N	U_S
Leyden, Town of	U_N	$36,780	$105	$21,056	U_N	$12,675	$1,506	U_N	$831	U_N	U_S
Louville, Town of	U_N	$43,718	$125	$25,028	U_N	$43,904	$748	U_N	$988	U_N	U_S
Louville, Village of	U_N	$87,730	$251	$50,236	U_N	$377	$260	U_N	$1,982	U_N	U_S
Lyons Falls, Village of	U_N	$38,830	$111	$22,230	U_N	$163	$2,758	U_N	$877	U_N	U_S
Lyonsdale, Town of	U_N	$52,479	$150	$30,044	U_N	$616	$6,430	U_N	$1,185	U_N	U_S
Martinsburg, Town of	U_N	$3,960	$11	$2,267	U_N	$41,144	$155	U_N	$89	U_N	U_S
Montague, Town of	U_N	$4,539	$13	$2,599	U_N	$182	$0	U_N	$103	U_N	U_S
New Bremen, Town of	U_N	$9,660	$28	$5,531	U_N	$16,164	$313	U_N	$218	U_N	U_S
Osceola, Town of	U_N	$11,881	$34	$6,802	U_N	$176	$83	U_N	$268	U_N	U_S
Pinckney, Town of	U_N	$16,579	$47	$9,491	U_N	$2,590	$0	U_N	$374	U_N	U_S
Port Leyden, Village of	U_N	$13,681	$39	$7,833	U_N	$44	$450	U_N	$309	U_N	U_S
Turin, Town of	U_N	$37,549	$107	$21,496	U_N	$16,693	$995	U_N	$848	U_N	U_S
Turin, Village of	U_N	$5,754	$16	$3,294	U_N	$905	$201	U_N	$130	U_N	U_S
Watson, Town of	U_N	$6,978	$20	$3,995	U_N	$3,823	$1,782	U_N	$1,158	U_N	U_S
West Turin, Town of	U_N	$38,349	$110	$21,954	U_N	$13,316	$0	U_N	$866	U_N	U_S
Lewis County Total	U_N	***$1,092,700***	***$1,125***	***$625,563***	U_N	***$229,075***	***$96,111***	U_N	***$24,861***	U_N	U_S

Damage Estimates

- Ranking of Primary Hazards by Quantified Annual Damage:
  1. Extreme Wind ~ $1,092,000 per year
  2. Winter Storm ~ $625,000 per year
  3. Drought ~ $229,000 per year
  4. Flood ~ $96,000 per year
  5. Earthquake ~ $24,000 per year
  6. Tornado~ $3,000 per year

Types of Mitigation Actions to Consider for Various Hazards

PLEASE READ BEFORE THE NEXT MEETING:

- RAID Section 6 – range of potential mitigation actions to address the profiled hazards
- Tip Sheet (towards the end of the RAID) – potential mitigation actions plus additional background and guidance
- FEMA reference material (final sections of the RAID)

Types of Mitigation Actions to Consider for Various Hazards

- To be used to initiate discussion and evaluation of potential mitigation actions
- Municipal representatives will need to identify a list of potential actions for their own jurisdiction for the next meeting
- Please think about:
  - Projects/actions that are location-specific
  - Actions that will address each of the profiled hazards

Next Steps

- Finalize RAID comments – by 2/23/10
- Initiate consideration of mitigation actions
- Mitigation Strategy Working Session (Target 3/02/10)
  - Document Prioritization/Implementation of Actions
  - 3 Worksheets – the key municipal deliverables, will be distributed in advance of the next meeting
- Municipalities to submit outreach logs
- Finalize plan maintenance/update text
- Compile full Draft Plan, submit to NYSEMO (3/25/10)

Next Steps

- Concurrent review by NYSEMO, County, municipalities, public and other stakeholders
- NYSEMO will forward the draft plan to FEMA for review or return with comments to be addressed
- FEMA review target is 45 days from receipt of draft
- FEMA return the plan as "Approvable pending adoption" or with comments to be addressed
- Formal adoption of final plan by County and participating municipalities

Questions and Answers

Consultant Contact Details

URS

Richard Franks, Project Manager
973-785-0700 ext. 449
richard_franks@urscorp.com

Our Commitment:
A FEMA-Approved Plan for Lewis County and its component municipalities

Lewis County, New York
Multi-Jurisdictional Hazard Mitigation Planning Project
Public Meeting on RAID
February 9, 2010 at 2:00 p.m.
Legislative Chambers Lewis County Courthouse, Lowville, NY

Meeting Minutes

ATTENDANCE

See Attached

AGENDA ITEMS DISCUSSED:

Welcome & Opening Remarks

Jim Martin, Director of Fire and Emergency Management, welcomed everyone to the session and explained the purpose of the public meeting. He then turned it over to Richard Franks, of URS Corporation.

Risk **A**ssessment **I**nterim **D**eliverable Overview

To begin, Mr. Franks gave a brief overview of the purpose of the plan and what hazard mitigation planning is. Mr. Franks then discussed the timeline of the plan and let the public know where we are at currently in the process.

Mr. Franks gave a presentation on the RAID document, including hazard identification, hazard profiles, asset identification and characterization, land uses and development trends, damage estimates, and types of mitigation actions to consider for various hazards. There are eleven major natural disasters that affect Lewis County:

- Extreme temperatures
- Extreme winds
- Tornado
- Winter storm
- Dam failure
- Drought
- Flood
- Ice jams
- Earthquake
- Landslide
- Wildfire

Mr. Franks discussed each of the hazards listed above in a bit more detail, as documented in the draft RAID.

Next Steps

At the end of the presentation on disasters, Mr. Franks led the group into the final phase of the plan: mitigation actions. Mr. Franks let the group know that there will be a work session planned in the next 3 weeks and municipalities will be asked to identify types of mitigation actions for their municipality.

Questions and Answers

The public/planning committee identified some items that should be addressed in the plan:

- Constable Hall is inaccurately identified in the Town of Leyden, and it should be listed as Town of West Turin.
- The North Lake Dam in Oneida County should be looked at as having a significant impact on Lewis County, should it fail.
- Table 3b3 inaccurately states the number of police barracks for the Town of Lowville.
- The Village of Castorland has only 1 school.

Closing Remarks

Mr. Martin thanked everyone for attending the meeting and asked that they please review the draft RAID, which can be found online at www.lewiscountyny.org.

Lewis County, New York
Multi-Jurisdictional Hazard Mitigation Planning Project
Public Meeting on RAID
February 9, 2010 at 7:00 p.m.
Legislative Chambers Lewis County Courthouse, Lowville, NY

Meeting Minutes

ATTENDANCE

See Attached

AGENDA ITEMS DISCUSSED:

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Jim Martin, Director of Fire and Emergency Management, welcomed everyone to the session and explained the purpose of the public meeting. He then turned it over to Richard Franks, of URS Corporation.

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Questions and Answers

The public/planning committee identified some items that should be addressed in the plan:

- Ms. Bullock asked about the necessity of outreach logs by each of the municipalities, because the county has done a lot of outreach on behalf of municipalities. Mr. Franks suggested the county identify that they have done outreach for all municipalities, but recommended that each municipality identify public meeting discussions relating to hazard mitigation on outreach logs, as well as posting the Fact Sheet that was distributed at the beginning of the process. It is most beneficial to all municipalities to show as much public outreach as possible.
- Ms. Bullock asked about municipalities with Severe Repetitive Loss properties and whether those municipalities will be required to identify mitigation actions regarding those properties. Mr. Franks suggested that those municipalities with SRL properties be prepared to identify mitigation strategies at the work session in March.

Closing Remarks

Mr. Martin thanked everyone for attending the meeting and asked that they please review the draft RAID, which can be found online at www.lewiscountyny.org.

Lewis County Multi-Jurisdictional
Natural Hazard Mitigation Plan
Mitigation Strategy Working Session
2:00 pm, March 2, 2010
Lewis County Search and Rescue Avis Graves Training Center,
West State Street, Lowville, NY

Agenda

- Welcome & Opening Remarksé é é é é é é é .é ..*James Martin, Lewis County Fire and Emergency Management*
- Reminderséééééééééééééééééé .....*Richard Franks, URS*
- Outreach and Public Comments.....*All*
- **Mitigation Strategy Working Session ……....*Richard Franks, URS***
  - ***FEMA Requirements***
  - ***The Role of Local Jurisdictions in Mitigation***
  - ***Evaluation and Prioritization of Mitigation Actions***
  - ***Developing Project Implementation Strategies***
  - ***Actions for Continued Compliance with the NFIP***
- To-Do Actions for Municipalitiesé é é é é . é é é é .....*Richard Franks, URS*
- Questions & Answers, Discussioné é é é é é .é ……..……*All*
- Closing Remarksé é é é é .....é é é é é é é .. ……*James Martin, LCFEM*
- Adjourn

Please remember to
SIGN IN
if you haven't already done so.
Thank you.

