

Appendix A:
Notification Process

FOR IMMEDIATE RELEASE: May 13th, 2005

Contact: Mr. Gary Bolender, (440) 576-9148

Ashtabula County to Complete an All Natural Hazard Mitigation Plan

Ashtabula, OH – The Ashtabula County Emergency Management Agency (EMA) is moving forward in making their community disaster resistant by creating an All-Natural Hazards Mitigation Plan. Ashtabula County has received funding through the Ohio Emergency Management Agency to complete an All Natural Hazard Mitigation Plan. This will be an exciting process that will involve all jurisdictions of Ashtabula County. Gary Bolender, Director for Ashtabula County EMA, will head the Core Group: a mingling of leaders that has been established within the community. They will have a key role in creating a Mitigation Plan of which the entire County can be proud. The meeting will be conducted at the.....

As part of the Disaster Mitigation Act, communities that desire to remain eligible for Federal and State mitigation funds must have an approved Mitigation Plan in place. Local participation is “key” to the successful implementation of these mitigation plans. Please Note: Townships may be covered by their County’s planning effort however all incorporated jurisdictions must participate in their County’s planning effort and adopt the approved plan (individually) in order to remain eligible for federal and state mitigation dollars in the future.

By choosing to participate in the Natural Hazard Mitigation Planning effort your communities (Ashtabula County and all incorporated jurisdictions) will become eligible for existing and future federal or state mitigation money. This mitigation money usually comes in the form of a grant such as the Hazard Mitigation Grant Program (HMGP), Flood Mitigation Assistance (FMA) or the Pre-Disaster Mitigation Grant Program (PDM), which is to be used to implement mitigation strategies and activities. Examples of eligible activities that could be supported by mitigation dollars include: relocation, acquisitions, elevation, dry-floodproofing, wet-floodproofing, lightning prediction systems, interoperable siren system, stream restorations or any other activity potentially funded with mitigation dollars.

Evans, Mechwart, Hambleton and Tilton (EMH&T), Inc. has been selected to lead this effort and brings to the table a substantial amount of experience in creating these types of plans.

Should be on your letterhead.

June 9, 2005

From the Desk of:

Mr. Gary Bolender
Ashtabula County Emergency Management Agency
25 West Jefferson Street
Jefferson, Ohio 44047
(440) 576-9148

SHOULD BE INDIVIDUALLY ADDRESSED TO STRESS IMPORTANCE

Communities who have not participated thus far include the Geneva, Roaming Shores, Orwell, Andover, Ashtabula, North Kingsville, Conneaut and Rock Creek.

Dear Mayor or Community Official Address to a specific person :

The Federal Disaster Mitigation Act of 2000 requires that local communities develop a hazard mitigation plan with specific goals and objectives for mitigating natural disasters such as severe winter storms, erosion, flooding and tornadoes. The Ashtabula County Board of Commissioners received a grant from the Ohio Emergency Management Agency to support development of a Hazard Mitigation Plan for Ashtabula County, including all 10 political jurisdictions: Geneva, Geneva-on-the-lake, Roaming Shores, Orwell, Andover, Ashtabula, Jefferson, North Kingsville, Conneaut and Rock Creek. All local incorporated communities in Ashtabula County must have a federally approved plan in order to qualify for pre- or post-disaster mitigation funding. **If you are receiving this letter this means that your community did not send a representative to the first planning meeting on June 8, 2005.**

In order to assure your community's compliance with these regulations, participation in this planning process is required. We are required to gather specific information from each individual community within the County.

When the Plan is completed, participating communities can then adopt the Plan created by the County and expedite eligibility for Federal Disaster Mitigation Funding when the next natural disaster occurs. The Plan will also help communities achieve and sustain future economic and community development, growth, and change that incorporate their local values and concerns for resiliency to natural disasters. Although natural weather-related occurrences will continue, this planning process will help local communities lessen their impact.

The Ashtabula County Core Group, in partnership with Evans, Mechwart, Hambleton & Tilton (EMH&T), is conducting a Hazard Analyses based on available information from federal, state and local community sources, identifying and evaluating potential alternatives for mitigation measures that can be taken in the event of a natural disaster, and creating an action plan for implementation by participating communities. Each local government will receive a copy of the draft Hazard Mitigation Plan for review and comment.

We request your participation in this process and hope that you can attend the next meeting scheduled for July 6th at 10:30am at the Ashtabula County Emergency Management office.

Thank you in advance for your assistance and participation. If you are unable to attend the next planning meeting please send a representative from your community to attend. If no one from your community can attend the next planning meeting please call the Ashtabula EMA office to determine how your community can still participate in this effort.

Sincerely,

Gary Bolender, Director
Ashtabula County EMA

Encl.

cc: Kari Mackenbach, EMH&T
Gary Bolender, EMA files
Ashtabula County Commissioners



July 28, 2005

Re: Invitation to Mitigation Alternatives Meeting

Dear Core Group Member:

We have our next meeting on August 3rd at 10:00 am. It will be the same location as the last meeting at the Ashtabula EMA Office. **Lunch will be provided so there is no excuse not to be there. ;-)**

Please note that we are meeting a half an hour earlier than last time: **10:00 am**.

Enclosed you will find several documents that we will be using for the meeting. Please feel free to look these over before the meeting. I have also attached the agenda so you know what we have to cover.

You should have already received the minutes from the last meeting and the overall goals. If not, let us know and we will forward them to you.

I look forward to seeing you and if you have any questions in the interim please feel free to give me a call at (614) 470-9491.

Sincerely,

EVANS, MECHWART, HAMBLETON & TILTON, INC.

Kari Mackenbach
Planning and Mitigation Program Manager



Ashtabula County Emergency Management Agency

25 West Jefferson Street

Jefferson, Ohio 44047

440-576-9148

FAX 440-576-9059

ema@co.ashtabula.oh.us

May 25, 2005

Dear Core Group Member:

Re: Kick-off Meeting for Hazard Mitigation Planning

The Ashtabula Emergency Management Agency is moving forward in making their community Disaster Resistant and wants you to be a part of this precedent setting process! A Core Group of people are needed for the purpose of creating the Ashtabula County All-Natural Hazards Mitigation Plan (Mitigation Plan) and it's now time to start planning. This will be an exciting process that will involve all ten incorporated jurisdictions of Ashtabula County including, Geneva, Geneva-on-the-lake, Roaming Shores, Orwell, Andover, Ashtabula, Jefferson, North Kingsville, Conneaut and Rock Creek, as well as the unincorporated areas of Ashtabula County.

The Core Group will have a key role in creating the Mitigation Plan that the entire County can be proud of. It is anticipated that we will be meeting approximately 4 times.

There will be an initial "kick-off" meeting on June 8th at 10:30am and should last approximately an hour and a half. The location of the meeting will be in the Commissioner's Meeting Room. The agenda of this meeting will consist of the following items:

1. Discussion and Presentation of the All Hazard Mitigation Planning process
2. Establish meetings and important dates
3. Organize, schedule and conduct initial interviews
4. Exchange information among Core Group Members
5. Discuss initial hazard assessment review
6. Discuss a prioritized list of potential hazards
7. Discuss a draft Mission Statement

Evans, Mechwart, Hambelton and Tilton (EMH&T), Inc. has been selected to lead this effort and brings to the table a substantial amount of experience in creating these types of plans.

If you have any questions before the kick-off meeting please do not hesitate to call or e-mail with questions or comments. Please let us know if you are unable to attend or are sending someone in your place to represent your community.

Sincerely,

Gary Bolender

Director

Ashtabula County Emergency Management Agency

CC: Kari Mackenbach, EMH&T



ASHTABULA COUNTY EMERGENCY MANAGEMENT AGENCY

25 West Jefferson Street

Jefferson, Ohio 44047

(440) 576-9148

FAX (440) 576-9059

ema@co.ashtabula.oh.us

June 14, 2005

Mr. James Pearson
Geneva City
44 North Forest St.
Geneva, Ohio 44041

Dear City Manager Pearson:

The Federal Disaster Mitigation Act of 2000 requires that local communities develop a hazard mitigation plan with specific goals and objectives for mitigating natural disasters such as severe winter storms, erosion, flooding and tornadoes. The Ashtabula County Board of Commissioners received a grant from the Ohio Emergency Management Agency to support development of a Hazard Mitigation Plan for Ashtabula County, including all 10 political jurisdictions: Geneva, Geneva-on-the-lake, Roaming Shores, Orwell, Andover, Ashtabula, Jefferson, North-Kingsville, Conneaut and Rock Creek. All local incorporated communities in Ashtabula County must have a federally approved plan in order to qualify for pre- or post-disaster mitigation funding. **If you are receiving this letter this means that your community did not send a representative to the first planning meeting on June 8, 2005.**

In order to assure your community's compliance with these regulations, participation in this planning process is required. We are required to gather specific information from each individual community within the County.

When the Plan is completed, participating communities can then adopt the Plan created by the County and expedite eligibility for Federal Disaster Mitigation Funding when the next natural disaster occurs. The Plan will also help communities achieve and sustain future economic and community development, growth and change that incorporate their local values and concerns for resiliency to natural disasters. Although natural weather-related occurrences will continue, this planning process will help local communities lessen their impact.

The Ashtabula County Core Group, in partnership with Evans, Mechwart, Hambleton & Tilton (EMH&T), is conducting a Hazard Analysis based on available information from Federal, State and local community sources, identifying and evaluating potential alternatives for mitigation measures that can be taken in the event of a natural disaster and creating an action plan for implementation by participating communities. Each local government will receive a copy of the draft Hazard Mitigation Plan for review and comment.

We request your participation in this process and hope that you can attend the next meeting scheduled for July 6th at 10:30 a.m. at the Ashtabula County Emergency Management office.

Thank you in advance for your assistance and participation. If you are unable to attend the next planning meeting please send a representative from your community to attend. If no one from your Community can attend the next planning meeting please call the Ashtabula EMA office to determine how your Community can still participate in this effort.

Sincerely,

Gary Bolender, Director
Ashtabula County EMA

cc: Kari Mackenbach, EMH&T
Ashtabula County Commissioners



ASHTABULA COUNTY EMERGENCY MANAGEMENT
AGENCY

25 West Jefferson Street
Jefferson, Ohio 44047
(440) 576-9148 FAX (440) 576-9059
ema@co.ashtabula.oh.us

May 13, 2005

Ms. Linda Biel, Director
Trumbull County Emergency Management Agency
176 Chestnut Avenue NE
Warren, Ohio 44483

Re: **Ashtabula County All Natural Hazards Plan (Mitigation Plan)**

Dear Director Biel:

The purpose of this letter is to notify adjacent counties that Ashtabula County is actively developing a countywide All Natural Hazards Mitigation Plan. The purpose of this Mitigation Plan is to allow all of Ashtabula County to better plan for natural hazard events. We are using our Mitigation Plan to meet the mandates of the Federal Disaster Mitigation Act of 2000. We also wanted to develop a working plan that would meet the needs of Ashtabula County, and not be merely a "shelf document."

We have been advised of the requirement to notify adjacent communities. *Therefore, let this letter serve as notification to adjacent communities that Ashtabula County is actively developing an All Natural Hazards Mitigation Plan.*

Please contact us as necessary with any questions, comments, concerns, or for more information or clarification on this or any other mitigation issue.

Thank you,

Sincerely,

Gary Bolender
Director

CC: Ashtabula County Board of Commissioners
Kari Mackenbach, EMH&T



**ASHTABULA COUNTY EMERGENCY MANAGEMENT
AGENCY**

25 West Jefferson Street
Jefferson, Ohio 44047
(440) 576-9148 FAX (440) 576-9059
ema@co.ashtabula.oh.us

REMINDER:

The next meeting for the Ashtabula County All Hazard Mitigation Plan is
Wednesday, July 6, 2005 at 10:30 a.m. in the Emergency Management
Agency's EOC. Please RSVP by Tuesday, July 5th. We appreciate any and
all help.

Thank you,

Dannette M. Ingersoll
Administrative Assistant



Evans, Mechwart, Hambleton & Tilton, Inc.
Engineers, Surveyors, Planners, Scientists

September 23, 2005

Re: Ashtabula County Natural Hazards Mitigation Plan

Dear Mr. DiBell:

As you are aware, the Ashtabula County Emergency Management Agency (EMA) and a selected Core Group have been actively involved in drafting an All Natural Hazards Mitigation Plan (Mitigation Plan) for your County. As a group, the EMA and Core Group developed alternatives and projects to mitigate the problems within the County due to natural disasters. These alternatives are listed in a matrix that is attached to this letter and will be included in the Mitigation Plan. The rating of these alternatives was discussed and prioritized at the September 20, 2005 mitigation planning meeting. Please review the minutes from that meeting for those changes.

Another component of this plan is composed of mitigation alternatives and projects that each individual jurisdiction chooses to support in their community. As a representative of the incorporated jurisdiction of Andover located within Ashtabula County and a member of the Core Group, you are being asked to review the overall matrix and select a mitigation alternative or alternatives in each hazard category to support in your community. Please choose your alternative(s) to support and forward them to me by October 14, 2005. If we do not hear from your community within that time, we will assume you agree with the overall results of prioritized alternatives the County selected.

If you have any questions please do not hesitate to call me at (614) 775-4531 or e-mail me at hbowden@emht.com.

Sincerely,

EVANS, MECHWART, HAMBLETON & TILTON, INC.

Heather Bowden
Hazard Mitigation Planner
Planning and Mitigation

M C M X X V I

5500 New Albany Road, Columbus, OH 43054 • Phone 614.775.4500 • Fax 614.775.4800

Columbus • Cincinnati • Indianapolis • Charlotte

emht.com



Evans, Mechwart, Hambleton & Tilton, Inc.
Engineers, Surveyors, Planners, Scientists

September 23, 2005

Re: Ashtabula County Natural Hazards Mitigation Plan

Dear Mr. Zullo:

As you are aware, the Ashtabula County Emergency Management Agency (EMA) and a selected Core Group have been actively involved in drafting an All Natural Hazards Mitigation Plan (Mitigation Plan) for your County. As a group, the EMA and Core Group developed alternatives and projects to mitigate the problems within the County due to natural disasters. These alternatives are listed in a matrix that is attached to this letter and will be included in the Mitigation Plan. The rating of these alternatives was discussed and prioritized at the September 20, 2005 mitigation planning meeting. Please review the minutes from that meeting for those changes.

