

II. Planning

A. Planning Context

1. Location

The Village of Croton-on-Hudson is located on the eastern side of the Hudson River in the northwest corner of Westchester County, approximately 40 miles north of New York City. The 4.9-square mile village lies within the Town of Cortlandt. Surrounding municipalities are the Town of Cortlandt to the north and east, the Town of New Castle to the east, and the Town and Village of Ossining to the south. The Hudson River forms the village's Western boundary, with Haverstraw across the River. The Croton River serves as part of the village's eastern boundary.

The village is situated along regional highways and rail lines. US Highway Route 9 and New York State Highway Route 9A run along the western perimeter of the village, providing north-south access through Croton-on-Hudson; State Route 129 provides access east-west across Westchester. Croton-Harmon station is a regional transportation hub. Metro-North Railroad's Hudson line runs from Grand Central Station to Croton-on-Hudson and north to Poughkeepsie; Croton-on-Hudson is also a stop on the Amtrak's Northern Corridor. The Village is located within Indian Point's 10 Mile EPZ



Figure 1 – New York State County Map



Figure 2 – Westchester County Map

2. Land Use Pattern

The village has four commercial centers: the Upper Village, North Riverside Avenue, Municipal Place, and the South Riverside/Harmon shopping district. Commercial property is about 2% of the village land use. The commercial establishments are mostly retail, service and professional businesses intended to serve the local population.

The residential neighborhoods expand from the central commercial districts, gradually growing less dense and more wooded further away from the commercial centers. Approximately 64% of the village is zoned single family residential. There are limited opportunities for new construction without demolition in the village.

All construction is subject to review by the Village Engineer and Planning Board and, when applicable, the Zoning Board of Appeals. The Zoning Code has been updated several times over the last 5 years and continues to be evaluated and improved.

3. Topographic Conditions

Croton-on-Hudson's topography includes low lying areas along the Hudson River, Route 9, and the Metro-North railroad tracks; a fairly deep ravine along the Croton River; and a plateau along its northern boundary that reaches elevations of 500 to 600 feet within a mile of the Hudson River. This steep terrain has formed a series of ravines and watershed drainage areas within the village. The drainage areas are the Hudson River Basin (draining to the Hudson River to the west), the Croton Gorge Basin (draining to the Croton River and Bay to the south and east), and the Furnace Brook Basin (draining to the north to lakes and streams including the Furnace Brook and Lake in Cortland).

The village contains a number of environmentally sensitive areas including Hudson River Shallow Bays (Croton Bay and Haverstraw Bay), New York State Regulated Wetlands, 100-year flood plain (the Hudson and Croton Rivers Coast), Watersheds and the Aquifer. These areas are protected through limitations of use.

The seasonal temperatures in the village are typical of the Northeast United States, experiencing cold winters, mild springs and falls, and hot summers. Average temperatures are about 27 degrees F in January and 75 degrees F in July. Average rainfall in Westchester County is 45-50 inches per year. Average snowfall in Westchester County is 28-30 inches per year. The village experiences mild seasonal weather related flooding, especially in the early spring due to winter run-off and seasonal heavy rain. Fewer than 100 homes are located in the flood zone.

4. Demographic Characteristics

The population of the Village of Croton-on-Hudson has grown over the last fifteen years from 7,018 as recorded in the 1990 census to 7,606 according to the 2000 U.S. Census. About 26% of the population is under the age of 18, and about 14% of the population is over 65. Less than 15% of the population is foreign born, and only 71 households are identified as linguistically isolated, meaning that all members of the household over the age of 14 have difficulty speaking English.