Multi-Jurisdictional Hazard Mitigation Plan

Mitigation Strategy Work Session
2-Mar-10

NAME	MUNICIPALITY	TITLE	PHONE	EMAIL
Sarah Bullock	Lewis Co. Planning		377-2024	sbullock@lewiscountyny.org
James M. Martin	FC-1		376-5305	jmartin@lewiscountyny.org
Verle Yelton	Lowville	Councilmen	942-2828	
RICHARD FRANKS	URS	CONSULTANT	973 785 0700	rchard_franks@URSCORP.com
Lou Raymond	NYSEG/90 Logan II	TEAM NORTHERN	315-529-0781	LOUIS.RAYMOND@SEG90.STATE.NY.US
Wm E [illegible]	Village of Croghan	Board member	346-687	
James E. [illegible]	Village of Croghan	Street+Water Supt.	346-1979	JZEHR2@TWCNY.RR.COM
Donna Loucks	Village of Castorland	Clerk-Treasurer	376-3895	dloucks2@twcny.rr.com
Katie Liendecker	Village Lyons Falls	village Trustee	348-8744	pliendec@twcny.rr.com
Kathy Manning	T/V Lowville		376-8070	Same —
Richard Dening	T/Lowville	SUPERINTENDENT	376-6426	lowvillehwy6@frontiernet.net
Clyde Jones	T/O Martinsburg	Supt.	376.2309	Mburghwy@ridgeviewtel.net
Rick Failing	T/O WEST TURIN	Superintendent	397-2231	
Grant Mosher	Village Constableville	Mayor	397-2075	

Multi-Jurisdictional Hazard Mitigation Plan

Mitigation Strategy Work Session

2-Mar-10

NAME	MUNICIPALITY	TITLE	PHONE	EMAIL
MARK BURCHENOUGH	CASTORLAND VILLAGE	Supt. of Publ Works	315 376 6185	
Warren W. Shaw	T/O Croghan	Hwy. Supt.	315-346-6722	WBGshaw79@Yahoo.com
Loren Lyndaker	T/O Harrisburg	Town Board	315-376-9419	
ALAN SCOUTEN	VILLAGE PORT LEYDEN	MAYOR	315-369-8381	
Nicholle B. Illhardt	Lewis Co SWCD	District Manager	315 376-6122	nbillhardt@lewiscountyny.org
ERIC F. FREDENBURG	V/LOWVILLE	CHIEF OF POLICE	315-376-6511	lowpolicechief@nnymail.com
Glen Gagnier	LCDC	Member	346-6705	ggagnier@frontiernet.net
Jerry King	Town of Lewis	Fill in for Town	942-4791	
Tom Gunn	Town of Greig	Councilman	315 348 6247	gunn.tp@gmail.com

Multi-Jurisdictional Hazard Mitigation Plan

Mitigation Strategy Work Session

2-Mar-10

NAME	MUNICIPALITY	TITLE	PHONE	EMAIL
Donald Nyboer	Leonardo	Councilman	348-8826	
Patrick Mahar	T/o Dennis	Highway Supt	493-3846	

Lewis County

Multi-Jurisdictional Hazard Mitigation Plan

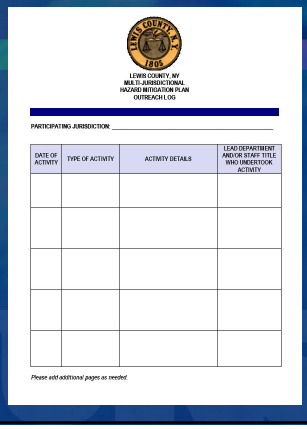
Mitigation Strategy Working Session
March 2, 2010
2:00 pm

Today's Agenda

- Welcome and Opening Remarks
- Reminders
- Outreach and Public Comments
- Mitigation Strategy Working Session
  - FEMA requirements
  - The role of local jurisdictions in mitigation
  - Completion of worksheets to evaluate and prioritize actions and develop implementation strategies
- Next Steps
- Questions and Discussion

Reminders

- Please remember to sign in
- Please submit your Outreach Log by March 18th – please record all activities intended to engage and alert the public to the plan



LEWIS COUNTY, NY
MULTI-JURISDICTIONAL
HAZARD MITIGATION PLAN
OUTREACH LOG

PARTICIPATING JURISDICTION: _____

DATE OF ACTIVITY	TYPE OF ACTIVITY	ACTIVITY DETAILS	LEAD DEPARTMENT AND/OR STAFF TITLE WHO UNDERTOOK ACTIVITY

Please add additional pages as needed.

Reminders

- Participating jurisdictions can submit any outstanding forms/questionnaires (LUDT, CA, Hazard ID) until March 18th.
- Comments on guidance memos (plan integration and maintenance text) by March 18th.
- After March 18th it will be too late to incorporate any new information into the Draft Plan.

Comments so far from the Public and/or Other Stakeholders?

- Please tell us what and from whom.
- We will incorporate comments into the appropriate section of the plan.
- Please let us know about any such comments by March 18th.

Background to Today's Session

- Mitigation actions worksheets initially mentioned at the RAID Q&A Session on February 9th, then distributed with guidance by the County on February 17th.
- RAID includes initial actions list, tip sheet, additional FEMA reference material, for selection of mitigation actions
- Return worksheets no later than March 18th.

IMPORTANT NOTE:

If you do not complete and return the mitigation worksheets, FEMA will not recognize your municipality as having sufficiently participated, the plan will not be approved for your jurisdiction, and your municipality will not be eligible to apply for FEMA mitigation grants for at least five years.

FEMA Requirements

Apply to EACH municipality on an individual basis:

- Identify and analyze a comprehensive range of actions for each hazard
- Select actions that address reducing the effects of hazards on both new and existing buildings and infrastructure
- Evaluate and prioritize actions related to continued compliance with the NFIP

FEMA Requirements

- Document the process and criteria used for evaluating and prioritizing the actions
- Assess the potential benefits and costs of each action and document the assessment
- Identify and document how each action will be implemented and administered, who will be responsible, resources for completion, targeted time frame?
- Identifiable action items for each participating jurisdiction

FEMA Requirements

Mitigation action items for each municipality should:

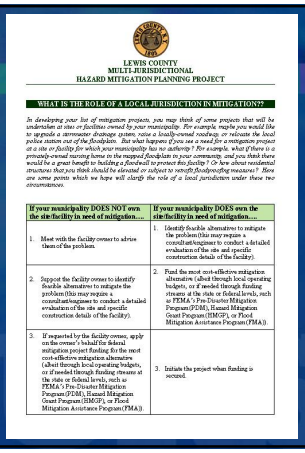
- aim to reduce the risk of damages from hazards
  - Protect assets and property from damage ✓
  - Emergency response X
  - General infrastructure investment X
- seek to address a range of profiled hazards
- be location-specific where possible/appropriate

The Role of a Local Jurisdiction

Your list of mitigation projects

- Projects at sites that the municipality owns
- Projects at sites owned by someone else

Municipalities may act as "sponsors" for actions to reduce damage to assets or property which is not actually municipally-owned.



LEWIS COUNTY
MULTI-JURISDICTIONAL
HAZARD MITIGATION PLANNING PROJECT

WHAT IS THE ROLE OF A LOCAL JURISDICTION IN MITIGATION??

In developing your list of mitigation projects, you may think of some projects that will be undertaken at sites or facilities owned by your municipality. For example, maybe you would like to upgrade a stormwater drainage system, raise a locally-owned roadway, or relocate the local police station out of the floodplain. But what happens if you see a need for a mitigation project at a site or facility for which your municipality has no authority? For example, what if there is a privately-owned nursing home in the mapped floodplain in your community, and you think there would be a great benefit to building a floodwall to protect this facility? Or how about residential structures that you think should be elevated or subject to retrofit floodproofing measures? Here are some points which we hope will clarify the role of a local jurisdiction under these two circumstances.

If your municipality DOES NOT own the site/facility in need of mitigation....	If your municipality DOES own the site/facility in need of mitigation....
1. Meet with the facility owner to advise them of the problem.	1. Identify feasible alternatives to mitigate the problem (this may require a consultant/engineer to conduct a detailed evaluation of the site and specific construction details of the facility).
2. Support the facility owner to identify feasible alternatives to mitigate the problem (this may require a consultant/engineer to conduct a detailed evaluation of the site and specific construction details of the facility).	2. Fund the most cost-effective mitigation alternative (albeit through local operating budgets, or if needed through funding streams at the state or federal levels, such as FEMA's Pre-Disaster Mitigation Program (PDM), Hazard Mitigation Grant Program (HMGP), or Flood Mitigation Assistance Program (FMA)).
3. If requested by the facility owner, apply on the owner's behalf for federal mitigation project funding for the most cost-effective mitigation alternative (albeit through local operating budgets, or if needed through funding streams at the state or federal levels, such as FEMA's Pre-Disaster Mitigation Program (PDM), Hazard Mitigation Grant Program (HMGP), or Flood Mitigation Assistance Program (FMA)).	3. Initiate the project when funding is secured.