Another component of this plan is composed of mitigation alternatives and projects that each individual jurisdiction chooses to support in their community. As a representative of the incorporated jurisdiction of Ashtabula located within Ashtabula County and a member of the Core Group, you are being asked to review the overall matrix and select a mitigation alternative or alternatives in each hazard category to support in your community. Please choose your alternative(s) to support and forward them to me by October 14, 2005. If we do not hear from your community within that time, we will assume you agree with the overall results of prioritized alternatives the County selected.

If you have any questions please do not hesitate to call me at (614) 775-4531 or e-mail me at hbowden@emht.com.

Sincerely,

EVANS, MECHWART, HAMBLETON & TILTON, INC.

Heather Bowden
Hazard Mitigation Planner
Planning and Mitigation

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Engineers, Surveyors, Planners, Scientists

September 23, 2005

Re: Ashtabula County Natural Hazards Mitigation Plan

Dear Bim Orrenman:

As you are aware, the Ashtabula County Emergency Management Agency (EMA) and a selected Core Group have been actively involved in drafting an All Natural Hazards Mitigation Plan (Mitigation Plan) for your County. As a group, the EMA and Core Group developed alternatives and projects to mitigate the problems within the County due to natural disasters. These alternatives are listed in a matrix that is attached to this letter and will be included in the Mitigation Plan. The rating of these alternatives was discussed and prioritized at the September 20, 2005 mitigation planning meeting. Please review the minutes from that meeting for those changes.

Another component of this plan is composed of mitigation alternatives and projects that each individual jurisdiction chooses to support in their community. As a representative of the incorporated jurisdiction of Conneaut located within Ashtabula County and a member of the Core Group, you are being asked to review the overall matrix and select a mitigation alternative or alternatives in each hazard category to support in your community. Please choose your alternative(s) to support and forward them to me by October 14, 2005. If we do not hear from your community within that time, we will assume you agree with the overall results of prioritized alternatives the County selected.

If you have any questions please do not hesitate to call me at (614) 775-4531 or e-mail me at hbowden@emht.com.

Sincerely,

EVANS, MECHWART, HAMBLETON & TILTON, INC.

Heather Bowden
Hazard Mitigation Planner
Planning and Mitigation

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Engineers, Surveyors, Planners, Scientists

September 23, 2005

Re: Ashtabula County Natural Hazards Mitigation Plan

Dear Mr. Blon:

As you are aware, the Ashtabula County Emergency Management Agency (EMA) and a selected Core Group have been actively involved in drafting an All Natural Hazards Mitigation Plan (Mitigation Plan) for your County. As a group, the EMA and Core Group developed alternatives and projects to mitigate the problems within the County due to natural disasters. These alternatives are listed in a matrix that is attached to this letter and will be included in the Mitigation Plan. The rating of these alternatives was discussed and prioritized at the September 20, 2005 mitigation planning meeting. Please review the minutes from that meeting for those changes.

Another component of this plan is composed of mitigation alternatives and projects that each individual jurisdiction chooses to support in their community. As a representative of the incorporated jurisdiction of Jefferson located within Ashtabula County and a member of the Core Group, you are being asked to review the overall matrix and select a mitigation alternative or alternatives in each hazard category to support in your community. Please choose your alternative(s) to support and forward them to me by October 14, 2005. If we do not hear from your community within that time, we will assume you agree with the overall results of prioritized alternatives the County selected.

If you have any questions please do not hesitate to call me at (614) 775-4531 or e-mail me at hbowden@emht.com.

Sincerely,

EVANS, MECHWART, HAMBLETON & TILTON, INC.

Heather Bowden
Hazard Mitigation Planner
Planning and Mitigation

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Evans, Mechwart, Hambleton & Tilton, Inc.
Engineers, Surveyors, Planners, Scientists

September 23, 2005

Re: Ashtabula County Natural Hazards Mitigation Plan

Dear Ms. Malz:

As you are aware, the Ashtabula County Emergency Management Agency (EMA) and a selected Core Group have been actively involved in drafting an All Natural Hazards Mitigation Plan (Mitigation Plan) for your County. As a group, the EMA and Core Group developed alternatives and projects to mitigate the problems within the County due to natural disasters. These alternatives are listed in a matrix that is attached to this letter and will be included in the Mitigation Plan. The rating of these alternatives was discussed and prioritized at the September 20, 2005 mitigation planning meeting. Please review the minutes from that meeting for those changes.

Another component of this plan is composed of mitigation alternatives and projects that each individual jurisdiction chooses to support in their community. As a representative of Richmond Township located within Ashtabula County and a member of the Core Group, you are being asked to review the overall matrix and select a mitigation alternative or alternatives in each hazard category to support in your community. Please choose your alternative(s) to support and forward them to me by October 14, 2005. If we do not hear from your community within that time, we will assume you agree with the overall results of prioritized alternatives the County selected.

If you have any questions please do not hesitate to call me at (614) 775-4531 or e-mail me at hbowden@emht.com.

Sincerely,

EVANS, MECHWART, HAMBLETON & TILTON, INC.

Heather Bowden
Hazard Mitigation Planner
Planning and Mitigation

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Evans, Mechwart, Hambleton & Tilton, Inc.
Engineers, Surveyors, Planners, Scientists

September 23, 2005

Re: Ashtabula County Natural Hazards Mitigation Plan

Dear Ms. Carlo:

As you are aware, the Ashtabula County Emergency Management Agency (EMA) and a selected Core Group have been actively involved in drafting an All Natural Hazards Mitigation Plan (Mitigation Plan) for your County. As a group, the EMA and Core Group developed alternatives and projects to mitigate the problems within the County due to natural disasters. These alternatives are listed in a matrix that is attached to this letter and will be included in the Mitigation Plan. The rating of these alternatives was discussed and prioritized at the September 20, 2005 mitigation planning meeting. Please review the minutes from that meeting for those changes.

Another component of this plan is composed of mitigation alternatives and projects that each individual jurisdiction chooses to support in their community. As a representative of Saybrook Township located within Ashtabula County and a member of the Core Group, you are being asked to review the overall matrix and select a mitigation alternative or alternatives in each hazard category to support in your community. Please choose your alternative(s) to support and forward them to me by October 14, 2005. If we do not hear from your community within that time, we will assume you agree with the overall results of prioritized alternatives the County selected.

If you have any questions please do not hesitate to call me at (614) 775-4531 or e-mail me at hbowden@emht.com.

Sincerely,

EVANS, MECHWART, HAMBLETON & TILTON, INC.

Heather Bowden
Hazard Mitigation Planner
Planning and Mitigation

M C M X X V I

5500 New Albany Road, Columbus, OH 43054 • Phone 614.775.4500 • Fax 614.775.4800

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emht.com

**Ashtabula County
All Hazard Mitigation Plan
Core Group**

Name	Affiliation	Address	Phone	Fax	E-Mail
Ed Somppi 1,2,4	Geneva on the Lake	4964 S. Spencer Drive Geneva, Ohio 44041	440-466-8197	440-466-8911	villagehall@alltel.net somppis@adelphia.net
Chief Steve Febel 1,3	Jefferson Police Department	86 East Jefferson Street Jefferson, Ohio 44047	440-576-0010	440-576-0714	
Joe Moroski 1,3	Ashtabula County Comm.	25 West Jefferson Street Jefferson, Ohio 44047	440-576-3760	440-576-2344	jmoroski@suite224.net
Janice Switzer 1,2,3,4	Ashtabula SWCD	25 West Jefferson Street Jefferson, Ohio 44047	440-576-3777		jgswitzer@co.ashtabula.oh.us
Dave Plants 1,3	Ashtabula Township Fire	2718 North Ridge Road E. Ashtabula, Ohio 44004	440-997-4641		dplants@atfd.net
Gary Bolender 1	Ashtabula EMA	25 West Jefferson Street Jefferson, Ohio 44047	440-576-9148		ema@co.ashtabula.oh.us
Dannette (Dani) Ingersoll 1,2,3	Ashtabula EMA	25 West Jefferson Street Jefferson, Ohio 44047	440-576-9148		dmingersoll@co.ashtabula.oh.us

1 Kick Off Attendees, 2 Problem Statements Attendees, 3 Mitigation Alternatives Attendees

**Ashtabula County
All Hazard Mitigation Plan
Core Group**

Name	Affiliation	Address	Phone	Fax	E-Mail
Kari Mackenbach 1,2,3	EMH&T	170 Mill Street Gahanna, Ohio 43230	614-470-9491	614-470-9594	kmackenbach@emht.com
Jim Wann 4	Ashtabula EMA	25 West Jefferson Street Jefferson, Ohio 44047	440-576-9148		Jim_R_Wann@co.ashtabula.oh.us
Lynn Frank 3,4	Austinburg Twp Trustee	878 Mechanicsville Road Rock Creek, Ohio 44084	440-466-0474	440-466-4186	
Marilyn Malz 2,3	Richmond Twp Trustee	6151 Woodward Road Andover, Ohio 44003	440-669-0642		
Jennifer Brown 2,3,4	City of Geneva	44 N. Forest Street Geneva, Ohio 44041	440-466-4675	440-466-5027	asstcitymgr@genevaohio.com
Joseph DiBell 2	Village of Andover	134 Maple / PO Box 1267 Andover, Ohio 44003	440-293-4747	440-293-4878	
Cathy Williams 2,3,4	Village of Orwell	179 W. Main / PO Box 56 Orwell, Ohio 44137	440-437-6149	440-437-1055	cathryn@orwellvillage.org

1 Kick Off Attendees, 2 Problem Statements Attendees, 3 Mitigation Alternatives Attendees

**Ashtabula County
All Hazard Mitigation Plan
Core Group**

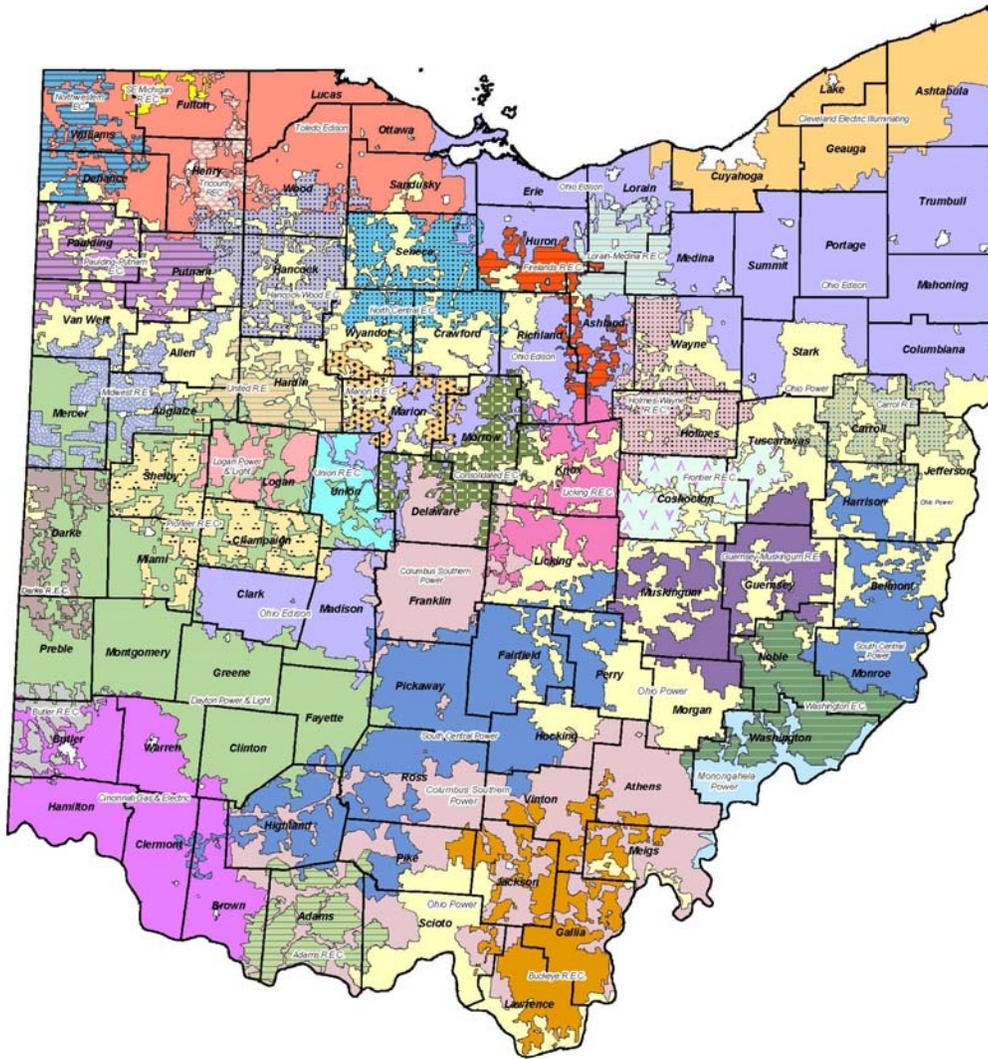
Leeann Moses 2,3,4	Roaming Shores Village	2500 Hayford / PO Box 237 Roaming Shores, Ohio 44084	440-563-3132	440-563-5912	village@roamingshores.org
Peggy Carlo 2	Saybrook Twp. Trustee	7247 Center Rd. Ashtabula, OH 44004	440-969-1106		peg.carlo@acmohealth.org
Name	Affiliation	Address	Phone	Fax	E-Mail
Michael Zullo 2	City of Ashtabula	4717 Main Avenue Ashtabula, Ohio 44004	440-992-7103	440-992-9306	michaelz@suite224.net
Tim Blon 2	Jefferson Village	86 E. Jefferson Street Jefferson, Ohio 44047	440-576-0010	440-576-0714	viljefpolice@suite224.net
Michael Sullivan 2,4	North Kingsville PD	North Kingsville Village PD PO Box 253 North Kingsville, Ohio 44048	440-224-1074	440-224-0331	
Jennifer Takacs 2,3,4	Rock Creek Village	2941 Rome-Rock Creek Rd. Rock Creek, Ohio 44081	440-563-3908		jemma111@yahoo.com
Kathy Takacs 2,3,4	Rock Creek Village	2941 Rome-Rock Creek Rd. Rock Creek, Ohio 44081	440-563-3908		

