

Discovery Report

FEMA Region V

Huron Vermilion Watershed, Ohio

HUC 04100012



Prepared by



The Ohio Department of Natural Resources

Project Area Community List

Community Name	CID
Ashland Unincorporated	390759
Bailey Lakes	390792
Berlin Heights	390650
Crawford Unincorporated	390811
Erie Unincorporated	390153
Greenwich	390282
Huron	390154
Huron Unincorporated	390770
Kipton	390743
Lorain Unincorporated	390346
Milan	390155
Monroeville	390283
New London	390284
North Fairfield	390285
Norwalk	390286
Plymouth	390287
Richland Unincorporated	390476
Savannah	390861
Seneca Unincorporated	390779
Shiloh	395411
South Amherst	390356
Vermilion	395374
Wakeman	390288
Willard	390289

Table of Contents

I.	Watershed Description.....	1
II.	Project Description and Methodology.....	3
III.	Data Analysis.....	5
i.	Data that can be used for Flood Risk Products.....	6
ii.	Other Data and Information.....	7
IV.	Risk MAP Needs.....	13
i.	Floodplain Studies.....	13
ii.	Mitigation Projects.....	15
iii.	Compliance.....	15
iv.	Communications.....	16
V.	Close.....	16
VI.	Appendix – Discovery Filed.....	16

List of Tables

I.	Table 1. NFIP Participation Status.....	3
II.	Table 2. Data Collection for Huron Vermillion Watershed.....	5-6
III.	Table 3. USGS Gages.....	7
IV.	Table 4. Hazard Mitigation Plan Status.....	8
V.	Table 5. Number of Repetitive Loss Structures by community.....	9
VI.	Table 6: Community Assistance Visit status by community.....	12
VII.	Table 7. Map Modernization Activity.....	13
VIII.	Table 8. Mapping Needs.....	14
IX.	Table 9. Areas of Mitigation Interest (AOMI).....	14

List of Figures

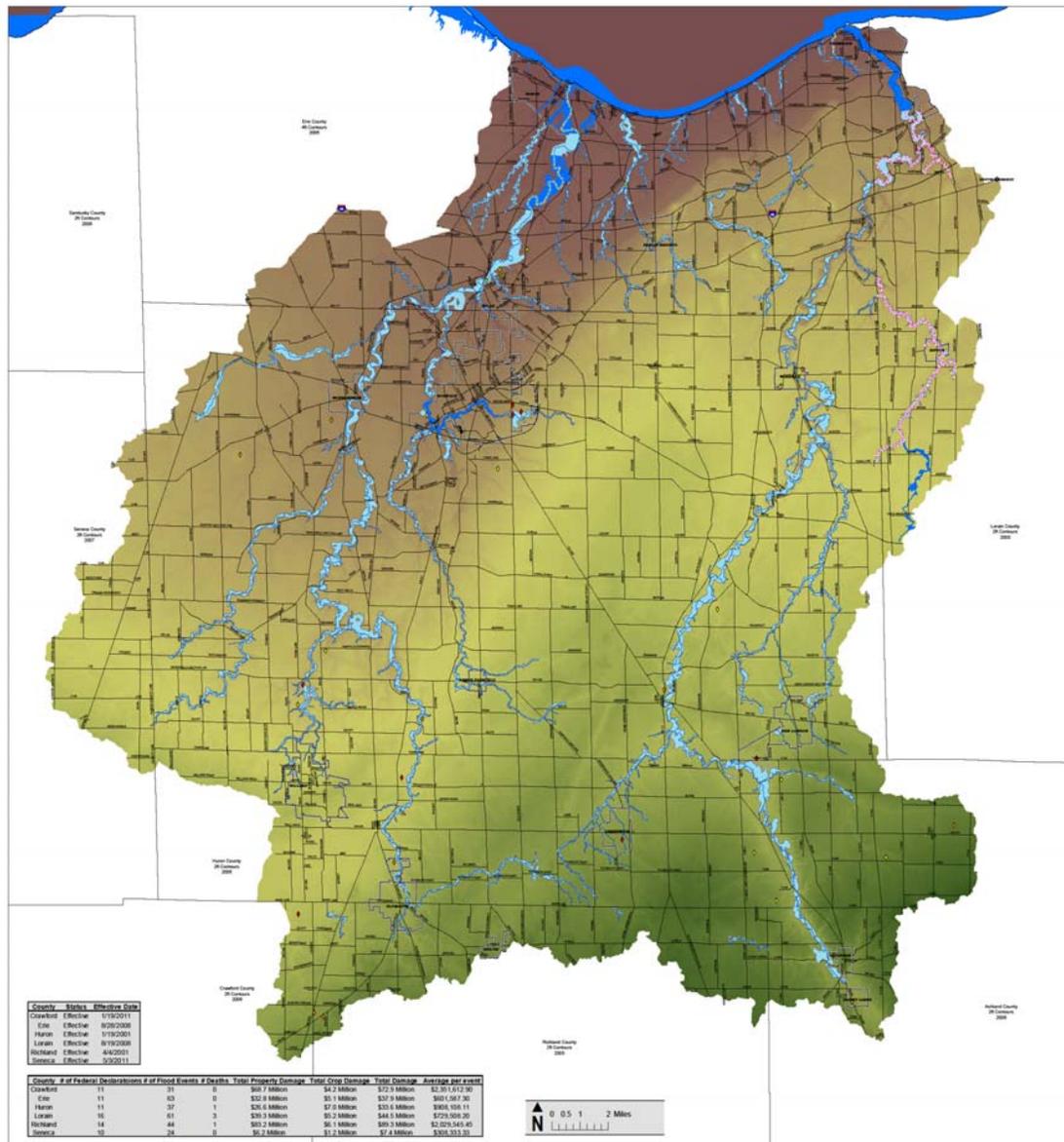
I.	Figure 1. Project Area Map.....	2
----	---------------------------------	---