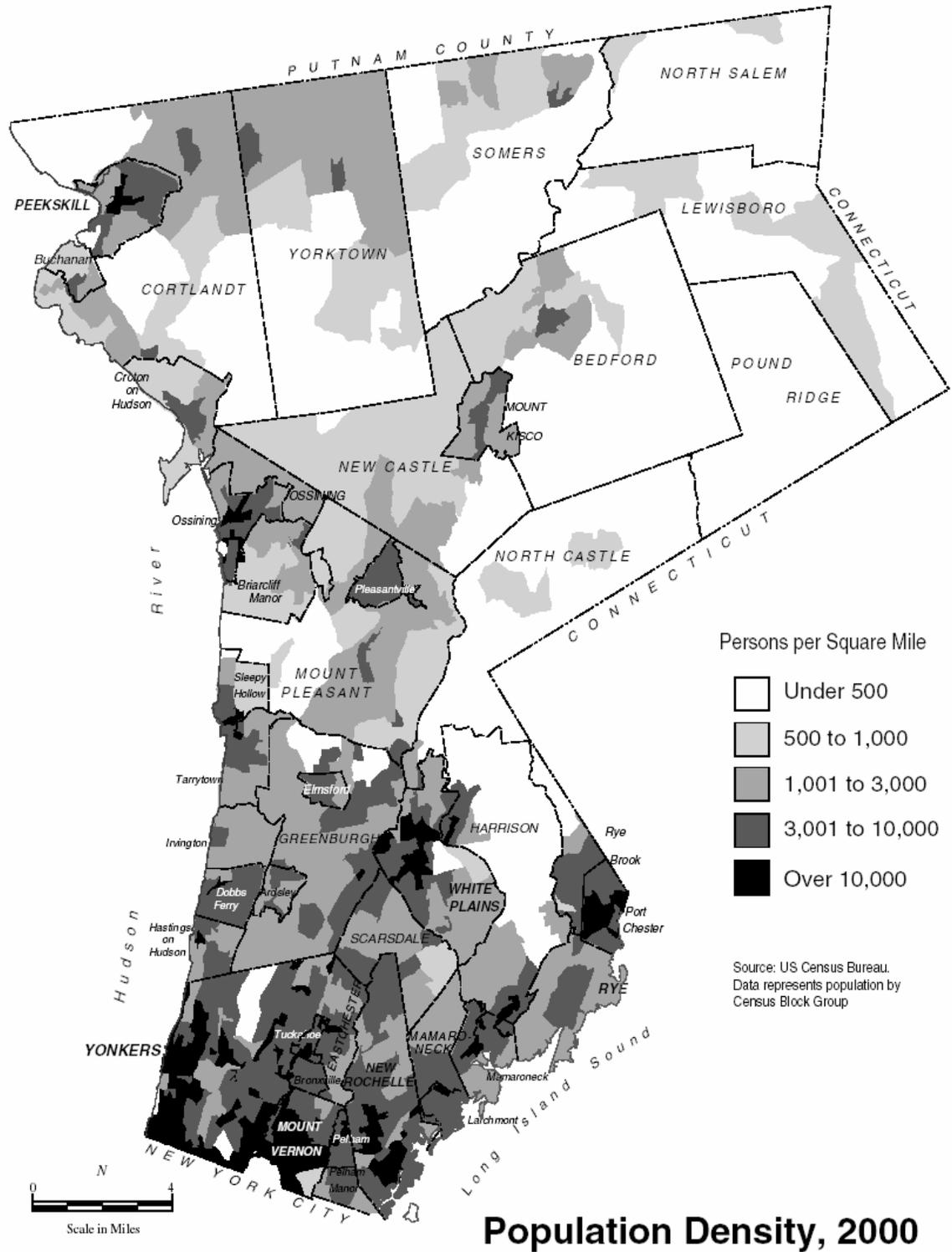


Figure 3 – Westchester County Population Density

B. Planning Process

1. Purpose of the Plan

The Hazard Mitigation Plan, prepared by the Village of Croton-on-Hudson Hazard Mitigation Committee, focuses on methods of mitigation that will reduce exposure and vulnerability to the hazards identified by the HAZNY plan. The Hazard Mitigation Plan is comprehensive in that it evaluates a broad range of natural and man-made hazards and evaluates cost-effective methods of minimizing risk to life and property. The strategies are intended to be realistic in their implementation and were developed with the existing physical and financial limitations of the community as frame work. The Hazard Mitigation Plan has a long-term outlook and anticipates that strategies may take years or even decades to implement.

The plan has been prepared in response to the Disaster Mitigation Act of 2000, which requires that local governments have an approved Hazard Mitigation Plan to be eligible to participate in the Hazard Mitigation Grant Program (HMGP). The President signed the Act (Public Law 106-390) into effect on October 10, 2000 to improve the planning process and set standards for mitigation throughout the nation. The act requires a pre-disaster hazard mitigation plan to access mitigation project funding and new requirements for the national post-disaster Hazard Mitigation Grant Program (HMGP). In addition, the development of this plan fulfills other Federal Emergency Management Agency (FEMA) planning requirements making the Village competitive for further mitigation funding.

2. Croton-on-Hudson Hazard Mitigation Committee & Plan Preparation

The village began the hazard mitigation planning process by attending the Town of Cortlandt's HAZNY workshop in January 2004. The Hazard Analysis Report (Appendix A) conducted for the Town of Cortlandt, by the Westchester County Department of Emergency Services and HAZNY in January 2004, identified natural and human caused hazards that regularly threaten the village.