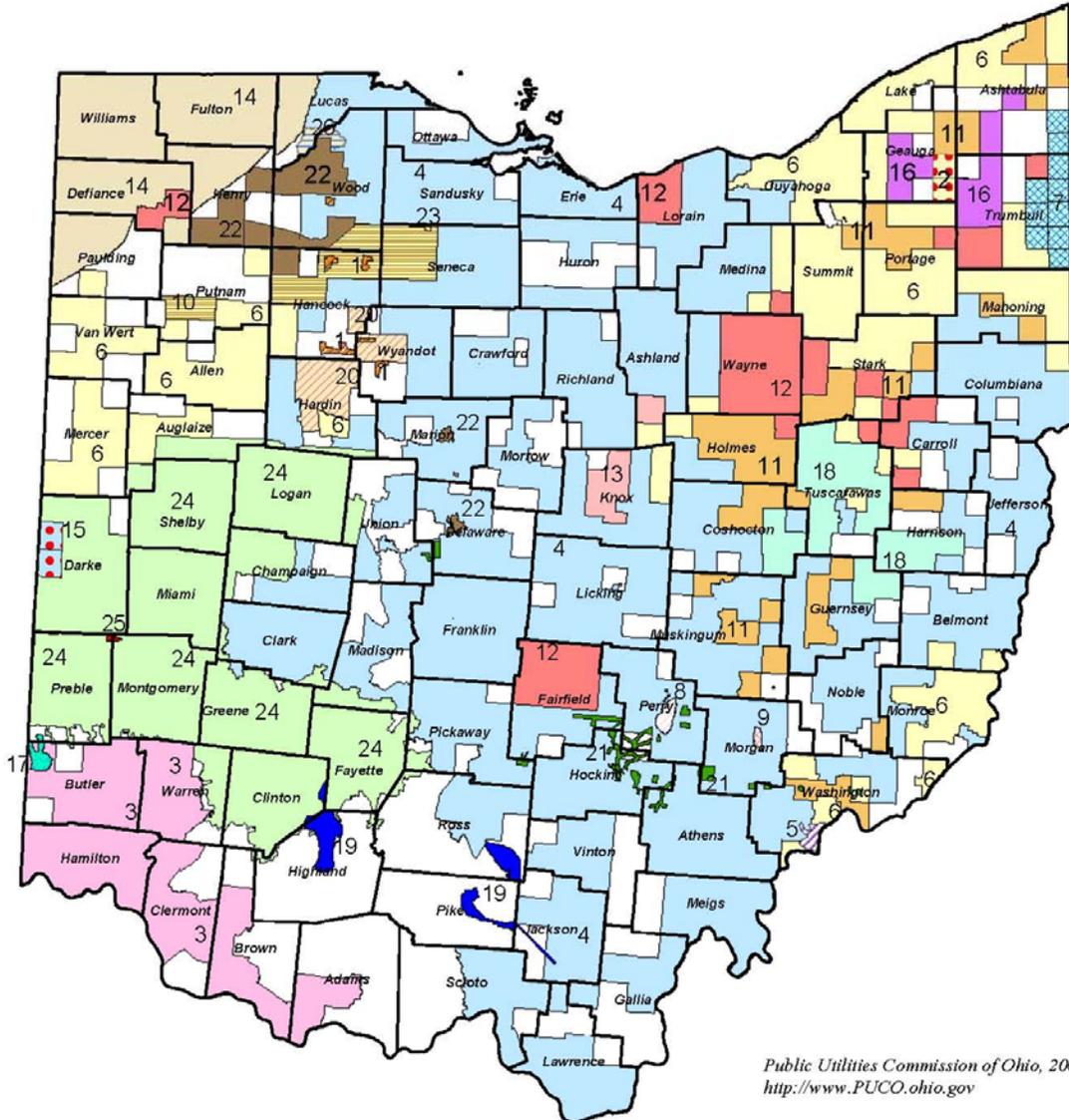
1 Kick Off Attendees, 2 Problem Statements Attendees, 3 Mitigation Alternatives Attendees

**Ashtabula County
All Hazard Mitigation Plan
Core Group**

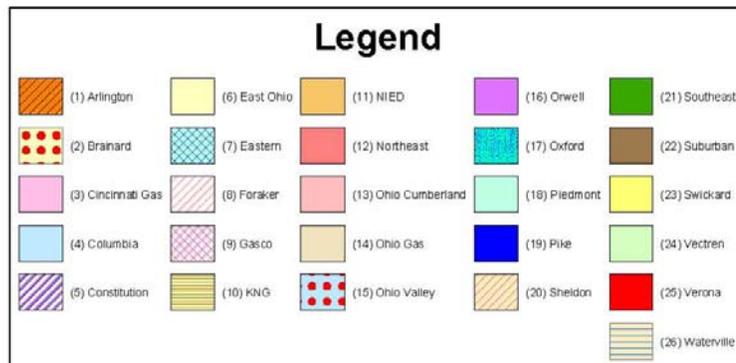
Bim Orrenman 2,3	City of Conneaut	294 Main Street Conneaut, Ohio 44030	440-593-7460		chiotbim@hotmail.com
David Wassie	Jefferson Police Department	86 East Jefferson Street Jefferson, Ohio 44047	440-576-0010	440-576-0714	viljefpolice@suite224.net – put attention Dave Wassie
Name	Affiliation	Address	Phone	Fax	E-Mail
Phil Varckette	City of Ashtabula	4717 Main Avenue Ashtabula, Ohio 44047	440-992-7103		
John Casalinz	Rock Creek Village Administrator		440-344-1381	440-563-9484	casalinavf@yahoo.com
Heather Bowden	EMH&T	5500 New Albany Rd. Columbus, OH 43054	614-775-4531	614-775-4806	hbowden@emht.com

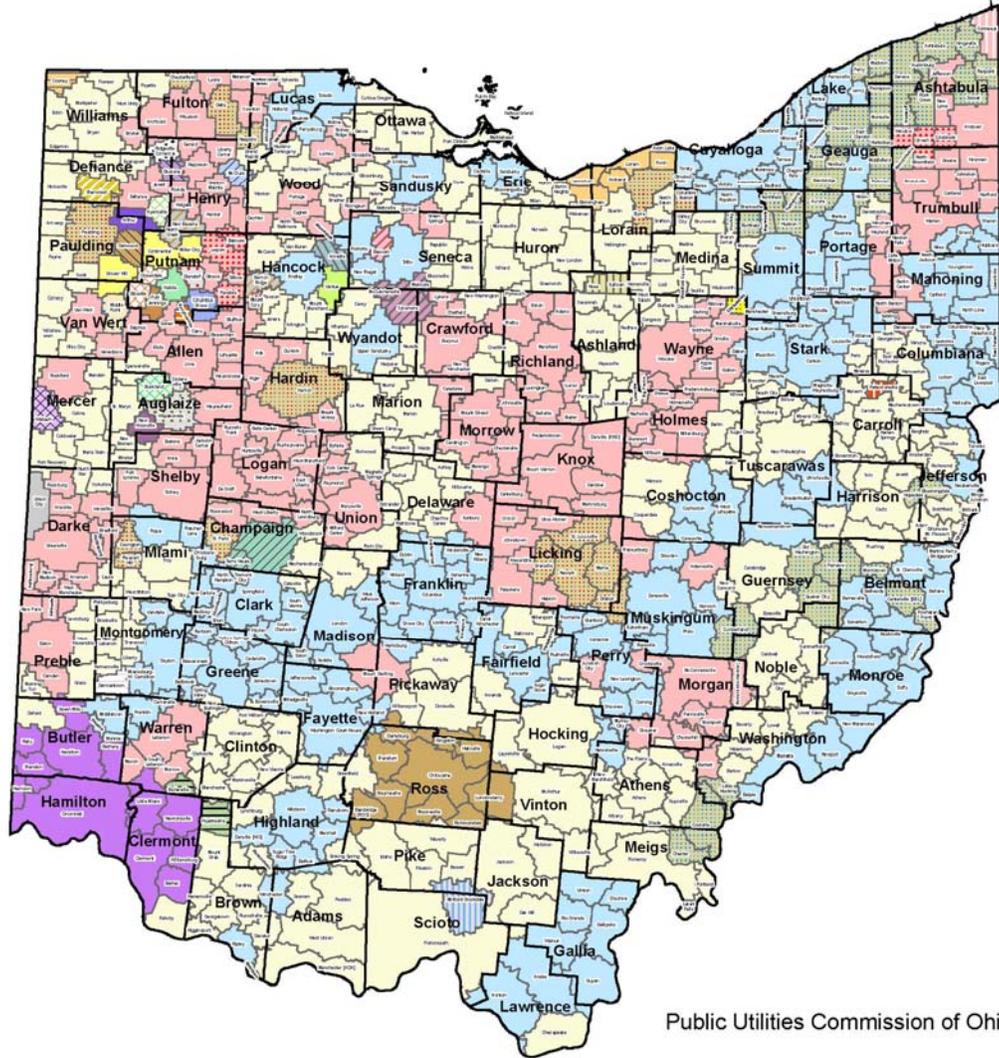
Appendix B:
Utility Service Maps





Public Utilities Commission of Ohio, 2002
<http://www.PUCO.ohio.gov>





Public Utilities Commission of Ohio

Large Incumbent LECs		Small Incumbent LECs			
SBC Ohio	Arcadia (TDS)	Champaign	Germantown	New Knoxville	Sherwood Mutual
Altel Ohio	Arthur Mutual	Continental (TDS)	Glandorf	Nova	Sycamore
Cincinnati Bell	Ayersville	Columbus Grove	Kalida	Oakwood (TDS)	Telephone Service
Chillicothe	Bascom Mutual	Conneaut	Little Miami (TDS)	Orwell	United of Indiana
Century	Benton Ridge	Doylestown	McClure	Ottoville Mutual	Vanlue (TDS)
Verizon North	Buckland	Farmers Mutual	Minford	Pattersonville	Vaughnsville
United of Ohio (dba Sprint)	Frontier	Fort Jennings	Middle Point Home	Ridgeville	Wabash Mutual
Western Reserve					

**Appendix C:
Meeting Minutes**



Ashtabula County All Natural Hazard Mitigation Kick Off Meeting Minutes

Date: June 8, 2005

Attendance: Please see attached sign-in sheet for details on attendees

Ed Somppi
Chief Steve Febel
Joe Moroski
Janice Switzer
Dave Plants
Gary Bolender
Dannette (Dani) Ingersoll

Meeting began with introductions by Mr. Bolender, EMA Director for Ashtabula County. Mr. Bolender introduced Kari Mackenbach, of EMH&T, who will serve as our consultant during the planning process and document development. Ms. Kari Mackenbach is the Program Manager for Mitigation and Planning Services and will be acting as a Project Manager in this effort and is located in their Columbus office.

An overview of the planning process was presented by Kari Mackenbach of EMH&T Inc.

Ms. Mackenbach provided a list of hazards that have affected Ashtabula County since 1950 as part of EMH&T's initial hazard assessment. A project timeline was also presented. Ms. Mackenbach emphasized the need for input from those in the community in this plan development.

Ms. Mackenbach led a discussion on critical facilities. EMH&T needs names and addresses of all critical facilities within each community. Critical facilities are fire departments, police departments, emergency services (EMA and hospitals), nursing homes, schools, day care facilities, large populous areas, municipal buildings as well as any other structure that a community may feel needs to be included to protect human health. These facilities will be illustrated on a GIS map to be included in the Mitigation Plan.

Ms. Mackenbach presented examples of Mission Statements to the Core Group. The Group will approve a Mission Statement at their next meeting. Ms. Mackenbach led a discussion on selecting and prioritizing the County's hazards. The hazards that will be evaluated as part of this process will be finalized at our next meeting.

A question and answer period followed the presentation.

Ms. Mackenbach requested contact information and documents from the Core Group that would aid EMH&T in their research (subdivision regulations, floodplain regulations, building codes, zoning codes, comprehensive plan). A "shopping list" was distributed.

Next meeting: July 6th Wednesday at the Ashtabula EMA office 25 West Jefferson St.
Jefferson, Ohio 44047

This meeting will be on development of Problem Statements as it relates to the hazards that we select to evaluate and prioritize. Look for an e-mail soon!



Ashtabula County All Natural Hazard Mitigation Problem Statements Meeting Minutes

Meeting Minutes
July 6th, 2005

Opening:

The second meeting of the Ashtabula County Emergency Management Agency's All-Hazards Mitigation Core Group was convened at 10:30am on July 6th, 2005 at the Ashtabula County EMA located at 25 West Jefferson Street, Jefferson, Ohio.

Shopping List

Information and documents from the Core Group that would aid EMH&T in their research (subdivision regulations, floodplain regulations, building codes, zoning codes, and comprehensive plan) was turned by several communities and the County. There is more information to collect.

Final Mission Statement Adopted

The mission of the Core Group is to develop a working document that fulfills the mandates of the Federal Disaster Mitigation Act of 2000, and satisfies the requirements of FEMA and the Ohio Emergency Management Agency (OEMA), as well as meets the needs of all of Ashtabula County.

Further, by researching and planning for future natural hazards and implementing appropriate mitigation techniques, all of Ashtabula County can save lives and protect property, reduce the cost of disasters and provide for a rapid and efficient recovery by coordinating response efforts, and increasing the educational awareness of natural hazard events and their effects on the people, property, and resources of all of Ashtabula County.

Prioritized Hazards

By prioritizing the hazards for Ashtabula County the Core Group helps to not only organize their thoughts but the plan as well. This was a consensus driven process and all agreed with the prioritized list. The Core Group discussed and agreed upon the following list of hazards:

1. Winter Storms
2. Summer Storms
3. Flash Floods
4. Lake Erosion
5. Tornadoes
6. 100 yr. flood
7. Droughts - Wild land fires
8. Earthquakes
9. Water spouts

Other non-natural hazards that will be evaluated include:

- Dams
- Chemical Plants
- Lake water quality, streams, etc.
- Railroad crossings (blocked)
- Port facilities
- Solar flares
- Power outages

EMH&T staff will need the help of those that recommended that we look at these other hazards to appropriately cover them in the Hazard Mitigation Plan.