I. Watershed Description

The Huron Vermilion Watershed is located in North Central Ohio, with a drainage area of 764 square miles. This watershed drains the majority of Erie and Huron Counties. The Watershed boundaries also encompass Lorain, which is to the east. Ashland, Richland, and Crawford Counties make up the southern boundary and Seneca County borders the western edge. The watershed is in the Lake Erie Basin and has numerous tributaries contributing to Lake Erie. There are two main rivers within the basin. The Huron River, which is on the west side of the watershed and the Vermilion River, which is on the east side. There are several tributaries that feed each river. The principle tributaries to the Huron River are Norwalk Creek, East Branch/West Branch Huron River, Slate Run, and Finke Run. The headwaters begin in and around North Fairfield, Plymouth, and Willard. The Vermilion River main tributaries are the East Branch/West Branch Vermilion Rivers. The headwaters of the Vermilion River begin in and around Greenwich, Baily Lakes, and New London. The limits of the Discovery project area are presented in Figure 1. Table 1 includes the National Flood Insurance Program (NFIP) participation status of each community within the Little Miami River Watershed.

Figure 1. Project Area Map

Discovery Map: Huron-Vermilion Watershed



MAP SYMBOLOLOGY

- Flood Hazard Area**
 - Zone A - Special Flood Hazard Area
 - Zone AE - High Water Table Flood Hazard Area
- Potential Study Areas**
 - Past Claims Hot Spots
 - Interstates
 - Major Roads
 - Streams / Rivers
- CNMS Data**
 - Validated
 - Requires Assessment
 - Not Valid
 - USGS Gages
 - LOMC Locations
 - HUC-8 Watershed Boundary
 - HUC-10 Watershed Boundary
 - Lakes
 - Municipal Boundaries
 - Counties
- Dams**
 - Class 1 Dam - greater than 10' or greater than 100,000 cubic feet storage
 - Class 2 Dam - greater than 10' or greater than 100,000 cubic feet storage, but not greater than 100,000 cubic feet storage
 - Class 3 Dam - greater than 10' or greater than 100,000 cubic feet storage, but not greater than 100,000 cubic feet storage, and not a dam
 - Class 4 Dam - greater than 10' or greater than 100,000 cubic feet storage, but not a dam

WATERSHED LOCATOR



NATIONAL FLOOD INSURANCE PROGRAM
Discovery Map: Flood Risk

HURON-VERMILION WATERSHED, OHIO

Drainage Area (sq. mi.)	764
Studied Streams (mi.)	461
Detailed Streams (mi.)	25
Approximate Streams (mi.)	436