Planning for the Croton-on-Hudson Hazard Mitigation Plan continued as the Village Manager, Village Water Foreman, Assessor/Code Enforcement Officer, Engineer, Superintendent of Public Works, and representatives from the Police Department and the Volunteer Fire Department used the Hazard Analysis Report as a foundation for developing useful and realistic goals for hazard mitigation. In a series of group discussions, they outlined the risks caused by the hazards in the village, determined realistic strategies for mitigation, response and recovery, and ultimately distinguished between immediate and long-term needs.

The Croton-on-Hudson Hazard Mitigation Committee included Rick Herbek (Village Manager), Janine King (Assistant to the Village Manager), Ken Kraft (Superintendent of Public Works), Dan O'Connor (Village Engineer), Mike Nolte (Police Sergeant), Tex Dinkler (Volunteer Firefighter), and Tom Brann (Water Foreman). The Village Board of Trustees was given drafts of the reports to aid in planning, but did not attend planning meetings. Janine King took responsibility for the development of the plan at the staff level. Emily Fannon (Village Office Intern) was responsible for

assembling all information gathered by the committee into the plan. Other staff members offered impute and statistical information regarding historic hazard events and existing policies.

Jeff Tkacs (Coordinator of Homeland Safety and Security, Town of Crotonlandt), Neil Sweeting (Program Administrator, Westchester County Emergency Management) and Nadine Macura (Disaster Preparedness Program Representative II, NYSEMO Region II) assisted the committee in the development of the Hazard Mitigation Plan.

a. Resources

The Village of Croton-on-Hudson worked hard in the past to have accessible emergency response plans for situations in which the village is vulnerable. In addition to the HAZNY assessment, the committee utilized existing response plans in the formulation of the Hazard Mitigation Plan.

The village will use the Hazard Mitigation Plan to institute new plans and procedures that relate to hazard mitigation, response and recovery. The village will include the ideas and objectives of the Hazard Mitigation Plan as the existing plans and procedures below are revised. Westchester County Emergency Management Office provided the committee with early manuals on plan preparation.

Village of Croton-on-Hudson and Westchester County Policies used when forming the Hazard Mitigation Plan:

- **The Village Emergency/Disaster Operating Procedures** is a guide for action during a major emergency. The Police operating procedures were last updated in May 1991 and include response systems for many of the Hazards addressed in the report. The Water Supply Emergency Plan, updated in February 2003, provides guidelines for response and action in the event of a large-scale disruption of water services.
- **Local National Flood Insurance Program** administered by New York Municipal Insurance Reciprocal.
- **SSAVE Emergency Management Plan** (Safe Schools against Violence in Education) is the Croton-Harmon School District's responds plan in case of a natural or man-made disaster. The plan deals with school cancellation, early dismissal, evacuation, and sheltering of students.
- **HAZNY** (Hazard New York), sponsored by NYSEMO, produced a Hazard Analysis Report of the community. HAZNY is an automated interactive spreadsheet that asks specific questions on potential hazards in a community. The program also records and evaluates the responses to these questions. HAZNY also includes historical and expert data on selected hazards.
- **Village Comprehensive Plan** was completed in 2003. The plan emphasizes maintaining, enhancing and protecting Croton-on-Hudson's

unique features. It recommends changes to the code that would keep with the ideas and goals set out in the plan.

- **Emergency Action Plan: New Croton Dam** was put together by the state DEP. It prepares for incidents involving the New Croton Dam and the Croton Reservoir. It identifies strategies for mitigation during disasters, and prepares for emergencies that may occur if the New Croton Dam fails.
- **Fire Prevention:** Chapter 125 of the Village of Croton-on-Hudson Code establishes regulations, consistent with nationally recognized good practice, for the safeguarding, to a reasonable degree, of life and property from the hazards of fire and explosion arising from the storage, handling, and use of hazardous substances, materials and devices, and from conditions hazardous to life or property in the use or occupancy of buildings or premises.
- **Indian Point Emergency Plan** indicates that the village is within the Indian Point ten mile Emergency Planning Zone. The designated reception center is Westchester Community College Gymnasium at 75 Grasslands Avenue (Route 100), Valhalla.
- **Storm Water Management Plan** assessed the storm water flow capacity of existing drain/stream channel drainage systems throughout the village. It identified impacts on critical/priority areas in the village while developing strategies for alleviating the problems caused by run-off during a severe storm. The plan studied four critical zones in the village: High Street, Brook Street, Grand Street/Harrison Avenue and Batten Road. Some of the recommendations have been implemented.
- **Town of Cortlandt Regional Emergency Planning Task Force Directory** provides a list of the equipment owned and maintained by private companies in the area that would be of use in an Emergency Response situation. The last report was published in May 2002 and it is currently being updated.
- **Town of Cortlandt Emergency Evacuation Plan**
- **Westchester County CEMP Exercise and Incident Command System Overview** The Comprehensive Emergency Management Plan (CEMP) provides general, all-hazard management guidance, using existing organizations, to allow the County to meet its responsibilities before, during and after emergencies and disasters.
- **Westchester County Local Radiological Emergency Response Plan** prepares a response evacuation system for communities located within a ten-mile radius of a Nuclear Power Plant. The village is located in this Emergency Planning Zone (EPZ), the most immediate area of exposure. If there were a problem at the power plant, the plan outlines emergency response.