Overall Goals

The Core group will formulate goals for each Prioritized Hazard (see attachment: Overall Goals). The group has been asked to review the goals and make any comments or changes needed prior to the next meeting. These will be discussed at the beginning of the third session. Please highlight any changes made and e-mail them to Kari Mackenbach at kmackenbach@emht.com.

Critical Facilities

EMH&T is working directly with the Ashtabula County EMA office to collect all the critical facility information for the County and its incorporated areas. This list was sent to each Core Group member to review before our next meeting.

Problem Statements

Discussion of 'Problem Statements' for each category was agreed upon by Core Group (see attachment). The group has been asked to review the statements and make any comments or changes needed prior to the next meeting. These will be discussed at the beginning of the third session. Please highlight any changes made and e-mail them to Kari Mackenbach at kmackenbach@emht.com.

Adjournment:

Meeting was adjourned. The next planning meeting will be at **10:00am on August 3rd** at the Ashtabula EMA office (basement) 25 West Jefferson St. Jefferson, Ohio 44047

Minutes submitted by: Kari Mackenbach, EMH&T



Ashtabula County All Natural Hazard Mitigation Mitigation Alternatives Development Meeting Minutes

Date: August 3, 2005

Opening:

The third meeting of the Ashtabula County Emergency Management Agency's All-Hazards Mitigation Core Group was convened at 10:00am on August 3, 2005 at the Ashtabula County EMA located at 25 West Jefferson Street, Jefferson, Ohio.

Attendance:

Chief Steve Febel
David Wassie
Joe Moroski
Janice Switzer
Larry Meaney
Dave Plants
Dannette Ingersoll
Marilyn Malz
Jennifer Brown

Cathy Williams
Leeann Moses
Michael Zullo
Lynn Frank
Jennifer Takacs
Kathy Takacs
Bim Orrenman
Phil Varckette

(Please see attendance roster for detailed information)

Ms. Mackenbach gave a brief overview of the mitigation planning process for those not in attendance at our previous meetings.

The Core Group reviewed the meeting minutes from July 6th, 2005, there were no comments on the minutes.

Ms. Mackenbach sent everyone on the roster a copy of the draft problem statements via mail. The draft problem statements were approved at the meeting.

Overall goals were also included in the mailing. The Core Group members reviewed these goals and approved them.

Ms. Mackenbach led a brief discussion on current list critical facilities. The list will be geocoded and mapped accordingly and if there are any corrections or additions to the map then EMH&T may be able to update the map.

Ms. Mackenbach reviewed the six categories of Hazard Management Practices as approved by FEMA. This was also a hand-out sent in the mail.

- Preventive Measures

- Property Protection Measures
- Natural Resource Protection
- Emergency Services
- Structural Projects
- Public Information

Ms. Mackenbach led a discussion concerning possible alternative activities to mitigate the problems which exist in Ashtabula County. Alternatives were developed by the Core Group per hazard. Please see Alternatives Matrix for the list of alternatives developed by the Core Group. (included in package)

Ms. Mackenbach briefly explained the alternatives ranking matrix that will be sent to the Core Group. The Core Group then decided which evaluation criteria were to be used when ranking each alternative. Those criteria are as follows:

- Cost Effective
- Technically Feasible
- Environmentally Sound
- Socially Equitable

EMH&T will mail matrices to each member of the Core Group to be completed and returned. A self addressed stamped envelope will be included.

Next Meeting: September 14th, 2005 at 10:00 am at the Ashtabula County EMA located at 25 West Jefferson Street, Jefferson, Ohio.

Minutes submitted by: Kari Mackenbach, EMH&T



Ashtabula County All Natural Hazard Mitigation Wrap-Up Meeting Minutes

Date: September 20, 2005

Attendance:
Ed Somppi
Janice Switzer
Jennifer Brown
Cathy Williams
Leann Moses

Lynn Frank
Michael Sullivan
Jennifer Takacs
Kathy Takacs
John Casalinz

(Please see attendance roster for detailed information)

The Core Group reviewed the meeting minutes from August 3rd, 2005, there were no comments on the minutes.

Participation in Process

All incorporated communities at this point are participating in the Hazard Mitigation Planning Process. This list includes:

*Andover
Ashtabula
Conneaut
Geneva
Geneva-on-the-Lake
Jefferson
North Kingsville
Orwell
Roaming Shores
Rock Creek*

There are also three townships that have participated in the process as well. Those townships are Richmond, Saybrook and Austinburg townships.

Mapping

Ms. Bowden asked the Core Group to look at the completed Ashtabula County multi-hazard map to see if there is any missing or incorrect information. It was explained that the other critical facilities specific to a jurisdiction will appear on that individual jurisdiction's map.

Matrices

Ms. Bowden asked the Core Group to look at the compiled matrices to see if we are missing any of the mitigation alternatives. There were none missing.

Matrix Results

The Core Group felt that the matrix results represented their desired results with one change. The alternative stating "Provide an alternate potable water source in the event that existing water supplies are disrupted or contaminated" should be included in the list of prioritized hazards in each hazard type.

Participating Communities Mitigation Alternatives

Overall Mitigation Alternatives for the incorporated jurisdictions in Ashtabula County.

Andover – Not present at the meeting.

Ashtabula – Not present at the meeting.

Conneaut – Not present at the meeting.

Geneva – The jurisdiction felt comfortable with the Core Group results and the highest prioritized mitigation alternatives are what they would like to have as their selected mitigation alternatives. In addition, they wanted to add the following two alternatives:

- Provide designated locations/facilities to house displaced animals after severe storm events.
- Upgrade the radio communications system throughout the County for all public safety services.

Geneva felt the hazard category of Water Spouts did not pertain to their jurisdiction.

Geneva-on-the-Lake – The jurisdiction felt comfortable with the Core Group results and the highest prioritized mitigation alternatives are what they would like to have as their selected mitigation alternatives. In addition, they wanted to add the following two alternatives:

- Provide designated locations/facilities to house displaced animals after severe storm events.
- Upgrade the radio communications system throughout the County for all public safety services.

Jefferson – Not present at the meeting.

North Kingsville – The jurisdiction felt comfortable with the Core Group results and the highest prioritized mitigation alternatives are what they would like to have as their selected mitigation alternatives. In addition, they wanted to add the following two alternatives:

- Provide designated locations/facilities to house displaced animals after severe storm events.
- Upgrade the radio communications system throughout the County for all public safety services.

Orwell – The jurisdiction felt comfortable with the Core Group results and the highest prioritized mitigation alternatives are what they would like to have as their selected mitigation alternatives. In addition, Orwell felt Lake and Stream Bank Erosion did not pertain to their jurisdiction.

Roaming Shores – The jurisdiction felt comfortable with the Core Group results and the highest prioritized mitigation alternatives are what they would like to have as their selected mitigation alternatives.

- Designate existing structures that could be potentially used as shelters during a hazard event.
- Provide back-up generators for critical facilities, including shelters, which need to maintain continuous power to protect human health and life.

Rock Creek – The jurisdiction felt comfortable with the Core Group results and the highest prioritized mitigation alternatives are what they would like to have as their selected mitigation alternatives. In addition, they wanted to their attention and efforts on flooding alternatives first.

Austinburg Township - The Township felt comfortable with the Core Group results and the highest prioritized mitigation alternatives are what they would like to have as their selected mitigation alternatives. In addition, they wanted to add the following alternative:

- Upgrade the radio communications system throughout the County for all public safety services.

A letter will be sent to the jurisdictions of Andover, Ashtabula, Conneaut and Jefferson as well as the townships of Richmond and Saybrook for them to determine their prioritized alternatives.

Action Plan

The Action Plan was presented today to the Core Group, showing the results of the matrices. Ashtabula County EMA staff will be working on this and submitting for inclusion into the Draft Mitigation Plan as soon as possible.

Next Steps

Once the Mitigation Plan is finished 4 professional copies will be submitted to the Ashtabula County EMA for their distribution at several key locations so the public can review the document. EMH&T will be sending the Ashtabula County EMA a draft press release for their use to publicize the draft Mitigation Plans being ready for review. We will also be sending each Core Group member (black and white) draft copies or them to review as well. At the same time, OEMA and FEMA will be getting the draft Ashtabula County Mitigation Plan for their review process.

Minutes submitted by: Heather Bowden, EMH&T

Appendix D:
Problem Statements
And Overall Goals

PROBLEM STATEMENTS FOR ASHTABULA COUNTY ALL NATURAL HAZARD MITIGATION PLAN

The Core Group discussed the following hazards and prioritized them below:

1. Winter Storms
2. Summer Storms
3. Flash Floods
4. Lake and Stream Bank Erosion
5. Tornadoes
6. 100-Year / Non-Floodzone Floods
7. Droughts (Excessive Heat and Extreme Cold)
8. Earthquakes
9. Water Spouts

SEVERE STORMS – (Winter)

The Core Group has prioritized this hazard as their number one concern. Severe storms occur throughout the year in Ashtabula County, and historically have had a significant impact on the community as a whole and for the individual municipalities.

Core Group Developed Problem Statements

- When a storm hits it is imperative that manpower and equipment be ready for snow removal. Ashtabula County suffers from the inability to keep up with snow removal.
- Some older residential structures contain failing infrastructure and are unable to withstand the weight of a heavy snowstorm.
- Critical facilities, especially shelters, do not have back-up generators.
- Public Service Announcements (PSA's) for sensitive populations regarding evacuation procedures needs to be enacted.
- There are several homes with residents that chose not to leave in the event of an oncoming natural hazard such as severe winter and first responders are continuously going back to the same houses and put in harms way.
- There are no fire hydrants located on the GIS (Geographic Information Systems) maps in some communities.
- There are no PSAs (Public Service Announcement's) and educational programs on how to prepare for winter storms.
- There is an improper use of alternative heat sources such as older generation kerosene heaters that can cause fires if improperly used.

- There is a concern when dealing with the Amish population of Ashtabula County and how to communicate with them during severe winter events.
- Lack of communication channels inaccessibility. Radio, satellite

SEVERE STORMS – (Summer)

The Core Group has prioritized this hazard as their number two concern. Severe storms occur throughout the year in Ashtabula County, and historically have had a significant impact on the community as a whole and for the individual municipalities.

- The inability to keep up with road impediments and debris removal due to lack of manpower and equipment.
- There are instances of prolonged power outages which could leave residents without heat, electricity, or drinkable water.
- Periods of excessive heat create problems, possibly life threatening, for seniors and infants. Food spoilage and lack of fresh water are also a result of periods of excessive heat.
- There is a lack of public awareness and education concerning tree removal issues and what the county and utility company's roles are regarding this procedure.
- Public Service Announcements (PSA's) for sensitive populations regarding evacuation procedures needs to be enacted.
- No radio programs strictly devoted to weather are established in Ashtabula County.
- Critical facilities, especially shelters, do not have back-up generators.
- There are no PSAs (Public Service Announcement) on how to prepare for storms.
- A shelter network needs to be implemented. There are no shelters in the County's State Parks, campground sites or mobile home parks.
- There is a need to delineate campgrounds to establish the need for shelter network.

FLOODING (including 100-year flood zone and flash flooding)

The Core Group has decided to prioritize the natural hazard of flooding as their third and sixth rated concern. Flooding occurs periodically throughout the year in Ashtabula County and has had severe affects on several communities within the county.

Core Group Developed Problem Statements

- Event based flooding is a countywide problem which needs to be addressed.

- In private communities there are no ditch networks to help prevent flooding from occurring.
- Residents need to be made aware of how the NFIP (National Flood Insurance Program) can help benefit them and their homes.
- Insurance agents need to be properly informed of the possible flood insurance policies available to the citizens of Ashtabula County.
- The States Declaration of Disasters Policy needs to be re-evaluated to determine where the border should stop. For example, if a disaster straddles two counties then each County has to meet the criteria for a disaster versus the actual area affected.
- There is a lack of riparian buffers along the rivers and streams in Ashtabula County.
- The National Flood Insurance Rate maps are old and need to be updated.
- New construction taking place in the 100-year floodplain exacerbating flooding downstream of some rivers in Ashtabula County.
- Tenants who are renting in Ashtabula County are unaware of the content insurance public service announcement (PSA).
- Several communities have problems with CSO's and overflows.
- Sewer lines (sanitary systems and storms) undersized. 100 years old.
- Intersection flooding countywide big problem
- Dirt roads a problem in the County during and after a flash flood.

LAKE ERIE SHORE and STREAMBANK EROSION

The Core Group has prioritized the natural hazard of erosion as their fourth concern. Erosion can occur sporadically throughout the County, which has limited capacity to handle the damages caused by this hazard. Lake Erie Shore and Streambank erosion happens in Ashtabula County, and the potential for infrastructure and property damage can be high.

Core Group Developed Problem Statements

- Structures and utilities are dramatically affected by Lake Erie and streambank erosion, especially during high lake water years.
- Infrastructure (roadways and bridges) affected by Lake Erie and streambank erosion.
- Stream erosion exacerbated by upstream development and dam (roaming shores)
- There is a lack of riparian buffers throughout the County.

TORNADOES

The Core Group has prioritized the natural hazard of tornadoes as their fifth concern. Tornadoes occur sporadically throughout the County, which has limited capacity to handle the damages caused by this hazard.

Core Group Developed Problem Statements

- A shelter network needs to be established in Ashtabula County to deal with tornadoes.
- Education for the first responders on how to decipher the difference between straight line winds and an actual tornado need to be implemented.
- There is a lack of battery powered radios for use under extreme weather conditions.
- No emergency plans exist in retail establishments.
- Public and private schools in Ashtabula County need a better place to house children if a severe weather event should happen during school.
- There are no tornado shelters or permanent structures near mobile home communities.
- Business continuity plans need to be established.

DROUGHTS (SEVERE)

The Core Group has decided to prioritize the natural hazard of droughts and extreme temperatures as their seventh concern. Droughts can happen in Ashtabula County, and the potential for crop damage and property damage from associated fires can be high.