HUC-8 Code
04100012
RELEASE DATE
7/08/2011

Table 1. NFIP Participation Status

County	Community	Participating?
Ashland	Unincorporated	Y
	Savannah	N
	Bailey Lakes	N
Crawford	Unincorporated	Y
Erie	Milan	Y
	Huron	Y
	Berlin Heights	N
	Unincorporated	Y
Huron	Norwalk	Y
	Greenwich	Y
	Monroeville	Y
	North Fairfield	N
	Willard	Y
	Unincorporated	Y
	New London	Y
	Wakeman	Y
Lorain	Unincorporated	Y
	Kipton	Y
	South Amherst	Y
	Vermilion	Y
Richland	Plymouth	N
	Shiloh	N
	Unincorporated	Y
Seneca	Unincorporated	Y

II. Project Description and Methodology

Discovery is the process of data collection, including information exchange between all governmental levels of stakeholders, spatial data presentation, and cooperative discussion with stakeholders to better understand the area, decide whether a flood risk project is appropriate, and if so, to collaborate on the project planning in detail. At this time, Discovery processes and requirements are still being defined; however, draft guidance is available from the draft *Appendix I – Discovery (June 2011)*, the draft *Meetings Guidance for FEMA Personnel (June 2011)* and the *FY11 Discovery, Statement of Priorities (January 2011)*. In addition, there are several draft tools and templates at various stages of completion that were used to support the effort.

Region V initiated a Discovery project in July 2011 for the Huron Vermilion Watershed. The Discovery process involved coordination with watershed stakeholders, data collection and analysis, a meeting with stakeholders in the watershed, and development of recommendations for Risk MAP projects based on an analysis of data and information gathered throughout the process.

The initial phase in the Discovery process was establishing a Project Team made up of local, state, and federal agencies. The Project Team for the Huron Vermilion Watershed included representatives from:

- FEMA Region V, Risk Analysis Branch
- FEMA Region V, Floodplain Management and Insurance Branch
- FEMA Region V, Hazard Mitigation Assistance Branch
- Ohio Department of Natural Resources (ODNR)
- Ohio Emergency Management Agency (OEMA)

Project Team contact information and Project Team meeting minutes are provided in Appendix A. The Project Team worked together to compile the stakeholder list for the Huron Vermilion watershed. Discovery Meeting invitations are presented in Appendix B. A list of the contacts made during this effort, including phone logs, notes from interviews, invitation lists, etc. are included in Appendices B and D to this document.

ODNR coordinated with community officials and other watershed stakeholders through written invitations, phone calls and follow-up emails. The coordination included giving community officials information about the Discovery process. Communities were asked to identify “Areas of Concern” which could be addressed during the Discovery Meeting (mapping needs, desired mitigation projects, etc.) and added to the Discovery Geodatabase and Final Discovery Map.

The second phase of the Discovery Project was the collection of relevant tabular and spatial data for all the communities within the watershed. The data was collected through online resources, Federal and State sources, and interviews with cooperating communities. The collected data was used to evaluate both previous and current flooding concerns, while determining the vital areas requiring mapping needs. Section IV, Data Analysis, provides a more in-depth look at the collected data.

The third phase was to hold watershed-wide Discovery Meetings and facilitate discussion and data analysis of study needs, mitigation project needs, desired compliance support, and local flood risk awareness efforts. One (1) watershed-wide Discovery Meeting was held on July 13, 2011 in the City of Norwalk. The discussion was stimulated using the Discovery Geodatabase display of relevant data. Attendees, including all affected communities and selected other stakeholders, cooperatively identified possible solutions for the Areas of Concern shown on the Discovery Meeting Map. Solutions included recommendations of

floodplain studies, mitigation projects, compliance issues, and ideas on how to improve the local flood risk communication programs.

Copies of the Discovery Meeting Presentations, sign in sheets, handouts, meeting notes and meeting feedback forms are presented in Appendices, C, D, E and F, respectively.

The fourth phase of the Discovery effort involved an analysis of the data and information collected and discussed at the meeting, and recommendations as to the future relationship and activities between FEMA and the watershed communities. The Final Discovery Map, presented in Appendix G, indicates desired study areas and mitigation project locations, and the Discovery Report documents the results of data collection and conversation. If a Risk MAP project is to be initiated in this watershed, Discovery will be concluded with the finalization of a project scope and signed Project Charters, which indicate that all affected stakeholders agree to the terms of a funded project, including communication and data responsibilities.