The Role of a Local Jurisdiction: An Example

- The Proposed Project: Acquire 5 residential structures that have repeatedly flooded in the past.
- Your municipality's "action" is NOT to acquire the houses (unless your local budget has a lot of available funds).
- Your municipality's "action" is to meet with the homeowner to advise them of the risks they face and the benefits of acquisition, and apply to FEMA on their behalf for mitigation project grant funding.

Worksheet Completion

- The Worksheets:
  1. Evaluation and Prioritization of Actions
  2. Documenting an Implementation Strategy
  3. NFIP Worksheet

Evaluation and Prioritization of Actions

- FEMA's "**S T A P L E E**"
- Qualitative and subjective level of analysis of overall benefits and costs in lieu of formal benefit-cost analysis
- Acceptable for the planning phase – more formal analysis only required later when making actual grant applications
- Taken from STAPLEE Method B of FEMA guidance document 386-5

Evaluation and Prioritization of Actions

Socially acceptable

Technically feasible

Administratively possible

Politically favored

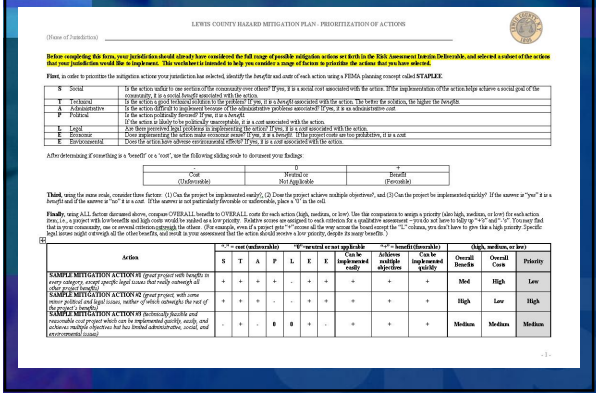
Legally possible

Economically viable

Environmental impact

(See pages 3 & 4 of the guidance handout)

Prioritization Worksheet – Page 1



LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF ACTIONS

(Name of Jurisdiction) _____

Before completing this form, your jurisdiction should already have considered the full range of possible mitigation actions set forth in the Risk Assessment Interim Deliverable, and selected a subset of the actions that your jurisdiction would like to implement. This worksheet is intended to help you consider a range of factors in prioritize the actions that you have selected.

First, in order to prioritize the mitigation actions your jurisdiction has selected, identify the benefits and costs of each action using a FEMA planning concept called **STAPLEE**.

S	Social	Is the action unfair to one portion of the community over others? If yes, it is a social cost associated with the action. If the implementation of the action helps achieve a social goal of the community, it is a social benefit associated with the action.
T	Technical	Is the action a good technical solution to the problem? If yes, it is a benefit associated with the action. The better the solution, the higher the benefit.
A	Administrative	Is the action difficult to implement because of the administrative problems associated? If yes, it is an administrative cost
P	Political	Is the action politically favorable? If yes, it is a benefit. If the action is likely to be politically unacceptable, it is a cost associated with the action.
L	Legal	Are there perceived legal problems in implementing the action? If yes, it is a cost associated with the action.
E	Economic	Does implementing the action make economic sense? If yes, it is a benefit. If the project costs are too prohibitive, it is a cost
E	Environmental	Does the action have adverse environmental effects? If yes, it is a cost associated with the action.

After determining if something is a 'benefit' or a 'cost', use the following sliding scale to document your findings:

"-"	"0"	"+"
Cost (Undesirable)	Neutral or Not Applicable	Benefit (Favorable)

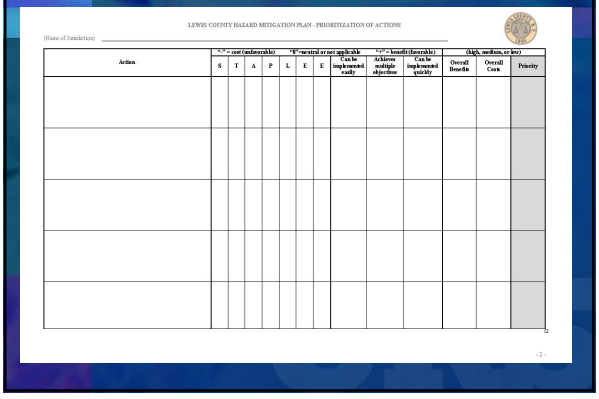
Third, using the same scale, consider three factors: (1) Can the project be implemented easily?, (2) Does the project achieve multiple objectives?, and (3) Can the project be implemented quickly? If the answer is "yes" it is a benefit and if the answer is "no" it is a cost. If the answer is not particularly favorable or unfavorable, place a '0' in the cell.

Finally, using ALL factors discussed above, compare OVERALL benefits to OVERALL costs for each action (high, medium, or low). Use this comparison to assign a priority (also high, medium, or low) for each action. Here, i.e., a project with low benefits and high costs would be ranked as a low priority. Relative scores are assigned to each criterion for a qualitative assessment – you do not have to tally up "+'s" and "-'s". You may find that in your community, one or several criterion outweigh the others. (For example, even if a project gets "+" scores all the way across the board except the "L" column, you don't have to give this a high priority. Specific legal issues might outweigh all the other benefits, and result in your assessment that the action should receive a low priority, despite its many benefits.)

Action	"-" = cost (undesirable)			"0"=neutral or not applicable			"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefit	Overall Cost	Priority
SAMPLE MITIGATION ACTION #1 *(great project with benefits in every category, except specific legal issues that really outweigh all other project benefits)*	+	+	+	+	-	+	+	+	+	+	Med	High	Low
SAMPLE MITIGATION ACTION #2 *(great project, with some minor political and legal issues, neither of which outweighs the rest of the benefits)*	+	+	+	-	-	+	+	+	+	+	High	Low	High
SAMPLE MITIGATION ACTION #3 *(technically feasible and reasonable-cost project which can be implemented quickly, easily, and achieves multiple objectives but has limited administrative, social, and environmental issues)*	-	+	-	0	0	+	-	+	+	+	Medium	Medium	Medium

- 1 -

Prioritization Worksheet – Page 2



LEWIS COUNTY HAZARD MITIGATION PLAN - PRIORITIZATION OF ACTIONS

(Name of Jurisdiction) _____

Action	"-" = cost (undesirable)			"0"=neutral or not applicable			"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefit	Overall Cost	Priority

- 2 -

Evaluation and Prioritization of Actions

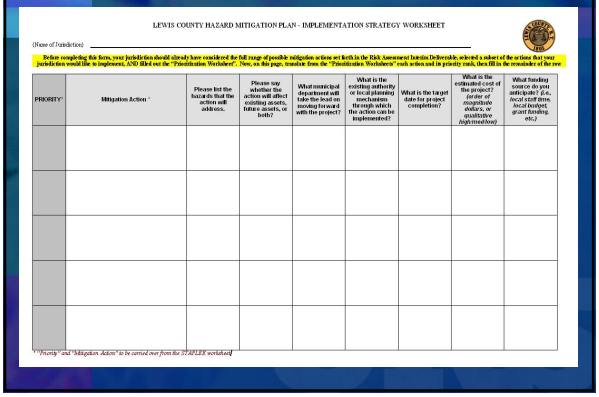
Points to remember when completing Worksheet 1:

- The STAPLEE criteria do not have to be equally weighted.
- One negative/cost may outweigh all the other positives/benefits – and vice versa.
- The ultimate priority of each action does not have to be derived from a simple sum of all the + and -
- It is not required to document any background considerations of the weighting of each criteria for each action, only that the benefits/costs of criteria were considered and evaluated.

Implementation Strategy Development

- Carry over all actions and their priorities from worksheet 1
- Which hazards will the project address?
- Will the project affect existing assets, future assets, or both?
- Who/which department will take the lead?
- What authority does the municipality have to do the project?
- When will the project be completed?
- How much will the project cost? (ballpark $)
- Where will the funds come from to do the work?

Implementation Strategy Worksheet



LEWIS COUNTY HAZARD MITIGATION PLAN - IMPLEMENTATION STRATEGY WORKSHEET

(Name of Jurisdiction) _____

Before completing this form, your jurisdiction should already have considered the full range of possible mitigation actions set forth in the Risk Assessment Interim Deliverable, selected a subset of the actions that your jurisdiction would like to implement, AND filled out the "Prioritization Worksheet". Now, on this page, transfer from the "Prioritization Worksheet" each action and its priority rank, then fill in the remainder of the row.