Core Group Developed Problem Statements

- There is a lack of knowledge concerning safety issues during times of drought.
- There is a lack of control of wild land fires during susceptible periods.
- Severe agricultural ramifications both with crops and livestock occur in Ashtabula County during a severe drought. The needs of livestock should be assessed.
- Ashtabula County is lacking dry hydrants in many quadrants of the County.
- The community does not have a list of businesses dependant on water.

EARTHQUAKES

The Core Group has decided to prioritize the natural hazard of earthquakes as their eighth concern. Although earthquake activity is high in Ashtabula County it is not of a great concern to the community however, the potential for damages from earthquakes could be significant.

Core Group Developed Problem Statements

- There are no public awareness campaigns occurring in the County describing how to react safely in the workplace and at home with instances of earthquakes.
- People also need to be made aware of earthquake insurance.
- Water wells can be affected when earthquakes take place.

WATER SPOUTS

The Core Group has decided to prioritize the natural hazard of water spouts as their ninth concern. Water Spouts are essentially water tornadoes and although the County has had their share of recorded water spouts the damage that occurs from this hazard is minute.

Core Group Developed Problem Statements

- There are no public awareness campaigns occurring in the County describing how to react safely in the workplace and at home with the occurrences of water spouts
- Most residents are unaware of the potential damage that a water spout can do.

OVERALL GOALS FOR ASHTABULA COUNTY NATURAL HAZARD MITIGATION PLAN

The Core Group discussed the following hazards and prioritized them as follows:

1. Winter Storms
2. Summer Storms
3. Flash Floods
4. Lake Erosion
5. Tornadoes
6. 100 yr. flood
7. Droughts - Wild land fires
8. Earthquakes
9. Water spouts

SEVERE STORMS (Winter and Summer)

Overall Goals:

To educate the County's citizens to increase awareness of severe storms and where to seek safety during storm events, to provide adequate shelters where citizens can seek safety from severe weather, to improve the warning system and radio communications throughout the County, to expedite the clean up process through coordination and equipment acquisition, to maintain operations of critical facilities and emergency services and to reduce property damage caused by severe weather.

FLOODING (Flash and 100-year events)

Overall Goals:

To educate the County's citizens to increase awareness of flooding and where to seek safety during flood events, to provide adequate shelters where citizens can seek safety from severe weather and flooding, to improve the warning system and radio communications throughout the County, to expedite the clean up process through coordination and equipment acquisition, to maintain operations of critical facilities and emergency services and to reduce property damage caused by severe weather and flooding.

LAKE EROSION

Overall Goals:

To educate land owners along the shore line of the dangers of erosion and how it can be exacerbated by activities that they may be conducting. To educate communities of the need for riparian buffers to protect the vegetation along our shore lines and streams to prevent increasing erosion.

TORNADOES

Overall Goals:

To educate the County's citizens to increase awareness of severe storms and tornadoes and where to seek safety during storm events, to provide adequate shelters where citizens can seek safety from severe weather, to improve the warning system and radio communications throughout the County, to expedite the clean up process through coordination and equipment acquisition, to maintain operations of critical facilities and emergency services and to reduce property damage caused by severe weather.

DROUGHTS

Overall Goals:

To establish administrative controls to limit potential property damage, to educate the general public of the hazards associated with drought and extreme temperatures, to establish contingency plans for alternate water supply and to reduce potential damage through preplanning. To educate residents of the secondary hazards of droughts such as wild land fires.

EARTHQUAKES

Overall Goal:

To increase awareness of the hazards of an earthquake event, to maintain operations of critical facilities and emergency services, to improve the warning system and radio communications throughout the County and to expedite the clean up process through coordination and equipment acquisition.

WATER SPOUTS

Overall Goal:

To increase awareness of this hazard and how water spouts can be destructive to the shore line. To educate residents on water spouts destructive forces and that they should not be taken for granted.

**Appendix E:
Significant Events**

Significant Events for Ashtabula County

Winter Storms

February 1994

On February 8, an ice storm occurred in several Ohio counties, including Ashtabula County. A mixture of freezing rain and sleet occurred leaving an accumulation of ice 1/4 to 3/4 inches thick. One to two inches of snow also accumulated across the lakeshore counties. The cold temperatures (freezing rain occurred with temperatures as low as low as 12 degrees F) hindered snow and ice removal. \$500,000 in property damage and \$500,000 in crop damage. No deaths and six injuries.

March 1994

From March 9 to March 10, heavy snow fell across several Ohio counties, including Ashtabula County. Snow accumulated an average of four to six inches with eight inches reported on some of the higher hills. Snow occasionally mixed with sleet and freezing rain. Some trees and power lines were downed due to the weight of the ice and snow. \$500,000 in property damage. No deaths or injuries.

January 1996

On January 2 to January 3, a heavy snow occurred in several Ohio counties, including Ashtabula County. Snow became heavy at times and heavy snow fell during the overnight hours into the morning of January 3. Snow accumulated an average of eight to 14 inches and northeast winds of 20 mph with gusts to 30 mph produced significant blowing and drifting snow with localized blizzard conditions. A number of counties declared snow emergencies to restrict travel and a number of roads were closed by snow and blocked by abandoned vehicles. Emergency shelters were opened in several towns to provide food and shelter for stranded travelers. Roof collapses began as the snow piled up and continued for days after the storm. An elementary school in Cleveland (Cuyahoga) collapsed but school was not in session. The building may have been damaged beyond repair. No direct injuries or fatalities were reported but a number of injuries and several fatalities were reported from automobile accidents and at least three people died in the Cleveland area from heart attacks while shoveling snow. \$3.4 million in property damage. No deaths or injuries.

November 1996

From November 9 to November 15, a heavy snowstorm occurred in Ashtabula, Cuyahoga, Geauga, Lake, Lorain, Portage, Summit and Trumbull counties. Heavy lake effect snow occurred over a seven day period. Total storm accumulations ranged from 6 inches in Elyria (Lorain County) to 69 inches in Chardon (Gauga County). Other significant storm totals were 50 inches in Shaker Heights (Cuyahoga County), 48 inches in Jefferson (Ashtabula County), 28 inches at Kirtland (Lake County), and 15 inches in Mesopotamia (Trumbull County). The storm wreaked havoc on power and telephone lines. Cleveland Electric Illuminating estimated 185,000 customers were without power, some for several days. Dozens of emergency shelters were opened for people who were without electricity. In Wickliffe and Willoughby (Lake County), motels and hotels that still had power, were sold out. Schools throughout northeast Ohio were closed. Cleveland

Hopkins Airport (Cuyahoga County) was closed on two occasions, each due to a commercial airplane skidding off the runway. Cables were downed on mass transit trains and fallen trees blocked the tracks as well as a number of roads. Thousands of trees fell or were damaged during the course of the storm. The ground was already saturated at the beginning of the storm causing shallow rooted trees to topple. Some trees still had their leaves and the extra weight of the snow on them caused many limbs to fall; an estimated 80% of city trees in Shaker Heights (Cuyahoga County) suffered damage. Most cities used 15% of their snow removal budgets and the National Guard was called to help clear snow from roads and the roofs of buildings. Hundreds of homes, garages, carports, barns and commercial buildings had roofs that collapsed or were severely damaged. A plastics manufacturing plant in Mentor (Lake County) had a major roof collapse, but no one was on the third shift. The roof of the Faith Baptist Church (Perry Township, Lake County) collapsed, but no one was in the building. Also, in Lake County, the roofs of three large storage buildings fell in at an 84 Lumber company in Concord Township. Everyone was evacuated. In Ashtabula County, the roof of the Methodist Church in Geneva caved in, and in the city of Ashtabula the roofs of a nursery and a warehouse collapsed. The roof of a 100 year old barn in Hambden Township (Geauga County) caved in, but all the animals were rescued. The roof of the Cleveland Children's Museum (Cuyahoga County) collapsed only a short time after it closed. A house in Garfield Heights (Cuyahoga County) caught on fire from a downed electric line. The roof collapsed at Card Pak, Inc. in Warrensville Heights (Cuyahoga County) igniting a fire in which three firefighters suffered minor injuries. The roof of L. Gray Barrell and Drum Company in Cleveland, (Cuyahoga County) collapsed, critically injuring two workers. Eight Cablevision workers were slightly injured when lightning struck their customer service office in Cleveland (Cuyahoga County) and shocked them through their headphones. In Conneaut (Ashland County), four women were rescued from their car, after it became stuck in the snow on the railroad tracks on the Mill Street Conrail crossing. The car was demolished by a train, but no one was injured. \$21 million in property damage, no deaths and 13 injuries.

January 1999

On January 2, a winter storm occurred in several Ohio counties, including Ashtabula County. Snow changed to freezing rain and sleet, with a brief change to rain as temperatures rose slightly above freezing, and then back to snow. Temperatures dropped quickly into the teens causing the wet snow and ice to refreeze and creating significant ice on the ground, roads and sidewalks. Snow accumulations generally averaged six to eight inches with as much as 10 inches in northwest Ohio. Travel was restricted when some counties declared level two or three emergencies, including Wood, Lucas, Seneca and Hancock. Air temperatures eventually fell to near zero and the icy conditions and cold temperatures, with wind chills of around 30 degrees below zero, continued throughout the first week of January, closing schools and causing many minor car crashes and fender benders. Dozens of people were injured from falls on the ice. Many sidewalks and secondary streets remained uncleared for days due to the combination of very cold temperatures and thick ice. Salt was in such demand that most stores ran out and had difficulty restocking. \$600,000 in property damage. No deaths and 56 injuries.

From January 14 to January 15, a heavy snow occurred in Ashtabula, Geauga, Lake, Mahoning, Portage, Stark, Summit and Trumbull counties. Heavy snow accumulated six to 10 inches and blowing and drifting snow contributed to several traffic accidents. To

restrict traffic, a level three emergency was declared in Trumbull County. The weight of snow and ice that had built up in the area since late December caused structures to collapse and damage to trees. Pipes burst because of the cold temperatures. The snow and ice cover ranged from 16 inches in Summit County to as much as 30 inches in Ashtabula County, where several buildings collapsed as a result. In Andover, on January 14, one barn roof collapsed and then another on the January 15, damaging or destroying hay and farm machinery. On January 15, one pole barn in Colebrook and one in Jefferson collapsed. Tractors, a pickup truck, tools, an all terrain vehicle and a bulldozer stored in them were damaged or destroyed. On January 17, a building collapsed at the county fairgrounds in Summit County. Twenty six vehicles stored there were damaged or destroyed. \$1.0 million in property damage. No deaths or injuries.

March 1999

From March 5 to March 6, a heavy snow occurred in Ashtabula, Cuyahoga, Erie, Geauga, Lake, Lorain, Lucas, Medina, Ottawa, Portage, Sandusky, Summit and Trumbull counties. Snow mixed with rain at times, especially across north central and northwest Ohio, accumulating five to six inches. Over northeast Ohio, the precipitation was almost all snow, with a total accumulation of six to 13 inches. North northeast winds caused considerable blowing and drifting of snow. Driving conditions were extremely hazardous and numerous traffic accidents were reported, especially in Lake, Geauga and Ashtabula counties. \$300,000 in property damage. No deaths or injuries.

December 1999

From December 23 to December 24, a heavy snow occurred in Ashtabula, Cuyahoga, Geauga and Lake counties. Cold northwest winds blowing across Lake Erie resulted in the development of lake effect snow bands just before sunrise on December 23. Heavy snow first fell near the lakeshore in Lake and Ashtabula counties. Snowfall rates of two to three inches per hour were observed with total accumulations in these areas of 15 to 25 inches in a little more than 12 hours. Many roads had to be temporarily closed with snarled traffic on roads kept open. Scattered power outages were also reported. The heaviest snow bands shifted to inland sections of Ashtabula County late on December 23 and finally into Geauga and Cuyahoga counties early on December 24. Accumulations of 6 to 10 inches were measured over the eastern half of Cuyahoga County with up to a foot of snow in Geauga County. Snow totals across inland sections of Lake and Ashtabula counties were generally 20 to 24 inches with isolated reports of up to three feet. \$575,000 in property damage. No deaths or injuries.

January 2000

From January 19 to January 20, heavy snow occurred in Ashtabula, Cuyahoga, Geauga, Lake, Medina, Portage and Summit counties. Snow spread across northern Ohio on the evening of January 19 as an area of low pressure moved up the Ohio Valley. Arctic air moving across Lakes Huron and Erie enhanced the snowfall, especially in Cuyahoga and Medina counties on the morning of January 20. Snowfall rates in these counties exceeded two inches per hour and caused major traffic delays. Winds gradually shifted to the northwest during the afternoon hours. As this happened, the heaviest snow shifted east into inland sections of Geauga and Ashtabula counties. Widespread six to eight inch accumulations were reported in northeast Ohio with up to 16 inches of snow

reported in southern Cuyahoga county. Up to 10 inches of snow fell in Medina, Summit and Geauga counties. \$315,000 in property damage.

February 2000

From February 13 to February 14, a winter storm occurred in Ashtabula, Cuyahoga, Geauga and Lake counties. An area of low pressure moved up the Ohio River Valley spreading precipitation over extreme Northern Ohio late on February 13. With temperatures in the middle 30s, the precipitation began as rain but quickly changed to freezing rain and eventually to snow on the morning of February 14. One quarter to 1/2 inch of ice accumulation was reported across portions of Cuyahoga, Lake and inland Ashtabula counties along with an inch or two of snow. Many trees and branches were downed as a result of the ice accumulation. \$170,000 in property damage. No deaths or injuries.

March 2000

From March 11 to March 12, a winter storm occurred in Ashtabula, Cuyahoga, Erie, Geauga, Lake, Lorain, Lucas, Medina, Ottawa, Sandusky, Summit and Wood counties. Low pressure moved up the Ohio Valley spreading snow and some freezing precipitation across the region. The heaviest snow fell near Lake Erie with light freezing rain and snow further south. Little if any any ice accumulation was reported but six to eight inches of snow fell from the afternoon of March 11 through late morning on March 12. The roof a building in downtown Fremont in Sandusky County collapsed from the weight of the heavy snow. The building housed a government office and two volunteer agencies and suffered major damage. \$315,000 in property damage. No deaths or injuries.