III. Data Analysis

Discovery data collection entailed a massive collection of tabular and spatial data for all stakeholder communities from Federal, State and Local sources. A list of the data collected, the deliverable or product in which the data are included, and the source of the data is presented in Table 2. In addition, Data Analysis is divided between two sections: one section listing the data that can be used for Risk MAP products (regulatory and non-regulatory) and, one section listing the other data and information that helped the Project Team to form a more holistic understanding of this watershed.

Table 2. Data Collection for Huron Vermilion Watershed

Data Types	Deliverable/ Product	Source
Mitigation Plans Status	Table in Report	FEMA Regional Office, OEMA
Mitigation Projects	Table in Report	Data.gov: FEMA Hazard Mitigation Program Summary, OEMA
Repetitive Loss	Table in Report	Community Information System (CIS), OEMA
Declared Disasters	Discovery Maps	Data.gov: FEMA Disaster Declarations Summary
Past flood claims and repetitive loss properties	Table in Report	FEMA R5 and/or ODNR
HUC-8 Watershed	Discovery Map Geo-Database	USGS National Hydrography Dataset (NHD)
HUC-12 Watersheds	Discovery Map Geo-Database	National Resource Conservation Service (NRCS)

Data Types	Deliverable/ Product	Source
Jurisdictional Boundaries	Discovery Map Geo-Database	FEMA and ODNR
State lands	Discovery Map Geo-Database	Ohio Department of Natural Resources (ODNR)
Federal lands	Discovery Map Geo-Database	USGS National Atlas
Transportation Major and Minor	Discovery Map Geo-Database	FEMA
Stream lines	Discovery Map Geo-Database	National Hydrography Dataset (NHD) and FEMA
Study Needs	Discovery Map Geo-Database	Coordinated Needs Management System (CNMS)
Topographic data	Discovery Map Geo-Database	Ohio Statewide Imagery Program (OSIP)
HAZUS - Average Annualized Loss (AAL)	Discovery Map Geo-Database	STARR
Local mitigation plans	Discovery Map Geo-Database	OEMA
State mitigation plans	Discovery Map Geo-Database	ODPS - Ohio Emergency Management Agency (OEMA)
Regional flood control structures	Discovery Map Geo-Database	Ohio Department of Natural Resources (ODNR) and FEMA
Stream Gages	Discovery Map Geo-Database	U.S. Geological Survey (USGS)
Flooded Structures	Discovery Map Geo-Database	Ohio Department of Natural Resources (ODNR)
Effective study data	Discovery Map Geo-Database	FEMA's County DFIRM Data
Orthophotography	Discovery Map Geo-Database	Ohio Statewide Imagery Program (OSIP)
Contacts	Excel spreadsheet	Local websites, State/FEMA updates

i. Data that can be used for Flood Risk Products

Topographic and Imagery Data

As shown on the Final Discovery Map, LiDAR elevation data and digital orthophotography is available for the project area provided by the Ohio Geographically Referenced Information Program (OGRIP), as part of the Ohio Statewide Imagery Program (OSIP). The goal of OSIP I was to develop and maintain a seamless statewide base map. OSIP is an initiative partnered by several State Agencies (i.e. ODOT, ODNR) through OGRIP. Data from this project forms the foundation of the statewide base map, and was developed primarily to support multi-use applications, including homeland security, emergency management, economic development, and the business of government. The digital orthophotography consists of MrSID Images produced at 1-foot pixel resolution at a 30:1 compression ratio. The LiDAR elevation data consists of Digital Elevation Model (DEM) raster tiles acquired to meet +/- 1-foot vertical accuracy. This is suitable for rectification of digital orthophotography and for the creation of 2- and 5-foot contours (with the addition of 3D compiled breaklines). OSIP products within the Huron Vermilion Watershed were collected during leaf-off conditions between 2006 and 2008. In February 2011, Ohio initiated a continuation of the OSIP program. OSIP II imagery will

be acquired beginning in spring 2011 and continuing through 2014. For OSIP II county specific acquisition information as of May 9, 2011, see Appendix H.

USGS Gages

ODNR has identified several USGS stream gages in the watershed. The locations of the gages are shown on the Discovery Map and a summary is presented in Table 3.