PRIORITY*	Mitigation Action *	Please list the hazards that the action will address.	Please say whether the action will affect existing assets, future assets, or both?	What municipal department will take the lead on moving forward with the project?	What is the existing authority or local planning mechanism through which the action can be implemented?	What is the target date for project completion?	What is the estimated cost of the project? (order of magnitude estimate, in qualitative degrees/now)	What funding source do you anticipate? (i.e., local staff time, local budget, grant funding, etc.)

*"Priority" and "Mitigation Action" to be carried over from the STAPLEE worksheet

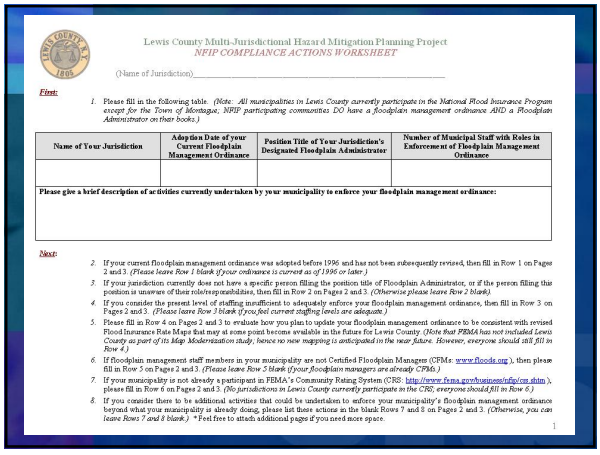
NFIP Compliance Actions Worksheet

All municipalities in Lewis County (except for the Town of Montague) currently participate in the National Flood Insurance Program:

- Every municipality (except for the Town of Montague) must evaluate and prioritize actions related to continued compliance with the NFIP.
- The Town of Montague is encouraged to consider joining the NFIP as a mitigation action and evaluate this action using the previous worksheets.

NFIP Compliance Actions Worksheet

- NFIP worksheet page 1 includes guidance and asks for basic NFIP information.
  - Every NFIP-participating municipality is required to designate a floodplain administrator on joining.
- NFIP worksheet page 2 is similar in concept and format to the prioritization worksheet.
- NFIP worksheet page 3 is basically the same as the implementation worksheet.
- NFIP worksheet includes suggested actions but municipalities are free to add more.



Lewis County Multi-Jurisdictional Hazard Mitigation Planning Project

NFIP COMPLIANCE ACTIONS WORKSHEET

(Name of Jurisdiction)_____

First:

1. Please fill in the following table. *(Note: All municipalities in Lewis County currently participate in the National Flood Insurance Program except for the Town of Montague; NFIP participating communities DO have a floodplain management ordinance AND a Floodplain Administrator on their books.)*

Name of Your Jurisdiction	Adoption Date of your Current Floodplain Management Ordinance	Position Title of Your Jurisdiction's Designated Floodplain Administrator	Number of Municipal Staff with Roles in Enforcement of Floodplain Management Ordinance
Please give a brief description of activities currently undertaken by your municipality to enforce your floodplain management ordinance:			

Next:

2. If your current floodplain management ordinance was adopted before 1996 and has not been subsequently revised, then fill in Row 1 on Pages 2 and 3. *(Please leave Row 1 blank if your ordinance is current as of 1996 or later.)*
3. If your jurisdiction currently does not have a specific person filling the position title of Floodplain Administrator, or if the person filling this position is unaware of their roles/responsibilities, then fill in Row 2 on Pages 2 and 3. *(Otherwise please leave Row 2 blank.)*
4. If you consider the present level of staffing insufficient to adequately enforce your floodplain management ordinance, then fill in Row 3 on Pages 2 and 3. *(Please leave Row 3 blank if you feel current staffing levels are adequate.)*
5. Please fill in Row 4 on Pages 2 and 3 to evaluate how you plan to update your floodplain management ordinance to be consistent with revised Flood Insurance Rate Maps that may at some point become available in the future for Lewis County. *(Note that FEMA has not included Lewis County as part of its Map Modernization study, hence no new mapping is anticipated in the near future. However, everyone should still fill in Row 4.)*
6. If floodplain management staff members in your municipality are not Certified Floodplain Managers (CFMs: www.floods.org), then please fill in Row 5 on Pages 2 and 3. *(Please leave Row 5 blank if your floodplain managers are already CFMs.)*
7. If your municipality is not already a participant in FEMA's Community Rating System (CRS: http://www.fema.gov/business/nfip/crs.shtm), please fill in Row 6 on Pages 2 and 3. *(No jurisdictions in Lewis County currently participate in the CRS; everyone should fill in Row 6.)*
8. If you consider there to be additional activities that could be undertaken to enforce your municipality's floodplain management ordinance beyond what your municipality is already doing, please list these actions in the blank Rows 7 and 8 on Pages 2 and 3. *(Otherwise, you can leave Rows 7 and 8 blank.)* *Feel free to attach additional pages if you need more space.

1

Lewis County Multi-Jurisdictional Hazard Mitigation Planning Project
NFIP COMPLIANCE ACTIONS WORKSHEET

(Name of Jurisdiction)_____

PRIORITIZATION

NFIP Compliance Action	"-" = cost (unfavorable)				"0"=neutral or not applicable			"+" = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
1. Update/revise floodplain management ordinances to comply with latest FEMA regulations													
2. Designate/install a specific person to be your municipality's Floodplain Administrator													
3. Add/train sufficient members of staff to adequately enforce NFIP regulations/floodplain management ordinances													
4. Update/revise floodplain management ordinances to be consistent with potential future new FIRMs													
5. Require staff involved in Floodplain management and ordinance enforcement to become Certified Floodplain Managers (CFMs)													
6. Join the Community Rating System (CRS)													
7.													
8.													

2

Lewis County Multi-Jurisdictional Hazard Mitigation Planning Project
NFIP COMPLIANCE ACTIONS WORKSHEET

(Name of Jurisdiction)_____

IMPLEMENTATION STRATEGY

Priority	NFIP Compliance Action	Applies to Community Assets (Existing / New / Both)	Primary Department Responsible	Existing Local Planning Mechanism through which the action will be implemented	Target Date	Cost Estimate	Funding Source
	1. Update/revise floodplain management ordinances to comply with latest FEMA regulations						
	2. Designate/install a specific person to be your municipality's Floodplain Administrator						
	3. Add/train sufficient members of staff to adequately enforce NFIP regulations/floodplain management ordinances						
	4. Update/revise floodplain management ordinances to be consistent with potential future new FIRMs						
	5. Require staff involved in Floodplain management and ordinance enforcement to become Certified Floodplain Managers (CFMs)						
	6. Join the Community Rating System (CRS)						
	7.						
	8.						

3

To submit your worksheets:

- Richard Franks
  - richard_franks@urscorp.com
  - Tel: 973 785 0700
  - Fax: 973 812 0985

    URS Corporation

    201 Willowbrook Blvd, 3rd Floor

    Wayne, NJ 07470-7005
- Sarah Bullock
  - sbullock@lewiscountyny.org
  - fax: 315 377 3137

Next Steps

- Submit comments on the RAID and any other outstanding deliverables by March 18th
- If you are not submitting worksheets today, please email or fax to URS or the County no later than March 18th
- FEMA return the plan as "Approvable pending adoption" or with comments to be addressed
- To be placed on County website for review/download
- Local comments on Draft by April 23rd, 2010

Next Steps

- Concurrent review by County, municipalities, other stakeholders, public, and NYSEMO → FEMA
- NYSEMO will forward the draft plan to FEMA for review or return with comments to be addressed
- FEMA review target is 45 days from receipt of draft
- Draft Plan targeted for completion by March 25th
- Formal adoption of final plan by County and fully participating municipalities

Questions???

Lewis County, New York
Multi-Jurisdictional Hazard Mitigation Planning Project
Mitigation Strategy Working Session
March 2, 2010 at 2:00 p.m.
Lewis County Search and Rescue Training Center, Lowville, NY

Meeting Minutes

ATTENDANCE

See Attached

AGENDA ITEMS DISCUSSED:

Welcome & Opening Remarks

Jim Martin, Director of Fire and Emergency Management, welcomed everyone to the session and explained the purpose of the work session. He then turned it over to Richard Franks, of URS Corporation.

Reminders

To begin, Mr. Franks gave a brief overview of the purpose of the plan and what hazard mitigation planning is. Mr. Franks then discussed the timeline of the plan and let the attendees know where we are at currently in the process. Mr. Franks spoke specifically about the need to fill out the public outreach logs and distributed them to those who needed a copy.