November 2000

From November 20 to November 21, heavy snow occurred in Ashtabula, Cuyahoga, Geauga, Lake and Summit counties. Strong west winds blowing across Lake Erie caused lake effect snow bands and squalls to develop. Heavy snow first fell along the lakeshore then spread inland as winds gradually shifted to the northwest. Occasional thunder was reported from early morning through midday on November 21. The gusty west and northwest winds caused considerable blowing and drifting with whiteout conditions at times. There were many road closures and major traffic delays. Accumulations of 6 to 12 inches were reported in eastern Cuyahoga, northern Summit, northern Geauga, Lake and Ashtabula counties. Seventeen inches of snow fell at Ashtabula with 15.3 inches at Pierpoint in Ashtabula County and 14 inches in eastern Cuyahoga County at Pepper Pike. \$1.3 million in property damages. No deaths or injuries.

December 2000

From December 13 to December 14, a winter storm affected several Ohio counties, including Ashtabula County. Low pressure moved up the Ohio Valley and across central Ohio late on December 13. Light precipitation began during the afternoon hours and increased in intensity during the evening. Freezing rain fell south of a line from Marion County northeast to Trumbull County. Significant ice accumulation was reported in this area by early on December 14. Further north, most of the precipitation fell in the form of snow. The heaviest snow fell along and just south of Lake Erie. Accumulations of seven

inches were reported from Lucas County east to Huron County. Around six inches of snow fell from the Cleveland Metro area northeast to Ashtabula County. Locations just south of the heavy snow band saw a mixture of freezing rain and snow. Scattered power outages resulted from the freezing rain accumulation. Numerous accidents were also reported. \$2.5 million in property damage. No deaths or injuries.

From December 24 to December 25, heavy snow occurred in Ashtabula, Geauga, Lake and Trumbull counties. Lake effect snow showers developed during the morning. Snow first fell along the shoreline but shifted inland and intensified during the afternoon as winds switched from the northwest to west. Six to eight inches of accumulation occurred. In addition, the snow was accompanied by gusty northwest winds which caused considerable blowing and drifting snow. \$145,000 in property damage. No deaths or injuries.

From December 27 to December 28, a heavy snowstorm occurred in Ashtabula, Cuyahoga, Geauga, Lake and Trumbull counties. Lake effect snow showers developed during the morning of December 27. Heavy snow first fell along the lakeshore then spread inland as winds shifted from the west to the northwest. Accumulations of up to 10 inches were reported along the Lake Erie shoreline from the eastern end of Cuyahoga County to northern Ashtabula County. Snow totals further inland were generally slightly less, but a storm total of 16 inches was measured near Chardon in Geauga County. \$295,000 in property damage. No deaths or injuries.

December 2001

From December 28 to December 30, a heavy snowstorm occurred in Ashtabula, Cuyahoga, Geauga and Lake counties. A cold front moved east across Northeast Ohio during the afternoon of December 28. West winds behind this front caused lake effect snow showers to intensify during the late afternoon and evening hours. Initially, heavy snow fell along the immediate lakeshore with snowfall totals of up to 13 inches reported in northern Ashtabula County by daybreak on December 29. During the day on December 29, the flow became more northwesterly spreading the heavy snow into Geauga and inland sections of Ashtabula counties. Daytime accumulations of up to 18 inches were reported in Ashtabula County with a maximum of 15 inches in Lake County and around six inches in northern Geauga County. Late on December 29 and early on December 30, winds briefly became more northerly causing the lake effect bands to spread west into eastern Cuyahoga County. Greater than six inches of snow fell by daybreak on December 30 in Cuyahoga County with more than 10 additional inches of snowfall in Lake, Geauga and Ashtabula counties. The snow showers gradually diminished on December 30 with no more than a couple inches of accumulation during the daylight hours. Snowfall totals for the three day storm ranged from just over six inches in southern Ashtabula and eastern Cuyahoga counties to over 30 inches in Lake and northern Ashtabula counties. \$950,000 in property damage. No deaths or injuries.

February 2002

From February 27 to February 28, a heavy snowstorm occurred in Ashtabula, Cuyahoga, Geauga, Lake, Lorain, Portage, Summit and Trumbull counties. West to southwest flow across Lake Erie caused lake effect snow showers to develop during the morning hours. Initially, a single band of heavy snow developed along the south shore of Lake Erie. However, later in the day winds became more northwesterly causing the

snow to spread inland and develop multiple bands. The heaviest snow fell during the late afternoon and evening hours. Accumulations ranged from six to 10 inches with the highest amounts reported in Geauga County. \$250,000 in property damage. No deaths or injuries.

March 2002

On March 22, a heavy snowstorm occurred in Ashtabula, Cuyahoga, Geauga and Lake counties. Lake effect snow showers developed during the early morning hours behind a strong cold front. Westerly winds behind the front gusted to over 30 mph much of the day causing significant blowing and drifting and whiteout conditions. Snowfall measuring was hampered by the strong winds but accumulations were generally four to six inches with drifts up to several feet in depth. \$325,000 in property damage. No deaths or injuries.

From March 24 to March 25, a winter storm occurred in several counties in Ohio, including Ashtabula County. Heavy snow developed to the north of a stationary front stretching across far southern Ohio. Snow accumulations ranged from six to eight inches. Some freezing rain also mixed with the snow south and east of a line from Marion to Mansfield to just north of Youngstown. The snow was very wet and heavy making conditions on untreated roadways very treacherous. \$1.6 million in property damage. No deaths or injuries.

December 2002

From December 24 to December 25, a heavy snowstorm occurred in several Ohio counties, including Ashtabula County. An area of low pressure developed along the Gulf Coast early on December 24 and then moved rapidly northeast. This low moved across eastern Ohio and western Pennsylvania during the morning hours of December 25. Snow developed well north of the low and spread into northern Ohio during the evening of December 25. The snow intensified during the early morning hours and again in the afternoon. The snow finally tapered off from west to east during the evening of the December 25. Heavy snow fell in northern Ohio along and north of U.S. Highway 30. Generally, six to 10 inches of snow fell in this area with a maximum of 11.2 inches of snow recorded at Cleveland Hopkins International Airport. Snow totals at other locations include: 7.1 inches at Toledo Express Airport; 5.8 inches at Mansfield Lahm Airport; 5.2 inches at the Akron-Canton Regional Airport and 5.5 inches at the Youngstown-Warren Regional Airport. Northwest winds increased to 15 to 25 mph during the storm and caused considerable blowing and drifting with whiteout conditions at times. Travel was severely hampered by this storm and dozens of accidents occurred as a result of the treacherous driving conditions caused by the snow. \$3.1 million in property damage. No deaths or injuries.

January 2003

From January 26 to January 27, a heavy snowstorm occurred in Ashtabula, Cuyahoga, Geauga, Lake and Lorain counties. Cold north to northwest winds blowing across Lake Erie caused lake effect snow showers to develop during the early morning hours. These snow showers intensified after daybreak and persisted through the evening hours. Snowfall totals ranged from six to nine inches across Lorain, Cuyahoga, Lake, Geauga

and northern Ashtabula counties. Most of the accumulation occurred during the late morning and early afternoon hours. \$325,000 in property damage. No deaths or injuries.

December 2003

From December 17 to December 20, a heavy snowstorm occurred in Ashtabula, Cuyahoga, Geauga, Lake and Trumbull counties. An upper level disturbance moved across Lake Erie and into northern Ohio on the evening of December 17. This disturbance caused the light lake effect snow already falling to quickly intensify. By late evening a band of moderate to heavy snow stretched from Lake County eastward across southern Ashtabula and northern Trumbull counties and into Pennsylvania. Snowfall rates with this band exceeded two inches per hour. Accumulations of up to 14 inches were reported in Geauga County by daybreak on December 18 with eight to 12 inches of accumulation in southern Ashtabula and northern Trumbull counties. This activity diminished somewhat during the afternoon of December 18, but not before another four to eight inches of snow fell from Cuyahoga County eastward through the snowbelt. Scattered lake effect snow showers then persisted through December 20. Thunder and lightning were observed in Cuyahoga County on December 18. Total snowfall accumulations from December 17 through December 20 ranged from 12 to 15 inches in eastern Cuyahoga County to over two feet in portions of Geauga and Ashtabula counties. A maximum of 26.1 inches was measured in northeastern Geauga County (Hambden Township). Hundreds of accidents and significant travel delays resulted from this prolonged event. \$2.4 million in property damages. No deaths or injuries.

January 2004

From January 6 to January 8, a heavy snowstorm occurred in Ashtabula, Geauga and Lake counties. Very cold westerly winds blowing across Lake Erie caused lake effect snow showers to develop during the early morning hours of January 6. This activity intensified during the late afternoon and evening hours of the 6th and finally tapered off around daybreak on January 8. Snowfall totals for this event ranged from eight to 12 inches over much of Lake County to two to three feet in portions of Geauga and Ashtabula counties. A maximum of 36 inches was reported in Montville Township (Gauga County). Over two feet of snow fell on portions of Interstate 90 in Ashtabula County. Westerly winds gusting to over 30 mph accompanied the snow and caused whiteout conditions and drifts over ten feet tall. Travel was nearly impossible during the peak of the storm and hundreds of accidents were reported. \$1.1 million in property damage. No deaths or injuries.

From January 14 to January 15, a winter storm occurred in Ashtabula, Geauga and Lake counties. An area of low pressure over lower Michigan moved southeast across Ohio and into southwestern Pennsylvania on January 14 and January 15. A band of moderate to heavy snow developed to the north of the low as it moved through the region. This band of snow was enhanced by Lake Erie as it moved over the northeastern corner of Ohio. Total accumulations in this area ranged from six to eight inches with the heaviest snow falling during the afternoon and evening hours of January 14. Travel was hampered by this event and dozens of accidents were reported. \$650,000 in property damage. No deaths or injuries.

March 2004

On March 16, a heavy snowstorm occurred in several Ohio counties, including Ashtabula County. An area of strong low pressure moved northeast up the Ohio Valley spreading heavy, wet snow across the region. The snow spread from southwest to northeast across northern Ohio during the early morning hours of March 16 and continued through the early evening hours. At most locations, the heaviest snow fell during the morning and early afternoon hours when visibilities were reduced to near zero at times. Accumulations ranged from around six inches along and just west of Interstate 71 to more than nine inches over much of Summit, Wayne and Portage counties. Late in the afternoon, winds switched from the east and northeast to north. This wind shift allowed Lake Erie to enhance the snowfall falling along the south shore of the lake. Whiteout conditions occurred in the Cleveland area during the afternoon rush hour. The lake enhancement pushed snowfall totals to over 10 inches in extreme northeastern Ohio. Officially, a total of 7.1 inches of snow was reported at Cleveland Hopkins International Airport with 6.4 inches at the Youngstown-Warren Regional Airport. The heavy nature of the snow and gusty winds combined to cause very treacherous driving conditions. Significant travel delays and hundreds of accidents were reported. \$3.5 million in property damage. No deaths or injuries.

December 2004

From December 13 to December 14, a winter storm occurred in Ashtabula, Cuyahoga, Geauga, Lake and Portage counties. A strong cold front moved east across northeastern Ohio late on December 12. Cold west winds blowing across Lake Erie behind the front caused lake effect snow bands to develop during the early morning hours of December 13. The snow first fell in Ashtabula and Geauga counties. As winds became more northwesterly, intense snow bands developed and shifted west over the Cleveland Metro area just in time for the afternoon rush hour. Snowfall rates in excess of an inch per hour were reported from late afternoon through early evening. Six inches of snow accumulated at Cleveland Hopkins International Airport by 6 p.m. Periods of heavy snow continued through the morning hours of December 14. The activity gradually weakened and shifted east during the afternoon. Northwest winds gusting to as high as 30 mph accompanied the snow and created near zero visibilities at times. Snowfall accumulations for the event were generally between one and two feet from eastern Cuyahoga County eastward across Geauga County and into Ashtabula County. Between eight and 12 inches of snow was reported over western Cuyahoga, northern Portage and Lake counties. Officially 9.9 inches of snow was measured at Cleveland Hopkins. Peak totals for the storm included: 15.7 inches at Pepper Pike (Cuyahoga County); 12.3 inches at Madison (Lake County); 28.5 inches Hambden Township (Gauga County); 29.5 inches at Hartsgrove (Ashtabula County) and 13 inches at Aurora (Portage County). Drifts several feet deep were reported. Travel was severely hampered during this event and hundreds of accidents occurred. \$1.2 million in property damage. No deaths or injuries.

On December 19, a winter storm occurred in Ashtabula, Cuyahoga, Geauga, Lake, Medina, Portage and Summit counties. A strong cold front moved east across northern Ohio early on December 19. Light rain falling in advance of this front quickly changed to snow during the early morning hours as colder air filtered into the region. The snow intensified around daybreak as winds became northerly across Lake Erie. Bands of heavy lake effect snow then persisted through sunset as temperatures fell into the single

digits. This activity eventually tapered off to flurries late in the evening. Snowfall accumulations during this event were generally eight to 12 inches over most of Cuyahoga, Geauga, Lake and Ashtabula counties and across the northern halves of Medina, Portage and Summit counties. Some of the higher totals included: 12.0 inches at Pepper Pike (Cuyahoga County); 12 inches at Thompson (Gauga County) and 13 inches at Hartsgrove (Ashtabula County). Northerly winds gusting to as high as 30 mph combined with the snow to cause near zero visibilities and much blowing and drifting. Treacherous driving conditions and hundreds of accidents were reported. \$1.2 million in property damage. No deaths or injuries.