Table 3. USGS Gages

Gage Number	Station Name and Location	Years of Record (Peaks)
4199000	Huron River at Milan, Oh	NA
4199155	Old Woman Creek at Berlin Rd near Huron, Oh	NA
4199500	Vermilion River near Vermilion, Oh	NA

Average Annualized Loss (AAL) Data

FEMA has conducted a Level 1 Hazus flood analysis to determine average annualized losses (AAL) for the project area. This analysis was based on USGS 30-meter DEM data and Hazus software default inventory data. The Hazus riverine hydrology analysis used default USGS regression equations to estimate the peak flows for selected return periods and the USGS topographic data to conduct normal depth calculations for flood depth grids. The loss estimation for the AAL data was then conducted to produce loss calculations at the U.S. census block level.

The AAL data is symbolized on the Discovery Map as varying levels of risk. During the Discovery meeting, the Level 1 analysis results will be validated by stakeholders to identify potential sites for Refined Analyses.

ii. Other Data and Information

Mitigation Plans/Status

Hazard Mitigation Plans (HMPs) are prepared to assist communities to reduce their risk to natural hazard events. The plans are used to develop strategies for risk reduction and to serve as a guide for all mitigation activities in the given county or community. The available HMPs obtained and reviewed for this Discovery Project are presented in Table 4.

Table 4. Hazard Mitigation Plan Status

County/Community	Hazus	Hazard Mitigation Plan	Issue Date	Expiration Date
Ashland County	Y	Y	7/13/2009	7/13/2014
Crawford County*	Y	Y*	6/23/2006	6/23/2011
Erie County	Y	Y	1/28/2008	1/28/2013
Huron County*	Y	Y*	2/15/2006	2/15/2011
Lorain County	Y	Y	1/29/2007	1/29/2012
Richland County*	Y	Y*	3/21/2007	8/4/2011
Seneca County	Y	Y	8/6/2007	8/6/2012

**Hazard Mitigation plan is expired.*

Critical facilities are the facilities that can impact the delivery of vital services, cause greater damages to other sectors of a community, or put special populations at risk. The assessment of the flood risk posed to critical facilities within the watershed is an important aspect of the HMPs. Critical facilities that are located within the 1-percent-annual-chance floodplain were quantified and identified as at-risk structures. The exact number of critical facilities that are considered at-risk is not quantifiable due to the limited detail presented in the HMPs. The number of critical facilities estimated to be within the 1-percent-annual-chance floodplain was determined by overlaying Hazard Maps included in the HMP's with the latest flood hazard data. However, the risk of flood damage is limited by the detail and accuracy of the most recent flood map.

A repetitive loss structure is a term associated with the National Flood Insurance Program (NFIP). For Flood Mitigation Assistance (FMA) program purposes, a repetitive loss structure is one that is covered by a flood insurance contract under the NFIP, that has suffered flood damage on two or more occasions over a 10-year period, ending on the date when a second claim is made, in which the cost to repair the flood damage, on average, equals or exceeds 25% of the market-value of the structure at the time of each flood loss event. In terms of the Community Rating System (CRS) of the NFIP, a repetitive loss property is any property, which the NFIP has paid two or more flood claims of \$1,000 or more, in any given 10-year period since 1978. A repetitive loss structure is important to the NFIP, since structures that flood frequently put a strain on the flood insurance fund. It should also be important to a community because of the disruption and threat to residents' lives by the continual flooding.

Specific details regarding repetitive loss structures within the floodplain were not made available in the available HMPs. The locations of repetitive loss structures presented on the Discovery Map were determined by rectifying the HMP's Hazard Maps to the Discovery Map's base map data. The exact locations and numbers of repetitive loss structures have

been summarized with caution due to the lack of detail in the HMPs and Hazard Maps. Areas that have suffered multiple repetitive losses are some of the most important areas of mitigation interest.

Table 5: Number of Repetitive Loss Structures by community

Community	County	# Rep Loss Structures
Ashland Unincorporated	Ashland	4
Bailey Lakes	Ashland	0
Berlin Heights	Erie	0
Crawford Unincorporated	Crawford	4
Erie Unincorporated	Erie	53
Greenwich	Huron	0
Huron	Erie	41
Huron Unincorporated	Huron	0
Kipton	Lorain	0
Lorain Unincorporated	Lorain	31
Milan	Erie	0
Monroeville	Huron	0
New London	Huron	0
North Fairfield	Huron	0
Norwalk	Huron	10
Plymouth	Richland	0
Richland Unincorporated	Richland	2
Savannah	Ashland	0
Seneca Unincorporated	Seneca	10
Shiloh	Richland	0
South Amherst	Lorain	5
Vermilion	Lorain	128
Wakeman	Huron	0
Willard	Huron	0

Numerous locations of roads overtopping during flood events were identified during the data collection and Discovery Meeting process.