Mr. Franks explained that participating jurisdictions that have not yet filled out the 3 questionnaires can still get them completed and submitted by March 18th. He asked that comments on the guidance memos be submitted by March 18th and reiterated that March 18th is the deadline for any information to be incorporated into the draft plan.

Outreach and Public Comments

Mr. Franks asked for any comments from the public or other stakeholders. The Village of Croghan and the Town of Harrisburg had comments to the draft RAID that were specific to their town and village. Mr. Franks took the information and will incorporate it into the draft plan.

Mitigation Strategy Working Session

Mr. Franks made an important note at the beginning of the working session reminding each municipality that FEMA will not recognize a municipality as having sufficiently participated if the municipality does not complete the mitigation worksheets.

Mr. Franks reviewed the FEMA requirements:

- identify and analyze a comprehensive range of actions for each hazard
- select actions that address reducing the effects of hazards on both new and existing infrastructure
- evaluate and prioritize actions related to compliance with the National Flood Insurance Program
- documentation of the process used for evaluating and prioritizing actions

- assessment of the potential benefits and costs of each action
- identify how each action will be administered and implemented

Also, it was noted that the mitigation action items should focus on reducing the risk of damages, seek to address a range of profile hazards, and be location-specific where possible.

Mr. Franks noted that projects listed as action items in the plan can be located at sites owned by the municipality and by private property owners who the municipality will work with to mitigate the hazard.

The worksheets were reviewed. Mr. Franks explained FEMA's STAPLEE method of evaluating actions. The group went through the Evaluation and Prioritization of Actions and Implementation Strategy worksheets together and discussed examples that would be included. The worksheets have instructions that will help guide the municipality when completing them.

Next, Mr. Franks reviewed the NFIP Compliance Actions worksheet. There were many questions about floodplain management ordinances and whether a municipality has one on file. Mr. Franks explained that any municipality that is a member of the National Flood Insurance Program (NFIP) should have a floodplain management ordinance on file. He also explained the worksheet and that if the community is unaware of an ordinance, they could take this opportunity to update their ordinance to comply with the latest FEMA requirements.

To-Do Actions for Municipalities

The attendees were encouraged to take their worksheets back to their communities and work together at identifying mitigation strategies. Sarah Bullock, of Lewis County Economic Development and Planning, offered to assist any municipality with the paperwork. Mr. Franks gave the group his contact information and offered business cards to the attendees. Mr. Franks asked that all worksheets be submitted to him by March 18th, or to Ms. Bullock at the county.

Questions

A brief discussion began regarding potential mitigation actions that could be implemented with this plan. Repetitive Loss Properties were discussed because there are three communities that have repetitive loss properties that should be addressed.

Closing Remarks

Mr. Martin thanked everyone for attending the meeting and asked that they contact Ms. Bullock if they have any questions about the worksheets.

Lewis County Multi-Jurisdictional
Natural Hazard Mitigation Plan
Presentation of the Draft Plan
Tuesday, May 4th, 2010 (3:00 pm)
Lewis County Legislative Chambers
7660 North State Street, Lowville, New York

Agenda

- Welcome & Opening Remarksé é é é é é é é é .*James Martin, LCFEM*

- Overview of the Projecté é é é é ..... *Richard Franks, URS*

    - Purpose of the Plan
        - Why Prepare a Hazard Mitigation Plan?
        - What is a Multi-Jurisdictional Plan?
    - The Plan Development Process
    - The Role of Participating Jurisdictions, the Consultant, the Public & Other Stakeholders
    - Risk Assessment Key Steps
        - Hazard Identification
        - Profiled Hazards
        - Asset Identification
        - Damage Estimation
    - Land Use and Development, Capabilities and Resources
    - Mitigation Strategy
        - Types of Actions Considered
        - Actions Selected, Evaluated and Prioritized by Participating Jurisdictions
    - Plan Integration, Maintenance, Updates
    - Next Steps

- Questions & Discussioné .é é é é .é é é é é é .é é é ..é é ...*Open to All*

- Closing Remarksé é é é é é é é é é é é é é é é *James Martin, LCFEM*

- Adjourn

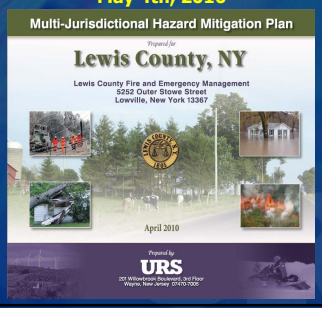
Please remember to
SIGN IN
if you haven't already done so.
Thank you.

Lewis County Multi-Jurisdictional Hazard Mitigation Plan
Presentation of the Draft Plan – May 4, 2010 (3:00 pm)
Lewis County Legislative Chambers
7660 North State Street, Lowville, NY

Last Name	First Name	Representing	Email Address	Phone
Lucas	Richard	Lewis County	rlucas@northnet.org	315-688-4140
Francis	Richard	URS	richard_francis@urscorp.com	973 785 0700
King	Jerry	Lewis County	buckshotjc@yahoo.com	(315)942-4791
Fanning	Charles	Lewis County	cfanning40@TWCny.com	(315) 688-2545
Bullock	Sara	Lewis Co. Planning	sbullock@lewiscountyny.org	315-377-2024
Martin	James	Lewis Co. Em	jmartin@lewiscountyny.org	315-376-5305
BOYD	JOHN	LEWIS CO. LEG.		376-3580
Virkler	Eric	ED + Planning Office	evirkler@lewiscountyny.org	376-5422
Roy	Vicki	Lewis Co Treas.	vroy@lewiscountyny.org	376-5322
Pendergast	David	Lewis Co. Manager		376-5355
Hathaway	Phil	Legislature		543-2828

Lewis County Multi-Jurisdictional Natural Hazard Mitigation Plan

Presentation of the Draft Plan
May 4th, 2010



Agenda:

- Welcome & Opening Remarks: James Martin, LCFEM
- Purpose of the Plan
- The Plan Development Process
- The Roles of the Various Parties Involved
- The Risk Assessment
- The Mitigation Strategy
- Plan Status, Next Steps
- Questions and Discussion
- Closing Remarks, Adjourn

Consultants

URS

Richard Franks, Project Manager
973-785-0700 ext. 449
richard_franks@urscorp.com

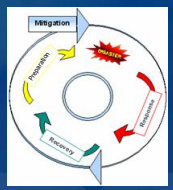
Our Commitment:
A FEMA-approved Plan for
Lewis County and participating municipalities

Mitigation and Mitigation Planning

- Hazard Mitigation is any sustained action taken to reduce or eliminate long-term risk to life and property from a hazard event.
- Hazard Mitigation Planning is a **process** for State, local, and Indian Tribal governments to identify policies, activities, and tools to implement mitigation actions.
- The Hazard Mitigation Plan is the final document that records all aspects of the process and provides a manual/reference for mitigation activities in the next five years (and beyond).

Purpose of the Plan: Why Develop a Hazard Mitigation Plan?

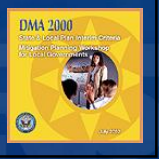
- Study natural hazards, evaluate their effects, and identify hazard mitigation measures that will reduce risks.
- Mitigation planning leads to judicious selection of risk reduction actions and established funding priorities.
- Implementation of mitigation actions is intended to reduce the costs of a future disaster.



Purpose of the Plan: Why Develop a Hazard Mitigation Plan?

Disaster Mitigation Act of 2000

- FEMA-approved plan is required for all jurisdictions wishing to apply for FEMA grants for hazard mitigation projects.
- Plan preparation is funded by a FEMA grant: no out-of-pocket cost to County/municipalities
- No active penalty for non-participation
- No effect on eligibility for post disaster assistance/recovery funds



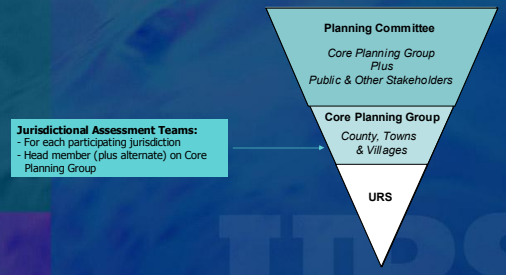
Purpose of the Plan: What is a Multi-Jurisdictional Plan?