- **Passenger Train Emergency Response Procedures:** MTA Metro-North Railroad safety department prepared this manual for response to emergencies involving trains and train cars currently in operation by the MTA Metro-North Railroad.

State and Federal Policies used in writing the Hazard Mitigation Plan:

- **New York State Building Code** is enforced by the Engineering Department. It establishes minimum guidelines for building construction and fire prevention that safeguard life and property.
- **Federal Disaster Mitigation Act**

In October 2000, the President of the United States signed into law the Disaster Mitigation Act of 2000 (Public Law 106-390) to amend the Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1988. The new legislation reinforced the importance of pre-disaster mitigation planning to reduce the Nation's disaster losses and is aimed primarily to control and streamline the administration of federal disaster relief and mitigation programs.

Section 203 establishes a "National Pre-disaster Mitigation Fund" in order to carry out a program that will "provide technical and financial assistance to States and local governments to assist in the implementation of pre-disaster hazard mitigation measures that are cost-effective and designed to reduce injuries, loss of life, and damage to property, including damage to critical services and facilities under the jurisdiction of the States or local governments."

Section 322 provides a new and revitalized approach to mitigation planning by specifically doing the following: Establishes a new requirement for local tribal mitigation plans, authorizes up to seven percent of the Hazard Mitigation Grant Program (HMGP) funds available to a state to be used for development of state local and tribal mitigation plans, and provides for states to receive an increased percentage of HMGP funds (from 15 to 20 percent) if, at the time of the declaration of a major disaster, they have in effect an approved State Mitigation Plan that meets the factors in the law.

- **City of New York Department of Environmental Protection, Bureau of Water Supply** prepared the Emergency Action Plan for the New Croton Dam.
- **Statewide Wireless Network**, proposed by New York State Office for Technology, for voice and data radio communication services to enable public safety and public service entities operating within the State of New York to better protect and respond to our citizens.

Environmental Protection Laws, Land Development Restrictions, Natural Resource Conservation Plans used in writing the Hazard Mitigation Plan:

- **Local Waterfront Revitalization Program, (LWRP)** adopted in 1996, promotes water resource protection. It seeks to encourage the preservation and enhancement of facilities that are dependent upon and are enhanced by the waterfront. The plan is significant in that it requires state and federal agencies to consider proposed actions in terms of their consistency with the 44 policies of the LWRP. The LWRP includes a variety of natural resource protection and flood hazard protection policies that are supportive of hazard mitigation, including policy numbers 2, 11, 12, 13, 14, 16, 37 & 44.
- **Land Development Regulations:** The village has a variety of local laws that support hazard mitigation planning. The Subdivision Regulations and Zoning Code regulate the use, intensity, and pattern of development in the village. The village is substantially developed so new subdivision opportunities are limited. The Zoning Code regulates lot size and building construction and renovation. The village is trying to bring all Zoning Laws up to the current environmental standards and practices.
- **Wetlands Protection:** The Wetlands and Watercourses Law requires the issuance of a permit for any structure or activities within a wetlands or its 100-foot buffer. Chapter 227 in the Code is designed to provide for the protection, preservation, maintenance and use of the sensitive areas by preventing damage, minimizing disturbance, preserving natural habitats and protecting against flood and pollution through the establishment of a Water Control Commission and otherwise protecting the quality of such areas that are essential.