Numerous dams exist within the watershed, but are not mentioned in the HMPs as flood control structures. According to the ODNR database, eight (8) Class I dams are located within the watershed and owned/operated by state or federal agencies.

The overall goals of the reviewed HMP's were found to be consistent; however, specific methods for implementation of these goals and locations of specific projects were not readily available. These goals include:

- Educate the citizens of each county to increase awareness of flooding and where to seek safety during flood events
- Provide adequate shelters where citizens can seek safety from severe weather and flooding
- Improve the warning systems and radio communications throughout the county
- Expedite the clean up process through coordination and equipment acquisition
- Update countywide NFIP maps
- Purchase or flood proof repetitive loss structures
- Develop map of infrastructure concerns

Some of the county's/community's HMPs included the locations and number of repetitive loss structures while other plans left this information out. This inconsistency in information holds true with the location and number of critical facilities found within the 1-percent-annual-chance floodplain.

Planned Mitigation Projects

There are a few ongoing mitigation projects in the Huron Vermilion Watershed. In Erie County, they have created a flood compensation bank which is used for floodplain encroachment compensation or flood storage in which the basin's volume may be purchased to mitigate the effects of new development. A development may purchase storage volume from the bank to compensate for floodplain encroachment or to satisfy storm water detention requirements provide that the basin is within the appropriate zone of influence. In Huron County's Hazard Mitigation plan, there are a couple goals. The first is to mitigate all repetitive loss structures within the county. The second is to elevate the height of Daniels Road for a distance of 1,325 feet that is subject to flooding. Mitigating repetitive agricultural flood loss agricultural fields is also important in Huron County. The last goal mentioned in the HMP is to clean out Skellinger Creek by removing obstructions which will minimize flooding. This last item will only minimize flooding locally. The water has to go somewhere so erosion and flooding may be increased downstream as a result.

Coordinated Needs Management Strategy (CNMS) and NFIP Mapping Study Needs

Analysis of the CNMS data for the Huron Vermilion Watershed is completed. Analyzed studies have been identified as "VALID" or "UNVERIFIED". The current CNMS geospatial data is presented on the Final Discovery Map.

Community Rating System (CRS)

There are currently no communities in the Huron Vermilion Watershed that participate in CRS.

Levees

No levees have been identified within the Huron Vermilion watershed within FEMA's MLI database

Floodplain Management/Community Assistance Visits

FEMA uses a number of key tools to determine a community's compliance with the minimum regulations of the National Flood Insurance Program. Among them are Community Assistance Visits (CAVs), the Letter of Map Change (LOMC) process, and Submit-for-Rates. These tools help assess a community's implementation of their Flood Damage Reduction Regulations and identify any floodplain management deficiencies and violations. The CAV is a visit to a community by a FEMA staff member or staff of a state agency on behalf of FEMA that serves the dual purpose of providing technical assistance to the community and assuring that the community is adequately enforcing its floodplain management regulations. Potential violations may be identified during the CAV visit as a result of touring the floodplain, inspecting community permit files, and meeting with local appointed and elected officials. For most recent CAV information, see Table 6.

Active CAV's are the communities that are currently going through the CAV process. Communities that have gone through a CAV and have provided all the necessary information to show they are in compliance are listed as Closed. FEMA CAV's can be indicative of unresolved issues and has been turned over to FEMA for follow up and possible enforcement action against the community if the outstanding issues are not resolved. Communities with FEMA referred CAV's include the City of Norwalk and Huron County¹.

Violations can also be discovered when LOMR-F applications depict a non-compliant structure based on elevation data; or can be found through Submit-for-Rate requests, which occur when a structure applies for flood insurance but has been identified as being two or more feet below Base Flood Elevation (BFE). Elevation comparisons identified through LOMR-F applications and Submit-for-Rates imply structures were not built compliantly.