- Communities join together to participate in a single local mitigation plan development process.
- Common:
  - Planning Process
  - Hazards
  - Goals
  - Plan Maintenance Procedures
- Unique:
  - Risks
  - Mitigation Actions
  - Participation
  - Plan Adoption
- Each jurisdiction identifies its own set of mitigation actions for the plan
- No competition between municipalities

Plan Timeline to Date

- Initiation: March 31, 2009
- Kickoff with municipalities: May 21, 2009
- Risk Assessment Interim Deliverable: January 8, 2010
- Risk Assessment Meeting: February 10, 2010
- Mitigation Strategy Working Session: March 2, 2010
- Draft Plan complete: April 7, 2010
- NYSEMO Review complete: April 22, 2010
- Draft plan revision for NYSEMO comments: Ongoing

Organizational Structure of the Planning Group



Planning Group Roles: Lewis County

- Lead Agency
  - Procure grant funding
  - Hire Consultant
  - Administer contract
  - Disseminate information and encourage participation
  - Arrange meetings
  - Host Plan web page
  - Submit questionnaires/wish list items
  - Identify County-specific mitigation actions
  - Formally adopt final plan by resolution

Planning Group Roles: Municipalities

- Participate in the plan by:
  - Attend meetings
  - Submit questionnaires/worksheets/wish list items
  - Review draft plan sections
  - Identify jurisdiction-specific mitigation action items
  - Publicize the plan locally
  - Formally adopt the plan by resolution

Municipal Participation

- All 26 notified the County of intent to participate
- All 26 Participated to some degree
- 20 (plus the County) participated fully:

Castorland	Harrisburg	Montague
Constableville	Lewis (Town)	Martinsburg
Croghan (Town)	Leyden	Osceola
Croghan (Village)	Lowville (Town)	Pinckney
Denmark	Lowville (Village)	Port Leyden
Diana	Lyons Falls	West Turin
Greig	Lyonsdale	

Municipal Participation

- Participated to some degree:
  - Attended at least one meeting and/or submitted at least one preliminary deliverable
- Participated Fully:
  - Attended at least one meeting and/or submitted at least one preliminary deliverable
  - Submitted key mitigation action deliverables

Planning Group Roles: Consultant (URS)

- Walk the County and participating municipalities through the plan process
- Provide guidance, advice, and information
- Provide material and suggestions for web page
- Provide mitigation action evaluation/prioritization tools
- Make presentations at meetings
- Compile and author draft and final Plan
- Provide sample adoption resolution
- Maintain dialogue with County and municipalities

Planning Group Roles: Other Stakeholders and Public

- Other stakeholders: institutions, non-profits, large local businesses/employers, regional planning associations, neighboring jurisdictions, utility providers, environmental groups, etc.

Ask questions, provide input, and voice concerns

- Comment on the risk assessment:
  - Historic hazard events
  - Specific hazard impacts
- Contribute to the development of the mitigation strategy:
  - Provide general or specific suggestions
  - Supply pertinent data or supporting information

The Plan Development Process

- Researching a full range of **natural** hazard events to determine which are the most prevalent;
- Identifying the location, extent of hazard areas, and the probability of occurrence;
- Identifying assets located within hazard areas;
- Estimating potential damage/losses;
- Evaluating and prioritizing mitigation goals and actions to reduce or avoid long-term vulnerabilities to the prevalent hazards.

Key Steps: Hazard Identification

Initial Evaluation of a full range of natural hazards

Summary Results of the Hazard Identification and Evaluation Process

ATMOSPHERIC
- ☐ Avalanche
- ☑ Extreme Temperatures
- ☑ Extreme Wind
- ☐ Hailstorm
- ☐ Hurricane and Tropical Storm
- ☐ Lightning
- ☐ Nor'easter
- ☑ Tornado
- ☑ Winter Storm

HYDROLOGIC
- ☐ Coastal Erosion
- ☑ Dam Failure
- ☑ Drought
- ☑ Flood
- ☑ Ice Jams
- ☐ Storm Surge
- ☐ Wave Action

GEOLOGIC
- ☑ Earthquake
- ☐ Expansive Soils
- ☑ Landslide
- ☐ Land Subsidence
- ☐ Tsunami
- ☐ Volcano

OTHER
- ☑ Wildfire

23 natural hazards evaluated
11 considered significant enough for further evaluation through risk assessment

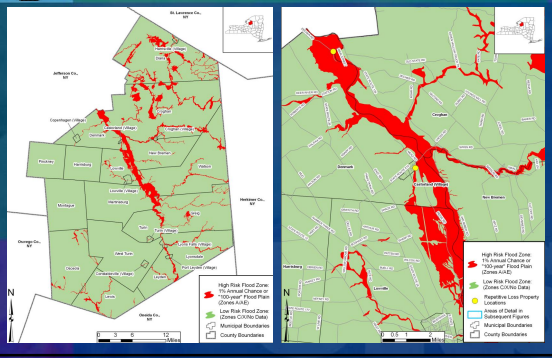
Key Steps: Hazard Profiles

- Description of hazard
- Location of hazard area
- Extent (magnitude or severity)
- Previous occurrences
- Probability/likelihood of future occurrences

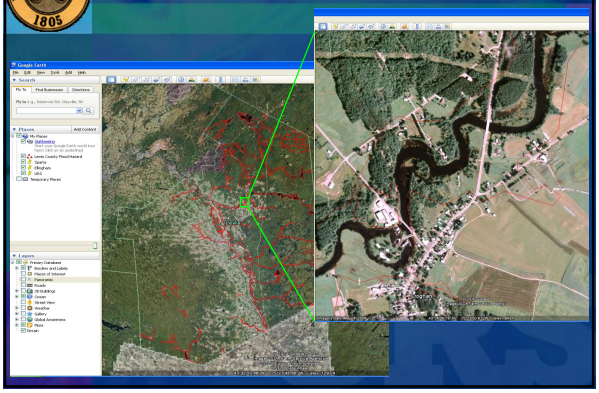
Key Steps: Hazard Profiles

- **County-wide** hazards:
  (uniform risk of occurrence)
  - Extreme Temperatures
  - Extreme Wind
  - Winter Storms
  - Tornado
- **Location-specific** hazards:
  (identifiable hazard areas)
  - Flood
  - Earthquake
  - Ice Jam
  - Dam Failure
  - Landslide
  - Drought
  - Wildfire

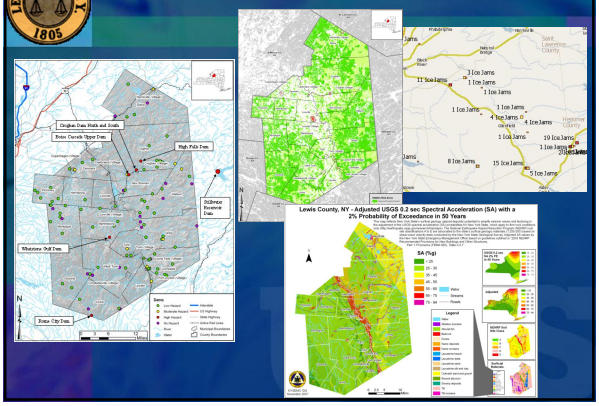
Hazard Profiles: Flood



Hazard Profiles: Flood



Hazard Profiles



Key Steps: Asset Identification

- Quantifies what is exposed to hazards
- Key types of assets inventoried and plotted in delineable hazard areas:

  - Improved property
  - Emergency facilities
  - Utilities and infrastructure
  - Other key facilities
  - Historic & cultural resources
- 47 assets located in delineable hazard areas
  - 4 Emergency facilities
  - 39 Infrastructure and utilities
  - 4 Other key facilities

Asset Identification

Improved Property in Delineated Hazard Areas

Percentage of Improved Property in Delineated Hazard Areas

Municipality	Total Value of Improvements	High Flood Risk (A/AE Zones)	Wildfire	Earthquake (Soil Types D & E)
Castorland, Village of	$4,536,601	5%	33%	45%
Constableville, Village of	$11,969,739	5%	35%	22%
Copenhagen, Village of	$26,225,170	0%	10%	0%
Croghan, Town of	$259,596,262	52%	42%	81%
Croghan, Village of	$48,524,225	5%	14%	99%
Denmark, Town of	$51,035,932	7%	18%	25%
Diana, Town of	$33,233,076	15%	65%	45%
Greig, Town of	$52,613,343	19%	78%	8%
Harrisburg, Town of	$19,470,912	0%	34%	2%
Harrisville, Village of	$15,891,401	9%	37%	57%
Lewis, Town of	$49,834,257	34%	66%	41%
Leyden, Town of	$30,798,285	9%	34%	13%
Lowville, Town of	$36,607,940	5%	20%	16%
Lowville, Village of	$73,479,434	0%	9%	0.4%
Lyons Falls, Village of	$32,514,533	8%	46%	75%
Lyonsdale, Town of	$43,945,874	35%	55%	30%
Martinsburg, Town of	$3,315,970	11%	23%	7%
Montague, Town of	$3,881,003	0%	67%	0.2%
New Bremen, Town of	$8,089,227	9%	41%	69%
Osceola, Town of	$9,948,744	2%	78%	4%
Pinckney, Town of	$13,832,466	0%	53%	1%
Port Leyden, Village of	$11,456,300	6%	31%	19%
Turin, Town of	$31,441,775	1%	52%	11%
Turin, Village of	$4,818,300	10%	23%	6%
Watson, Town of	$5,843,340	13%	74%	43%
West Turin, Town of	$32,111,809	0%	43%	5%
County Total	$914,683,118	23%	46%	42%