From December 23 to December 24, a winter storm occurred in Ashtabula, Geauga, Lake, Mahoning, Portage, Summit and Trumbull counties. A potent winter storm affected northern Ohio on December 22 and December 23. Low pressure developed over eastern Texas early on December 22 and then moved quickly northeast. The low eventually tracked across eastern Ohio during the morning hours of December 23 after dumping nearly two feet of snow on portions of Ohio. The snow began in northeastern Ohio late on the morning of December 22 and then intensified during the afternoon. Visibilities during the evening hours were near zero at times. After midnight, warmer air moved into the area and caused the snow to first mix with, and then change completely to freezing rain. Temperatures briefly climbed above freezing around daybreak on December 23 causing the freezing rain to change to rain. Colder air working in behind the low changed the rain back to light snow later in the morning. Periods of snow then persisted through the middle portion of the afternoon. Snowfall accumulations ranged from 12 to 16 inches over Lake, Geauga and northern Ashtabula counties, and four to six inches in southern Mahoning County. In addition, most of the area saw at least a quarter inch of ice accumulation with as much as one half inch of ice over most of Mahoning and southern Trumbull counties. Scattered power outages resulted from the ice accumulation. Travel during this event was very treacherous with hundreds of accidents reported. It took several days for road and power company crews to completely clean up after this event. Damage and clean up costs for this storm were in the millions. \$10.2 million in property damage. No deaths or injuries.

January 2005

From January 5 to January 6, an ice storm occurred in several Ohio counties, including Ashtabula County. For the second time in just over two weeks, a devastating and historic winter storm affected Northern Ohio. Significant ice accumulations occurred over most of the area downing thousands of trees, causing widespread power outages and making travel nearly impossible. Low pressure over Missouri moved rapidly northeast on January 5. This low moved across eastern Ohio early on January 6 and was responsible for producing a prolonged period of freezing rain. A mixture of rain and snow changed to freezing rain from west to east during the early morning hours of the January 5. Periods of freezing rain then continued for the remainder of the 5th and through the early morning hours of January 6. Temperatures eventually warmed enough during the late morning hours of January 6 to change the freezing rain back to rain. The hardest hit locations were west of Interstate 71 along the U.S. Route 30 corridor. Ice accumulations of greater than three quarters of an inch were reported from Hancock County eastward across Wyandot, Crawford, Richland and Ashland counties. Northern sections of Wyandot and Marion counties along with the southern halves of Seneca and Huron County were also hard hit. Up to 80% of electric customers in these nine counties lost service during the storm, some for as much as ten days. In cities like Mansfield, Bucyrus

and Findlay, nearly every property in some neighborhoods sustained tree damage. To the north and south of these areas ice accumulations ranged from 1/4 to 3/4 of an inch. Counties closer to Lake Erie saw snow mix with the freezing rain at times which kept ice accumulations down to around 1/4 inch and resulted in only scattered power outages. A total of three to five inches of snow was also reported in these counties. Ice build up at the Davis-Besse Nuclear Power Plant (Ottawa County) damaged the facility enough to force it to be temporarily shut down. Hundreds of crews were brought in from around the county to help restore the power outages. In addition to damage caused by fallen trees and limbs, a lot of basement flooding occurred as power outages prevented sump pumps from working. Clean up and repair costs for this storm were among the highest ever recorded for a natural disaster in Ohio. Damage in many counties topped \$1.0 million with a couple counties exceeding \$10.0 million in losses. In Richland County alone, clean up cost accrued by local governments totaled nearly \$6 million. Estimates indicate that as many as one million people lost power during this storm. Several power companies reported the largest number of outages in their histories. Hundreds if not thousands of homes and businesses were damaged by fallen trees, limbs and utility poles. \$124.9 million in property damages. No deaths or injuries.

From January 22 to January 23, a winter storm occurred in several Ohio counties, including Ashtabula County. An area of low pressure over the Northern Great Lakes moved southeast into northern Ohio early on January 22. Heavy snow associated with this low spread into northwestern Ohio just after midnight, and as far east as northeast Ohio by daybreak. Visibilities during the morning hours were reduced to near zero at times. The activity diminished during the middle part of the day as the low pulled out to the east. However, cold winds blowing across Lake Erie caused lake effect snow showers to develop during the afternoon from Cleveland east. The lake effect activity then persisted into the early morning hours of January 23. Northerly winds gusting to as high as 35 mph caused much blowing and drifting of snow. Accumulations during this event ranged from seven to 12 inches across the northern quarter of Ohio with highest amounts in the Toledo area. Officially, 12 inches of snow was measured at Toledo Express Airport (Lucas County) with 7.4 inches measured at Cleveland Hopkins Airport (Cuyahoga County). Treacherous driving conditions were reported along with hundreds of accidents. \$4.5 million in property damage. No deaths or injuries.

Extreme Cold

December 1993

From December 26 to December 30, an extreme cold event occurred in several Ohio counties, including Ashtabula County. Temperatures averaged well below normal with high temperatures in the teens and low temperatures near zero. The morning of December 29 saw temperatures below zero over much of the area. Water main breaks occurred along with an increase in fires due to residents using additional heat sources. A homeless man (age unknown) in Toledo was reported to have died of hypothermia on the 28th. \$500,000 in property damage. One death and no injuries.

May 1994

On May 6, an extreme cold event occurred in Ashtabula County when record low temperatures produced a frost and freeze which damaged many of the grapevines in the vineyards near Lake Erie. \$500,000 in crop damage. No deaths or injuries.

February 1995

From February 11 to February 13, an extreme cold event occurred in several Ohio counties, including Ashtabula County. Arctic air spread across all of Ohio on February 11 producing low temperatures between zero and about 10 below on the morning of February 12 and close to zero on February 13. In Columbus (Franklin 055), a 19 month old child was found dead of exposure in her parents backyard apparently after slipping outdoors unnoticed. A couple apparently got lost in their car near Newark (Licking 056). The husband, age 82, set out on foot to find help and was found frozen to death. His wife, age 79, froze to death in the car. In Ironton (Scioto 088) an 18-year-old woman was found dead of exposure after her car went over an embankment and was not found until some time later. A number of water line breaks occurred. \$100,000 in property damages. Four deaths and no injuries.

December 1995

From December 9 to December 13, an extreme cold event occurred in several Ohio counties, including Ashtabula County. Arctic air moved into the area, initially with winds that gusted to 30 and 40 mph on December 9 and December 10 producing wind chill temperatures of 30 to 40 below zero. Actual temperatures were near zero at night and in the single digits and teens for afternoon maximums. A number of water lines froze and were damaged. Some frost bite cases were reported but a reliable estimate of injuries was not available. Three fatalities were reported due to hypothermia in the Cleveland area (Cuyahoga County), two were elderly males who died indoors and one homeless male was found outdoors. \$210,000 in property damage, three deaths and no injuries.

February 1996

From February 2 to February 5, an extreme cold event occurred in several Ohio counties, including Ashtabula County. Bitter cold arctic air was over the area with overnight low temperatures averaging between zero and 10 below and daytime high temperatures in the single digits. Wind gusts of 25 mph on February 2 dropped wind chills as low as 40 below zero and the wind picked back up on the February 5 again bringing similarly low wind chills. Actual air temperatures dropped as cold as -20 at Amherst (Lorain County) and -18 at Hambden (Geauga) on the night of the February 3/4 and to -14 at Elyria on the night of the February 4/5. Record lows were set at most stations across northern Ohio for February 3 and February 4. A number of pipes and water mains froze and/or broke. One fatality was reported as a 69 year old white male was found dead of hypothermia in his home in Cleveland. \$3.4 million in property damage, one death and no injuries.

January 1997

From January 10 to January 19, an extreme cold event occurred in several Ohio counties, including Ashtabula County. Low temperatures were in the single digits or below zero across all of Northern Ohio, causing frozen and ruptured water pipes. With wind chills of 40 to 50 below zero, many schools were forced to close. On January 19, Possum Run (Richland County), just south of Mansfield, reported a temperature of minus 15 degrees. Also, on January 19, Toledo (Lucas) had a low temperature of minus 10 degrees and Wauseon (Fulton) had a low of minus eight degrees. There were four

hypothermia deaths reported in Cuyahoga County during this time period. A 66 year old black male, and an 83 year old white female died in their homes on the 13th of the month. A 67 year old black female, and another female, age and race unknown, died in their homes on the January 14. \$195,000 in property damage, four deaths and no injuries.

May 2002

On May 20, an extreme cold event occurred in Ashtabula and Lake counties. Record cold morning lows in the upper 20s severely damaged the grape crop in Lake and northern Ashtabula counties. Around 60% of the chardonnay grape crop was destroyed by the late season freeze. Early estimates indicate that up to 90% of concord grape crop was also damaged. Actual losses will not be known until after the growing season concludes. \$3.5 million in crop damage. No deaths or injuries.

Summer Storms

Thunderstorms and High Winds

According to the NCDC, there have been 209 thunderstorm and high wind events recorded in Ashtabula County from 1962 to 2004. \$36.94 in property damage, \$2.46 million in crop damage, six deaths and 28 injuries.

November 1994

On November 1, 1994, a high wind event occurred in several counties, including Ashtabula County. Winds gusted over 60 mph at times across the northwest third of Ohio as a low pressure center passed through the northern Great Lakes. The highest measured wind gust was 63 mph at Columbus Grove (Putnam). Damage, for the most part, was not significant, with scattered trees, limbs, and power lines downed. A roof was reported blown off a trailer in Butler County. A church under construction in Findlay (Hancock) was severely damaged when much of the framing blew over. A chimney was toppled in Mansfield (Richland) and a motorist was injured in Port Clinton (Ottawa) when her vehicle was blown off the road after which she could not regain control. Fire departments battled a number of fires started from embers from leaf burning then regenerated from the strong winds. \$500,000 in property damage. No deaths and one injury.

July 1995

On July 13, 1995, a thunderstorm/wind event occurred in several northern counties of Ohio, including Ashtabula County. A line of severe thunderstorms roared south from Ontario and Michigan across Lake Erie at 50 mph. The strong winds rushed out ahead of the thunderstorms and despite the issuance of a special marine warning many boaters were caught by surprise. The Coast Guard received 152 calls for assistance and had to fish many people out of the lake as dozens of boats capsized or were destroyed on the rocks. One fatality occurred when a 28-year-old man capsized off Lorain and suffered broken bones and other injuries. He was hospitalized but died several days later. One couple spent almost eight hours in the water after their boat capsized near Kelleys Island. They were spotted by the Coast Guard search helicopter and had to be

treated for hypothermia. The other injuries were hypothermia or cuts and bruises. \$500,000 in property damage. One death and nine injuries.

November 1995

On November 11, 1995, a high wind event occurred in several counties, including Ashtabula County. Wind gusts of 60 mph or higher from the south occurred in many areas several hours ahead of a cold front and from west winds for an hour or two immediately following the front. Trees were downed in numerous locations, some on power lines, and some blocking roads. Several roads were closed due to downed trees in Wyandot County among others. Flagpoles and utility poles were damaged or downed. At 11:15 am wind gusts were measured at 58 mph at Lost Nation Airport (Lake County). At about the same time a TV tower was downed in Marion County. At 11:51 am a wind gust was measured at 58 mph three miles west of Port Clinton. Several traffic signals were blown down in Cuyahoga County and a number of signs were blown down in Crawford County where several residences also reported minor roof and siding damage and a small barn was destroyed near Bucyrus. A barn was also destroyed in Hancock County near Van Buren and a large wall of a new municipal building under construction in Maumee (Lucas County) was blown down.

March 1996

On March 25, 1996, high winds occurred in several counties, including Ashtabula County. Strong south winds became southwest and gusted to 60 mph or locally higher just ahead of and with the passage of a cold front. Trees were downed, some on power lines. Power outages were extensive in some areas. Minor roof damage occurred in some areas along with downed signs. Significant damage occurred in a few locations. Much of the roof was blown off a school gym in Kirtland (Lake County) while school was in session. No one was hurt but the children were sent home afterward. A large part of the roof at a restaurant in Akron (Summit) was blown off. Downed trees damaged houses in Rittman (Wayne), Canfield (Mahoning), Warren (Trumbull) and Ashtabula (Ashtabula County). A chimney was damaged at the Ashland County Courthouse and the steeple of a church was seriously damaged in Canton (Stark). A grocery store under construction at Stow (Summit County) had two walls blown over and a construction trailer rolled over. \$529,000 in property damage. No deaths or injuries.

October 1996

On October 30, 1996, high winds occurred in several counties, including Ashtabula County. A deep low pressure moving east across Ontario Canada brought winds of 60 to 70 mph, with higher gusts, to Northern Ohio. Trees, limbs and power lines were downed, some across roads, and others on cars, and buildings causing considerable damage. In Cuyahoga County, at Cleveland Hopkins Airport, a stewardess was blown off the steps of a commuter plane but was not injured. At least two cars, a truck and a house were struck by falling trees in Bay Village and shingles were blown from roofs in Berea. In Wayne County, signs were ripped from their standards and dropped on roads and a landfill was closed in Paint Township because of flying metal and tin. At Apple Creek, the arc from wind whipped downed electrical wires leading to a barn may have ignited a fire which was then whipped into an inferno by the high winds. The barn and some of the cattle in it were destroyed. A 16 ton concrete wall at a Revco drugstore under construction in Akron in Summit County was toppled and, in Springfield Township, a

storage facility under construction was destroyed. Also in Summit County, a 45 year old man, was struck by a falling tree at Raintree Country Club and died of head injuries. A wind gust of 67 mph was reported at Kent in Portage County. A wind gust of 79 mph was reported at Fairport Harbor in Lake County. A 71 mile per hour wind gust was reported in Ashtabula County, where a tree fell on a house in Geneva. In Jackson Township in Mahoning County, a construction barrel was blown into the path of a car, causing the car to collide with a truck and a concrete wall on Interstate 80. The driver of the car was treated for injuries. A 68 mph wind gust was reported at Toledo Express Airport in Lucas County. On Interstate 75 near Bowling Green in Wood County, a wind gust caused a semi truck to veer left of center and sideswipe another rig. There were no injuries. Also in Bowling Green, at least one tree fell on a house, one tree fell on two cars and a dumpster landed on another car. In Perrysburg Township, also in Wood County, the Islamic Center of Toledo was damaged when two minarets on top of a building were toppled and in Liberty Township, a wind gust forced a car into a utility pole, slightly injuring the driver. In Sandusky County, corn stalks that had been injured by corn borers, were very susceptible to the high winds. The loss to the corn crop was estimated at 10 to 30%. In Washington Township in Richland County, half the roof was blown from a barn, crumpled, and scattered across a road and a field. Tin strips dangled like confetti from what was left of the roof. \$5.3 million in property losses, \$2.3 million in crop damage, one death and two injuries.