Other Hazard Mitigation Plans referenced during the writing of the Croton-on-Hudson Hazard Mitigation Plan:

- **City of Rye Hazard Mitigation Plan (Draft)**
- **City of Mount Vernon Hazard Mitigation Plan (Final/Approved)**
- **County of Westchester (Final)**

b. Meetings and Plan Time Line

Table 1 – Planning Committee Meeting Timeline

Date	Attendance	Topics
01/14/2004	Richard Herbek (Manager), Janine King (Asst. to Village Manager), Dan O'Connor (Engineer), Tex Dinkler (Volunteer Firefighter), Mike Nolte (Police Sergeant), Ken Kraft (Superintendent of Public Works)	Run HAZNY Program with the Town of Cortlandt.

07/21/2004	Mike Nolte, Dan O'Connor, Tex Dinkler, Ken Kraft, Tom Brann, Richard Herbek, Janine King, Emily Fannon (Intern)	Reviewing the HAZNY Hazard Profile and Analysis from the HAZNY evaluation of the Town of Cortlandt. Outline of goals of hazard mitigation planning. Preliminary overview of necessary information for complete plan. Initial outline of Hazards that impact village to be discussed in plan.
07/26/2004	Mike Nolte, Dan O'Connor, Tex Dinkler, Ken Kraft, Tom Brann, Richard Herbek, Janine King, Emily Fannon	Initial draft distributed several days before meeting. Brainstorming. Mitigation ideas and cost/benefit analysis. Distribute requests for specific information from Police and Fire Departments.
08/03/2004	Mike Nolte, Janine King, Richard Herbek, Emily Fannon	Capability assessment of Police Force.
08/03/2004	Tex Dinkler, Janine King, Richard Herbek, Emily Fannon	Capability assessment of Fire Department.
08/09/2004	Richard Herbek, Janine King, Dan O'Connor, Ken Kraft, Tom Brann, Mike Nolte, Tex Dinkler, Emily Fannon	Draft distributed to committee for evaluation, corrections, and additions.
01/05/2005	Village residents, local businesses, neighboring villages and towns, and county	Plan made available on-line and at the Village Office main desk.
03/24/2005	Nadine Macura (SEMO), Neil Sweeting (County EMO), Jeff Tkacs (Town HSO), Rick Herbek, Ken Kraft, Mike Nolte	Meeting with SEMO, County EMO and Town HSO regarding the Draft of the Hazard Mitigation Plan. Receive first crosswalk evaluation.
07/18/2005	Ken Kraft, Janine King, Emily Fannon	Revisit of the recommendations made by SEMO at the March 24, 2005 meeting.
08/01/2005	Ken Kraft, Janine King, Emily Fannon, Nadine Macura	Meeting with SEMO in order to go over second crossroad evaluation of revised draft. Explanation of why and where the plan needs changes/updates.

3. Public Involvement and Other Interested Parties

When the plan neared completion the Croton Hazard Mitigation Committee made their work available to the public. Croton Residents, businesses and neighboring villages and towns could view a draft of the report posted on the village website and were invited to use the citizen comment sheet to respond to it. The digital PDF version became available on the website in January 2005. In January 2005, a hard copy of the report was also left at the Village Office's main desk, where the most recent version is still available for viewing and comment. Availability of the document was publicized in the Village Newsletter and on through the website mailing list. Any resident responses were considered in the preparation of the final document.

Residents were supportive of hazard mitigation planning as part of a larger emergency preparedness planning effort. The committee received comments

through the online comment form. The primary concern expressed was the lack of mitigation plans for nuclear power plant emergencies. Mitigation for nuclear power disaster events was not included in this plan because the committee chose to focus on the risks identified in the HAZNY analysis. In addition, the village has no jurisdiction over the nuclear power plant, located in Buchanan, New York, and nuclear crisis is specifically addressed in the Village Emergency Operations Plan and in a special evacuation plan.

In addition, the Cortlandt Office of Homeland Security and the Westchester Office of Emergency Management were given a draft. The towns of Cortlandt and Rye Brook requested and received digital copies of the plan. Neither municipality responded with comments

Westchester County OEM supplied material to assist in plan preparation. Neil Sweeting (Westchester EMO) with Nadine Macura (SEMO) presented necessary revisions to the Hazard Mitigation Committee based in the Crosswalk analysis of that draft. In the final stages of writing the plan, the county provided the committee with digital copies of the County Hazard Mitigation Plan draft for review and comparison.

C. Adopting, Implementing and Monitoring

1. Adoption

Adoption of the plan gives the plan greater authority, fulfills certain FEMA program eligibility requirements, and will ease implementation of your mitigation actions. Once the plan is adopted the village can implement mitigation strategy.