Key Steps: Damage Estimation

- Estimate potential losses (dollars/ qualitative) to identify centers where the cost of potential damage is the highest (*estimates have significant limitations*):
- Extreme wind ~ $1,092,000 per year
- Winter storms ~ $625,000 per year
- Drought ~ $229,000 per year
- Flood ~ $96,000 per year
- Earthquake ~ $24,000 per year
- Others not currently/easily quantifiable, assumed negligible

Key Steps: Capabilities and Resources, Land Use and Development Trends

- Land Use and Development Trends
  - Where is new development likely and how much might be in hazard areas?
  - Are there any codes/regulations in place to provide a certain degree of protection from natural hazards?
- Capabilities and Resources
  - Plans, codes, ordinances, and sources of funding currently in place which can contribute to, or be utilized for, hazard mitigation
  - Identify gaps at Local Municipalities, County level
  - Federal Technical Assistance and Funding sources

Key Steps: Mitigation Strategy

- Document goals
- Consider wide range of actions
- Select appropriate actions
- Evaluate and prioritize selected actions
- Qualitative benefit/cost exercise on seven criteria
- Identify responsible party, potential funding sources, and time frame for implementation
- Actions to continue/enhance compliance with NFIP

Key Steps: Mitigation Strategy

- Initial list of 80+ suggested actions under 13 goals (covering all profiled hazards) to launch discussion
- 140+ specific actions Identified, evaluated and prioritized by the County and the 20 fully participating municipalities
- Also each participating municipality evaluated actions specifically intended to continue and enhance compliance with the NFIP

Key Steps: Mitigation Strategy

- Hazards most commonly addressed:
  - Flooding
  - Extreme winds
  - Winter storms
- Other hazards featured:
  - Dam failures
  - Extreme temperatures
  - Ice jams
  - Wildfires
- Also multi-hazard/generic actions

Mitigation Strategy Examples

See Appendices B and C in the Draft Plan

- Flood
  - Road Elevation
  - Culvert and storm drain replacement
  - Stream clearance
  - River gages for flood warning
  - Relocate wastewater treatment facility out of floodplain
- Winter Storms
  - Snow fencing
  - Landscaping practices
  - Retrofit critical facilities to prevent ice damage
  - Winter storm preparedness education
  - Revise snow removal/disposal procedures

Mitigation Strategy Examples

See Appendices B and C in the Draft Plan

- Extreme Winds
  - Tree trimming/removal near infrastructure
  - Development and enforcement of wind-resistant building codes
- Other
  - Repair/rehabilitate municipally-owned dam
  - Liaise with external dam owners to improve safety compliance
  - Coordinate with local agencies to identify/evacuate vulnerable sectors of the population during extreme temperature events
  - Identify and map wildland access points for wildfire control
  - Weather monitoring and alarm systems
  - Enhanced training for local staff tasked with enforcing compliance with hazard-related codes and ordinances

Key Steps Plan Integration and Update

Integration of mitigation plan into:

- Job descriptions
- Other local plans
- Permitting vehicles

Plan Maintenance

- Final Plan is a ñliving documentò
- DMA 2000 requires updates, 5 year cycle
- Regular monitoring and review of progress

Plan Status, Next Steps

- Draft Plan completed April 7, 2010
- Review comments from NYSEMO received April 29, 2010
- Submit revised Draft Plan to FEMA, 45-day review target
- Comments on the draft are still welcome
- FEMA review: Required / Recommended Revisions
- Draft Plan will be "Approvable Pending Adoption"
  - Approvable (or not) on a jurisdictional level
- Formal adoption by resolution
  - County and all participating municipalities
- Maintenance and update cycle

FEMA Grant Programs Tied To Having an Approved and Adopted Plan In Place

Participating Jurisdictions will be eligible to apply for mitigation projects under these FEMA programs:

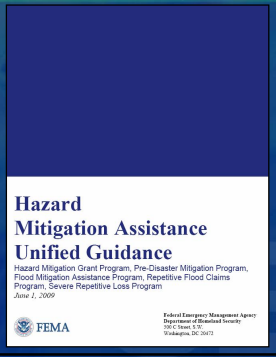
- Hazard Mitigation Grant Program (HMGP)
- Pre-Disaster Mitigation (PDM)
- Flood Mitigation Assistance (FMA)
- Severe Repetitive Loss (SRL)

"Unified Hazard Mitigation Assistance" or "Unified HMA"

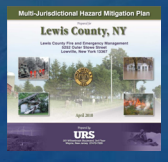
Applications not restricted to actions/projects identified in the Plan

Hazard Mitigation Assistance Guidance

http://www.fema.gov/library/viewRecord.do?id=3649



Questions and Discussion



Lewis County Hazard Mitigation web page:

http://lewiscountyny.org/content/Generic/View/59

The full draft plan (PDF format):

http://lewiscountyny.org/content/Generic/View/106

APPENDIX H –

LOCAL MEDIA COVERAGE

Watertown Daily Times

County drafting pre-disaster plan

Date: Friday, September 26, 2008
Section: Lewis
Edition: Both
Page: B5
Dateline: LOWVILLE

By **STEVE VIRKLER**
TIMES STAFF WRITER

Lewis County officials are beginning work on a pre-disaster mitigation plan intended to improve emergency preparedness and open extra federal funding sources." That plan opens us up to a lot of avenues for help," said James M. Martin, the county's emergency services director.

The $100,000 project will be funded primarily through a $75,000 federal grant, Mr. Martin said. The county is responsible for 25 percent of the project cost, but that $25,000 may be covered by in-kind services, he said.

Most of the federal money likely will be used to hire a consulting firm to help gather information and create the plan, Mr. Martin said.

County Economic Development Department officials are compiling a list of firms that could handle the project and, after receiving legislative approval, plan to request proposals from them.

County officials hope to select a consultant by December or January, then start gathering input from county and local officials, Mr. Martin said. "It's going to involve all the towns and villages," he said.

As with the ongoing development of a countywide comprehensive plan, a steering committee will be formed to help the consultant gather needed information, county planner Sarah J. Bullock said.

It will likely take at least a year to develop a plan and gain Federal Emergency Management Agency approval, Mr. Martin said. "It's going to take a lot of time on everybody's part," he said.

The intent of the pre-disaster mitigation plan is to "pre-plan or prepare yourself" for potential natural disasters, like massive snowstorms or flooding, Mr. Martin said. The plan would recommend steps that could be taken before a storm to help reduce loss of life and property.

Having a mitigation plan in place also would allow the county and its municipalities to apply for extra federal relief funding in the wake of a natural disaster, Mr. Martin said. "Now, those pots of money wouldn't be available to us," he said.

Federal funding for pre-disaster mitigation planning has been available for several years, Mr. Martin said. However, Lewis County officials kept the idea "on the back burner" for the past few years to see how other communities would fare and learn from their mistakes, he said.

"It's extremely tough to get the plan approved," Mr. Martin said.

By waiting to start the process, county officials, when choosing from possible consulting firms, will be able to factor in their success rates in other communities, Mrs. Bullock said. The delay also will help in determining which natural disasters must be addressed, she said.

Officials from the state Emergency Management Office have provided preliminary input and promised continued assistance, including review of the tentative plan prior to its submission, Mr. Martin said.

"They really know what FEMA is looking for and what they've rejected in the past," he said.

"They've been extraordinarily helpful," Mrs. Bullock agreed. "They're a good resource."

County sets info sessions on hazard mitigation

SATURDAY, FEBRUARY 6, 2010

LOWVILLE ð The Lewis County Department of Fire and Emergency Management has scheduled a pair of informational meetings on its proposed hazardous-mitigation plan.

The sessions will be held from 2 to 4 p.m. and 7 to 9 p.m. Tuesday in the second-floor legislative chambers at the county courthouse, North State Street.

The department will present the draft Risk Assessment Interim Deliverable report and provide updated information on the Lewis County Multi-Jurisdictional Natural Hazard Mitigation Plan. For more information on this project, call Emergency Management Director James M. Martin at 376-5234.

Hazard mitiga tion plans in w orks in Lewis County

By STEVE VIRKLER
TIMES STAFF WRITER
WEDNESDAY, FEBRUARY 10, 2010

LOWVILLE ð Lewis County and its municipalities are working on a plan that will help identify and fund projects that may mitigate future natural disasters.