If administrative problems or potential violations are identified, the community will be notified and given the opportunity to correct those administrative procedures and remedy the violations to the maximum extent possible within established deadlines. FEMA or the state will work with the community to help them bring their program into compliance with NFIP requirements. In extreme cases where the community does not take action to bring itself into compliance, FEMA may initiate an enforcement action against the community. No RiskMAP needs regarding compliance were identified.

¹ This list may not encompass all communities within the watershed with violations. Similarly, communities may have additional violations not addressed above

Table 6: Community Assistance Visit status by community

<i>County</i>	<i>Community</i>	<i>CID</i>	<i>Recent CAV date</i>	<i>CAV Status*</i>
Ashland	Bailey Lakes	390792	NA	NA
	Savannah	390861	NA	NA
	Unincorporated	390759	11/25/1997	C
Crawford	Unincorporated	390811	2/20/1996	C
Erie	Berlin Heights	390650	NA	NA
	Huron	390154	5/20/2002	C
	Milan	390155	5/9/1995	C
	Unincorporated	390153	4/29/1998	C
Huron	Greenwich	390282	6/20/1994	C
	Monroeville	390283	6/1/1995	-
	New London	390284	6/8/1995	-
	North Fairfield	390285	NA	NA
	Norwalk	390286	12/8/2006	F
	Wakeman	390288	NA	NA
	Willard	390289	3/22/1990	-
	Unincorporated	390288	5/2/2007	F
Lorain	Kipton	390743	3/14/2001	C
	South Amherst	390356	12/15/1994	-
	Vermilion	395374	9/27/1999	C
	Unincorporated	390346	3/26/2008	C
Richland	Plymouth	390287	NA	NA
	Shiloh	395411	NA	NA
	Unincorporated	390476	8/31/1993	C
Seneca	Unincorporated	390779	6/21/2001	C

*A= Active, C= Closed, F= Referred to FEMA

Regulatory Mapping

Huron Vermilion Watershed communities have all had recent countywide map updates as part of FEMA’s Map Modernization Program. The effective dates of the most recent county-wide projects are presented on the Discovery Map and below in Table 7. The effective data is a combination of both detailed and approximate analysis with varying vintage dates.

Table 7: Map Modernization Activity

County	Status	Effective Date
Ashland	Effective	8/18/2009
Crawford	Effective	1/19/2011
Erie	Effective	8/28/2008
Huron	Effective	1/19/2011
Lorain	Effective	8/19/2008
Richland	Effective	4/4/2011
Seneca	Effective	5/3/2011

IV. Risk MAP Needs

The results of the data collection and analysis were thoroughly discussed at the Discovery Meeting. The following sections include issues and situations that exist in the Huron Vermilion Watershed communities that can be considered Risk MAP Needs, to be addressed with Risk MAP projects. Details and background on all issues can be found in the interview notes, meeting notes, and other files included in the appendices.

i. Floodplain Studies

All of the counties located in the Huron Vermilion Watershed have undergone recent countywide DFIRM projects; however, not all of these projects included new Zone A studies and some approximate flood hazards were digitally converted.

As shown on the Final Discovery Map, recent LiDAR and imagery data meeting FEMA's Guidelines and Specifications have been developed for the entire Discovery Project Area.

As shown on the Final Discovery Map, numerous study reaches have been classified as "UNVERIFIED" during the CNMS process.

At the Discovery Meeting, several areas were identified by community officials as needing an updated detailed or approximate study.

Based on the results of the Stakeholder Coordination, Data Analysis and Discovery Meeting, proposed Study Areas in the Huron Vermilion have been identified in Table 8. The specific locations of these Study Areas are presented on the Final Discovery Map. A complete list of mapping needs is located in Appendix G.