The Board of Trustees is responsible for adopting the hazard mitigation plan after it is approved by FEMA. This legislative board is responsible for establishing the village policy. The Board of Trustees has the authority to implement most of the strategies recommended in this plan including setting policy directives for village staff, allocating funding and adopting amendments to existing village laws.

After approval by FEMA the plan was be presented to the Village Board of Trustees for formal adoption. The resolutions for adoption are included in Appendix D.

2. Implementation

a. Integration

To encourage the implementation of this mitigation plan, it will be reviewed prior to the adoption of new or amended zoning or land use regulations, public safety statutes and other local ordinances, policies, and programs. By considering hazard mitigation a village policy, policy-makers will implement mitigation initiatives and programs. The Hazard Mitigation Committee will aid in this process.

b. Existing Programs

Successful plan implementation will require that strategies be implemented through the existing village programs and planning mechanisms and instituted in

the policy formation and decision making process. Section V: Mitigation Objectives and Strategies discusses responsibility for implementation for each strategy. It also identifies the existing village program that will best facilitate the implementation of strategies. The village will include the ideas and objectives from the Hazard Mitigation Plan as existing plans and procedures are updated. Existing programs include:

- **Village Code Revisions.** The Board of Trustees adopts code revisions including changes in the Village zoning code, floodplain management requirements, subdivision regulations, housing standards or other relevant Village Code Chapters or planning documents.
- **The Comprehensive Plan.** The plan takes into consideration the environmental limitations and risks of the village. The conclusion and recommendations of the plan support the goals of hazard mitigation.
- **Code Enforcement.** In many cases, simple changes in code enforcement and law enforcement by the Village Code Enforcer would make hazard mitigation possible. In other cases modification in police enforcement or fire prevention activities may be necessary.
- **Capital Improvements Program and Budget.** Strategies involving significant village expenditures will need to be implemented through the Capital Improvements Program, which is approved annually by the Board of Trustees. Strategies involving smaller expenditures such as funding increases for maintenance or enforcement activities will likely be administered through the annual budget process, which is adopted by the Board of Trustees.

3. Monitoring

The Hazard Mitigation Plan will be under constant review as goals are achieved through proposed strategies and projects, and new strategies are developed and added to the plan.

a. Yearly Review

The Committee Chair is the Assistant to the Village Manager. The chair is responsible for contacting members of the Hazard Mitigation Committee each year for a plan evaluation meeting. The meeting should be called in October each year.

The plan shall be reviewed, revised, and update on an annual basis by the committee with feedback and suggestions from the public. The committee shall continue to monitor the plan and update it as necessary, as well as provide the Board of Trustees with annual reports regarding the plan implementation and stated mitigation projects. Progress of the plan and the implementation of strategies and projects shall be reviewed and necessary updates made. If new information or an urgent situation arises that requires immediate attention, the Committee will assemble to address the issue.

During the yearly evaluation, the committee will first determine if the plan needs changes. If the projects have begun or been completed, the status should be updated. The committee will determine the effectiveness of the plan's procedures and recommendations, identify new areas of concern, and renew enthusiasm for the cause of hazard mitigation. New strategies for mitigation of existing or developed conditions will be added to the plan as will any new emergency response plans created by the Village.

The Hazard Mitigation Committee is responsible for aiding in the integration process of the plan. Goals and objectives that are accomplished should be documented. Should there be any changes in village regulations, the village boards and committees should consult with the Committee in order to review the proposed change and its impact on the policies and strategies of the Hazard Mitigation Plan. Any land use changes or new developments in the village will also be analyzed.

b. Five Year Re-approval Processes

Every five years the Hazard Mitigation Committee will submit the revised Hazard Mitigation Plan to FEMA for approval. After FEMA approves the changes, the Board of Trustees will adopt the approved plan.

If the plan undergoes major adjustments based on hazard events before a five year period, the Hazard Mitigation Committee may decide to submit the plan for re-approval sooner.

c. Public Involvement

Upon adoption, the Hazard Mitigation Plan will be available through the Village Office. Additionally, it will be available on the village website. The public will be invited to comment through the citizen comment form on the website.

In order to recommend and review changes, the most recent version of the plan will remain on the village website. Continued community involvement is an essential element for plan development and revision. During periods of review, the Committee will encourage participation of residents, neighboring communities, agencies, businesses and other interested parties. Comments through the citizen comment form will be used during the plan's review to maintain citizen participation. In addition, a copy will be available at the Village Office for public viewing.