"It's a portal for future funding," Richard Franks, project manager at URS Corp. of Wayne, N.J., said Tuesday during an informational session on the Lewis County Multi-Jurisdictional Hazard Mitigation Plan. Mr. Franks's firm serves as a consultant on the $100,000 project, which is being funded through a $75,000 grant from the Federal Emergency Management Agency and $25,000 from the county.

Any towns and villages that participate in the county plan may be eligible for FEMA pre-disaster funding to conduct projects that reduce the long-term risk to life and property from a natural disaster, Mr. Franks said. Such a plan is not required to receive federal funding to assist with cleanup after a natural disaster, he said.

A kickoff for the project was held in May, and the consultant last month completed a draft Risk Assessment Interim Deliverable, or RAID. That document identifies potential natural hazards that could occur in Lewis County and, in most cases, shows the areas in which they are most likely. It also provides estimated annual costs from damage caused by each hazard.

Extreme wind was determined to cause the most quantifiable damage at more than $1 million per year, followed by winter storms, drought and flooding. That document and other information about the hazard mitigation project are posted on the county's Web site.

Plans are to hold a work session in early March, with each involved jurisdiction required to identify several possible hazard mitigation projects at that meeting, Mr. Franks said.

The consultant then plans to compile the information and submit a draft mitigation plan to the state Emergency Management Office for its review by the end of March. FEMA officials will then review the plan and, if it is deemed acceptable, the county and participating municipalities may adopt it. That review process likely will take several months to complete, Mr. Franks said.

Jefferson County is conducting a similar project, although it is a few months ahead of Lewis County. URS Corp. is the consultant for that project, as well.

Radio Announcement on WBRV The Moose
Aired throughout day on February 7 ï February 9, 2010

There will be a public meeting on February 9, 2010, to present the findings of the first phase of the Hazard Mitigation Plan. There will be one meeting in the afternoon from 2-4 pm and another in the evening from 7-9 pm. Both meetings will be held in the Legislative Chambers, on the 2nd floor of the Lewis County Courthouse. We understand that work schedules may not allow people to attend the afternoon meeting, so we are having a second meeting in the evening to accommodate everyone. Please choose which of those times is more convenient for you and plan to attend.

The presentation will include a review of the Risk Assessment Interim Deliverable (RAID), which incorporates the information submitted by municipalities and others over the last several months. The RAID can be viewed at the Lewis County Hazard Mitigation Plan website: www.lewiscountyny.org. Our consultant, URS Corporation, will be available to answer any questions you may have about the RAID. The public meeting will also kick off the final phase of the plan ï the mitigation strategy development phase.

If you have any questions about the hazard mitigation plan, please contact Sarah Bullock, of the Lewis County Department of Economic Development and Planning, at 377-2024.

Lewis County is an equal opportunity provider and employer. Complaints of discrimination should be made known to Lewis County Board of Legislators

Hazard info session slated

LEWIS COUNTY PROJECT: Meeting on draft mitigation plan is Tuesday

By STEVE VIRKLER
TIMES STAFF WRITER
MONDAY, MAY 3, 2010

ARTICLE OPTIONS
A A A SHARE

LOWVILLE — An informational session on Lewis County's draft hazard mitigation plan will be held this week.

"We need to make sure that the public is aware of the actions we have been taking," county Senior Planner Sarah J. Bullock said.

The meeting on the draft plan will be at 3 p.m. Tuesday in the legislative chambers at the County Courthouse on North State Street. County legislators are expected to attend the session.

Participants will receive an update on the $100,000 project, funded through a $75,000 grant from the Federal Emergency Management Agency and $25,000 from the county, and be able to comment and ask questions of representatives from the county and consultant URS Corp. of Wayne, N.J.

The draft plan was completed in April and has been submitted to the State Emergency Management Office for review. It will be passed to FEMA for final review and approval, which should be completed in the fall, Mrs. Bullock said.

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The county and the towns and villages that participate in the plan may be eligible for FEMA predisaster funding to conduct projects that reduce the long-term risk to life and property from a natural disaster.

Twenty towns and villages are full participants, Mrs. Bullock said.

"Our consultant was very pleased with that number," she said.

Other municipalities may be added in the future if the county updates its plan, possibly in five years or so, Mrs. Bullock said.

The draft plan, including a prioritized wish list of projects that may be eligible for federal funding, is posted on the county website.

The projects' anticipated costs and target dates are included only for planning purposes, and municipalities won't be bound to those numbers or required to undertake any of the projects, Mrs. Bullock said.

SHOW COMMENTS

Julie Lynn Shaw's Hometown Paper!

Journal and Republican

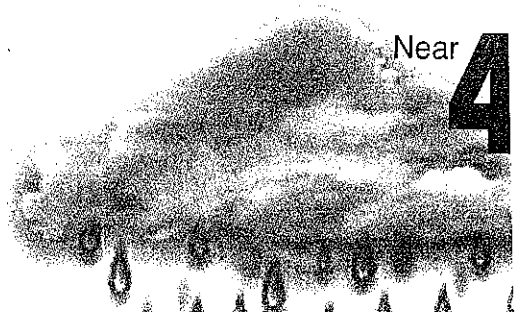
24 pages

Issue 38 — For the week of April 28 - May 4, 2010 — $1

In This Issue

• Bezek nominated for Tewaaraton Award, see Page 12.

• Volunteers needed for community garden, see page 3.



Near 4

Today's Weather: Rain and snow shc becoming all rain after 3 p.m. Cloudy, with a 44. Chance of precipitation is 70%. **See more.**

ıket of six tickets for $5. For ore information call Sue ıuer at 376-3081.

Relay for Life founder coming to Watertown

WATERTOWN — Dr. ordy Klatt, founder of Relay, coming to the Watertown

Team F.R.E.E. – Raffle

Relay For Life Team F.R.E.E. is planning a raffle featuring a welcome log and many other itetms. Ticket will cost $1 each or six for $5. They will be sold by all Team F.R.E.E. members. For more in-

LOWVILLE — Hand In Hand Early Childhood Center plans to host a garage sale at its Lowville Center located at 5780 Brookside Circle Lowville Thursday, April 29, and Friday, April 30, from 9 a.m.-5 p.m. Proceeds will benefit the Hand In Hand Relay for Life Team.

Multi-jurisdictional Hazard Mitigation Plan meeting slated

A Lewis County Multi-Jurisictional Hazard Mitigation Plan ıeeting to present and discuss the raft plan is scheduled for Tuesday, lay 4, 3 p.m., at the Lewis County ourthouse Legislative chambers, nd floor.

In March of 2009 the Lewis ounty Office of Fire and Emerıency Management, in conjunction with consultants from URS ıc., initiated the process by which he county and participating muıicipalities would develop a FEMApproved hazard mitigation plan, vhich provides a portal to future rant funding for projects to reduce the risk of damage and losses due to natural hazards in Lewis County.

The draft plan was completed in April of 2010 and has been submitted to the New York State Emergency Management Office for review, from where it will subsequently be passed to FEMA for final review and approval. The full draft plan may be viewed online and downloaded at: lewiscounty ny.org/content/Generic/View/106.

The purpose of this meeting is to present the draft plan to County Legislators, other local stakeholders (besides municipalities which have had the opportunity to participate in the plan) and the general public.

There will be an opportunity for attendees to put questions and comments regarding the plan to representatives of Lewis County and URS Inc.

If you have any questions, contact: James Martin, director, Lewis County Fire and Emergency Management, 376-5234, jmartin@ lewiscountyny .org or Sarah Bullock, senior planner, Lewis County Department of Economic Development and Planning, 376-5422, sbullock@ lewiscountyny.org.

Meal sites list menus for April 29 - May 5

SPORTSTER CUSTOM 883

#HD1264
8371 MILES
$4850
plus tax, title & reg.

#H1271
4724 MILES
$10990
plus tax, title & reg.

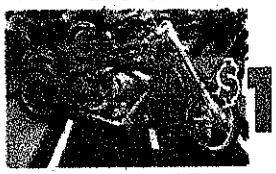
2008 HARLEY DAVIDSON CROSS BONES

#HD1266.
3645 MILES
$15970
plus tax, title & reg.

2009 HARLEY DAVIDSON STREET BOB

#H1265.
1 MILES
$12990
plus tax, title & reg

2009 HARLEY DAVIDSON ROCKER CUSTOM



#H1212.
546 MILES
$16999
plus tax, title & reg.

2004 HARLEY DAVIDSON SUPER GLIDE SPORT

#HD1231.
8379 MILES
$9295
plus tax, title & reg

2000 VICTORY V92SC

#HD1218B.
4538 MILES
$5200
plus tax, title & reg.

2009 HARLEY DAVIDSON NIGHTSTER

#HD1242.
344 MILES
$8895
plus tax, title & reg