Table 8. Mapping Needs

FLOODING SOURCE	STUDY LENGTH (miles)	STUDY TYPE	PRIORITY
Huron River	4.04	Redelineated	Very High
Vermilion River	5.53	Redelineated	High
Huron River	2.47	Redelineated	Medium
Winkler Creek	1.57	Redelineated	Medium
Edison Creek	1.07	Redelineated	Medium
Edson Creek	1.05	Redelineated	Medium
Norwalk Creek	3.44	Updated Detailed	Medium
Huron River	6.78	Redelineated	Medium
Vermilion River	7.26	Digital Conversion Approximate	Medium
Darby Creek	1.93	Redelineated	Medium
Unnamed Creek	0.38	Redelineated	Medium
Chaska Beach Cove Ditch	0.19	Redelineated	Low
East Branch Huron River	1.49	Redelineated	Low
Hahn Creek	1.61	Redelineated	Low
Mudbrook Creek	1.06	Redelineated	Low
Sawmill Creek	0.24	Redelineated	Low
Sugar Creek	2.22	Redelineated	Low
Vermilion River	33.38	New Approximate	Low
West Branch Huron River	39.89	New Approximate	Low
Unnamed Creek	0.23	New Approximate	Low
Unnamed Creek	0.63	Redelineated	Low
Unnamed Creek	2.54	Redelineated	Low
Unnamed Creek	3.31	Redelineated	Low
Buck Creek	4.99	Updated Approximate	Low
Chappel Creek	1.51	Redelineated	Low
Chappel Creek	4.01	Redelineated	Low
East Fork Vermilion River	0.38	Redelineated	Low
East Fork Vermilion River	0.38	Redelineated	Low
East Fork Vermilion River	2.10	Redelineated	Low
East Fork Vermilion River	7.70	Digital Conversion Approximate	Low

ii. Mitigation Projects

Two types of potential mitigation projects were identified by the communities included:

- Repetitively flooded structures- Erie County, Norwalk and Vermilion
- Repetitively flooded roads- Vermilion

Other areas of potential mitigation interest were also obtained from the local officials and those are in Table 9.

Table 9: Areas of Mitigation Interest (AOMI)

Community	County	Flooding Source	Comments
Erie County Unincorporated	Erie	Huron River	Repetitively Flooded Structures
Norwalk	Huron	Norwalk Creek	Repetitively Flooded Structures
Vermilion	Lorain	Hollyview Ditch	Repetitively Flooding
Vermilion	Lorain	Vermilion River	Frequent Flooding of Residential Homes
Vermilion	Lorain	Vermilion River	Repetitively Flooding
Vermilion	Lorain	Vermilion River	Repetitively Flooded, Riverside Drive
Vermilion	Lorain	Vermilion River	Repetitively Flooded, Nautical Drive
Vermilion	Lorain	Vermilion River	Repetitively Flooded, Local Marina's
Norwalk	Huron	Norwalk Creek	East Elm St, Repetitively Flooded Homes
Norwalk	Huron	Norwalk Creek	West Main St, Repetitively Flooded Structures
Norwalk	Huron	Norwalk Creek	Dam Issue

iii. Compliance

While communities have referred CAV's no Risk MAP needs regarding compliance issues were identified.

iv. Communications

Invitations to the Discovery meeting were sent on June 14, 2011 to the identified stakeholders within Huron Vermilion watershed. The stakeholders were all interested in learning more about how to provide flood risk information to residents. Community representatives indicated the need to be informed of the results of the Discovery process and opportunities for public input during the process. The compilation of all the information and data gathered during the Discovery process was provided to the Huron Vermilion watershed stakeholders on December 1, 2011.

v. Close

Community Stakeholders were interested in learning about the Discovery process and Risk MAP and how they can begin to develop resiliency to flood events. They identified several areas for map updates and areas in which they could use additional FEMA support. The information gathered in the Discovery process provided invaluable data for analysis and identifying the most flood-prone and at-risk areas. Local officials will now be more aware of risks in their area; therefore, state and federal agencies will be able to focus their resources on the most feasible projects. The local officials in the Huron Vermilion Watershed would benefit from the implementation of Risk MAP projects.

vi. Appendix - Discovery Files

The Discovery Report appendices are stored digitally under their respective folders on the FEMA Mapping Information Platform (MIP).

The Discovery Report appendices the Discovery GIS Geodatabase are also available for download from the following FTP site:

ftp://ftp.dnr.state.oh.us/Water/Public/Risk_MAP/Discovery/Huron-VermillionWS/

Appendix A - Project Team Contact Information & Meeting Minutes

Appendix B - Stakeholder Contact Information & Meeting Invitations

Appendix C - Discovery Meeting Presentations

Appendix D - Discovery Meeting Sign-In Sheets & Handouts

Appendix E - Discovery Meeting Notes & Comments

Appendix F - Discovery Meeting Participant Feedback

Appendix G - Discovery Maps & Mapping Needs

Appendix H - OSIP II Update