February 1997

On February 27, 1997, high winds occurred in several Ohio counties, including Ashtabula County. Trees, limbs and power lines were downed, vehicles were damaged and structures were damaged or destroyed. In Auburn Township (Geauga County), a 250 gallon oil tank was blown over. The oil made its way to a creek, and the EPA worked to contain it before it reached Beantown Lakes. Just east of McClure (Henry), the metal roof was blown off a building. In Sandusky County, a tree fell on a house in Helena, a storage building was blown down in Hessville and wind gusts of 62 mph were reported at Fremont Progress Airport. In Cuyahoga County, a wind gust of 64 mph was reported in Garfield Heights. A semi truck was blown over near the Edison Bridge in Sandusky (Erie). A tree fell on a house in Lexington (Richland). The roof was blown off a house in Hayesville (Ashland), and in Stark County a tree fell on a car. A 66 mph wind gust was reported at Kent (Portage), and a gust of 63 mph was reported in Luckey (Wood). \$180,000 in property damage. No deaths or injuries.

March 1998

On March 28, 1998, high winds occurred in several Ohio counties, including Ashtabula County. Strong winds with gusts over 50 mph downed trees and power lines, some landing on vehicles and houses. One tree fell on a house in Ashland (Ashland County); one on a house in Willoughby (Lake); and the roof was blown off a mobile home near Smithville Western Rd. in Wayne Township (Wayne). \$305,000 in property damage. No deaths or injuries.

October 2000

On October 4, 2000, a thunderstorm occurred in Ashtabula County. Thunderstorm winds estimated at 60 to 70 mph caused considerable damage across the county. Several hundred trees and 55 power poles were downed. Widespread damage was reported in

Ashtabula, Pierpont, Andover, Jefferson and Geneva on the Lake. Major damage occurred at a campground just north of Andover where five homes were severely damaged by fallen trees. Over 50 trees were downed at the campground. \$1.0 million in property damage. No deaths or injuries.

December 2000

From December 11 to December 12, high winds occurred in several counties, including Ashtabula County. A very strong area of low pressure moved across Northwest Ohio and Lake Erie on the evening of December 11. Damaging winds occurred along and behind a cold front stretching south from the low. The damaging winds began just before midnight and continued through the early morning hours then gradually diminished. Widespread power outages occurred with several thousand trees downed. Over 20% of the homes in Northeast Ohio suffered power outages. Wind gusts in excess of 55 mph were measured at all of the major reporting sites. A gust to 80 mph was recorded on the east side of Cleveland with a 74 mph measured in Portage County at the Kent State Airport. A 72 mph gust was measured at Canton with a 67 mph gust in downtown Akron. Buildings lost roofs in Cleveland (Cuyahoga County), Polk (Ashland County), Bainbridge (Geauga County), Shelby (Richland County) and rural Erie County. Buildings under construction in Summit County (near Richfield) and Ottawa County (Oak Harbor) were destroyed. Radio towers were toppled near Painesville in Lake County and also in Stark County. Also in Stark County, a small plane was blown over a chain link fence and destroyed. A new mobile home was blown over and destroyed in Wayne County. Many barns were either blown down or lost roofs. Several dozen homes were damaged by fallen trees as were approximately 100 cars. In rural Hancock County, a row of 32 power poles was knocked down by the winds. \$4.4 million in property damage. No deaths or injuries.

February 2001

From February 9 and 10, high winds occurred in several Ohio counties, including Ashtabula County. A strong cold front moved across northern Ohio during the evening hours. Damaging westerly winds occurred behind the front for a period of several hours. A 63 mph wind gust was recorded in Lucas County around 9 pm with a 61 mph gust measured in Ottawa County shortly after. A 71 mph gust was recorded at Garfield Heights in Cuyahoga County at 1050 pm with a 60 mph gust in downtown Cleveland. Several hundred trees were downed throughout northern Ohio. Power poles were reported downed in Wood and Huron counties. The strong winds also blew a semi truck over near Cygnet in Hancock County. Also, a portion of a roof was torn off of a house in Stark County near Canton. \$320,000 in property damage. No deaths or injuries.

On February 25, high winds occurred in several Ohio counties, including Ashtabula County. An area of very strong low pressure moved across the Great Lakes during the day and caused damaging southwest to west winds in northern Ohio. A 58 mph wind gust was measured in Stark County shortly before noon. Dozens of trees were knocked down across the area with most of the damage occurring during the middle part of the day. A small barn was blown down in Richland County and a house in Crawford County had a wall damaged. A cinder block wall at a construction site in Huron County was toppled and several homes lost siding in Summit County. A building in Geauga County suffered major roof damage with several other structures in northern Ohio sustaining

minor roof damage. A few power poles and road signs were also blown down. \$460,000 in property damage. No deaths or injuries.

October 2001

On October 16, a high wind event occurred in several Ohio counties, including Ashtabula County. An area of strong low pressure moved northeast across Ohio. Strong and gusty northwest winds behind the low caused damage across portions of Northeast Ohio. A 70 mph gust was measured at the Cleveland lighthouse (Cuyahoga County) with a 66 mph gust at the Ashtabula lighthouse (Ashtabula County). At the Lorain Harbor lighthouse (Lorain County) a 61 mph gust was recorded with a 69 mph gust measured at Kent in Portage County. Dozens of trees were downed in Lorain, Cuyahoga, Lake, Geauga, Ashtabula, Trumbull, Mahoning, Portage and Summit counties. Widespread power outages from downed power lines also occurred. Cars were damaged by fallen trees in Avon Village (Lorain County) and Lakewood (Cuyahoga County). Homes were damaged by fallen trees in North Olmsted and Garfield Heights both in Cuyahoga County. \$190,000 in property damage. No deaths or injuries.

From October 25 to October 26, high winds occurred in several Ohio counties, including Ashtabula County. Damaging westerly winds occurred in northern Ohio behind a strong cold front. The strongest winds occurred during the late afternoon and evening hours. The peak recorded wind was a 69 mph gust at Louisville in Stark County with a 57 mph gust measured on a bridge over Sandusky Bay (Erie County). Hundreds of trees were downed across the area and scattered power outages from downed poles and power lines also occurred. A large tree fell on a doctors office in Wooster (Wayne County) and severely damaged the building. Two people inside the building sustained minor injuries and two cars outside were also damaged. In Ottawa County, a wind gust blew a window out at a school in Port Clinton. A 13 year old male student was injured by the flying glass. A car was also damaged by a tree in Port Clinton. In Hancock County, a 48 year old male was injured when a 30 foot metal pole struck a vehicle and then rolled onto him. The man was taken to a hospital with head and neck injuries. A garage was leveled by a tree in Lorain County. Two cars were crushed by fallen trees in Stark County and a home was damaged in Ashtabula County. Two houses and a car were damaged by fallen trees in Portage County. A tree fell on a moving car in Mentor (Lake County). The driver was not injured but the car was destroyed. \$760,000 in property damage. No deaths and four injuries.

December 2001

On December 14, 2001, high winds occurred in several Ohio counties, including Ashtabula County. Strong low pressure moved northeast across Ohio during the afternoon and early evening hours. Damaging southwest winds occurred late in the afternoon with winds quickly shifting to the northwest during the evening as a trailing cold front moved across the area. Many trees were downed and scattered power outages were also reported. Knox County was hardest hit with a barn blown off of its foundation and several dozen trees downed. Also hard hit were Portage and Trumbull counties where widespread power outages occurred. \$225,000 in property damage. No deaths or injuries.

February 2002

On February 1, high winds occurred in several Ohio counties, including Ashtabula County. A strong cold front moved east across Ohio around daybreak. Damaging westerly winds behind this front downed dozens of trees and many power poles. Wind gusts in excess of 60 mph were measured and numerous power outages occurred. At the peak of the storm over 60,000 homes and businesses were without power in northeastern Ohio alone. A 40,000 square foot indoor golfing dome was toppled and destroyed at Huron in Erie County. In Portage County near Brimfield, a large tree fell on a mobile home and destroyed it. A home was also damaged by a tree in Cuyahoga County. A home in Wood County was damaged by a section of roofing torn off of a nearby barn. \$1.1 million in property damage. No deaths or injuries.

March 2003

From March 10 to March 11, high winds occurred in several counties of Ohio, including Ashtabula County. A strong and very fast moving cold front raced east across northern Ohio during the late afternoon and early evening hours. Damaging winds occurred along and behind this front. A 41 year old male was struck and killed by a falling tree in Lorain (Lorain County). A second fatality occurred in Cuyahoga Falls (Summit County) when a 63 year old male was struck and killed by a falling tree. Peak wind gusts include: 69 mph at Toledo Express Airport (Lucas County) at 258 pm; 55 mph at Mansfield Lahm Airport (Richland County) at 415 pm; 63 mph at Findlay Airport (Hancock County) at 423 pm; 62 mph at the Lorain County Airport at 429 pm; 62 mph at Cleveland Hopkins Airport (Cuyahoga County) at 448 pm; 58 mph at Toledo Metcalf Airport (Wood County); 53 mph at the Wayne County Airport at 454 pm; 51 mph at the Ashtabula County Airport at 517 pm; 60 mph at Akron-Fulton Airport (Summit County) at 520 pm; 62 mph at Akron-Canton Airport (Summit County) at 523 pm; 63 mph at the Youngstown-Warren Regional Airport (Trumbull County) at 607 pm; 54 mph at the Marion County Airport at 610 pm. Other measured wind gusts include; 100 mph at Bowling Green (Wood County); 78 mph at the Huron County Airport; 75 mph at Burton (Geauga County); 75 mph at Fremont Airport (Sandusky County); 74 mph at Louisville (Stark County); 65 mph at Medina (Medina County). Thousands of trees and hundreds of power poles were downed in northern Ohio. Widespread power outages occurred with several hundred thousand people without power at the peak of the storm. Over a million dollars in damage occurred at a school construction site in Struthers (Mahoning County). A fire truck responding to an emergency was blown over in Trumbull County injuring two people. Three mobile homes were destroyed in Sandusky County injuring three people. Two additional people were injured by a falling tree in Ravenna (Portage County). A large poultry farm building was leveled in Marion County. A large building collapsed in North Baltimore (Wood County) and damaged two adjacent buildings forcing the closure of three businesses. A woman was seriously injured in Maple Heights (Cuyahoga County) by flying glass and debris. Several buildings were destroyed in Wyandot County and an historic covered bridge was severely damaged. Two homes were destroyed in Ottawa County. Two cargo containers were blown off of a moving train and into Sandusky Bay (Erie County). Other buildings were destroyed in Seneca, Hancock, Crawford, Morrow, Ashland and Stark counties. Hundreds of other buildings sustained damage and over 100 cars were damaged or destroyed by debris and fallen trees. \$8.9 million in property damage. Two deaths and eight injuries.

June 2002

On June 21, 2002, a thunderstorm/wind event occurred in Mechanicsville, Ashtabula County. Thunderstorm winds downed at least five trees. Three buildings were damaged and a truck was destroyed. A grain bin was also toppled. \$125,000 in property damage. No deaths or injuries.

February 2003

On February 4, 2003, strong winds occurred in Geauga, Lake and Ashtabula counties. A strong cold front moved across northeastern Ohio early in the day. Gusty westerly winds occurred behind this front and downed trees and power lines throughout Ashtabula, Geauga and Lake counties during the late morning and early afternoon hours. A peak measured gust of 47 mph was recorded at the Ashtabula County Airport. \$150,000 in property damage. No deaths or injuries.

On February 12, high winds occurred in Ashtabula, Cuyahoga, Erie, Lake, Lorain and Ottawa counties. A strong arctic cold front moved across northern Ohio during the early morning hours. A peak wind gust of 63 mph was measured in Garfield Heights (Cuyahoga County) at 1:29 am. Other measured gusts include; 61 mph at Cleveland-Burke Lakefront Airport, 60 mph at North Ridgeville (Lorain County) and 56 mph at the Lorain County Airport. The strong winds downed trees and power lines all along the south shore of Lake Erie. Six train cars were blown off of a bridge over Sandusky Bay (Ottawa County) around 1 a.m. A semi was blown over in Benton Township (Ottawa County) near the intersection of State Routes 2 and 590. In Erie County, a 40 by 60 foot section of metal roofing was torn off of a building located along U.S. Route 6 to the southeast of Sandusky. Property damage totaled \$1.3 million. No deaths or injuries.

May 2003

On May 11, strong winds occurred in several Ohio counties, including Ashtabula County. A strong cold front extending south from an area of low pressure over the northern Great Lakes moved into Northwest Ohio during the morning hours and as far east as Pennsylvania by late afternoon. Strong and gusty westerly winds behind this front caused scattered power outages across northern Ohio. Hundreds of trees and utility poles were downed. Fallen trees significantly damaged homes in Erie, Knox, Lucas, Portage and Seneca counties. Many automobiles were also damaged across the area. In Toledo alone (Lucas County), 30 trees and 238 large limbs were downed by the strong winds. Peak measured wind gusts include: 52 mph at Toledo (Lucas County); 54 mph at Findlay (Hancock County); 51 mph in downtown Cleveland (Cuyahoga County); 47 mph at Elyria (Lorain County); 46 mph at Mansfield (Richland County) and 45 mph at Akron-Canton (Summit County). \$1.2 million in property damage. No deaths or injuries.

November 2003

From November 12 to November 13, high winds occurred in several Ohio counties, including Ashtabula County. A strong arctic cold front moved across northern Ohio on the evening of November 12. Gusty westerly winds behind the front caused widespread damage. Most of the damage occurred during the late evening hours of November 12 and the early morning hours of November 13. A peak wind gust of 63 mph was recorded at Toledo Express Airport (Lucas County) at 8:59 p.m. with 60 mph gusts at both

Cleveland Burke Lakefront Airport (Cuyahoga County) and Waco (Stark County). A 59 mph gust was measured at Cleveland Hopkins International Airport (Cuyahoga County) at 9:25 p.m. with a 58 mph gust at Akron-Canton Regional Airport (Summit County) around 11:00 p.m. Hundreds of trees and utility poles were downed around northern Ohio. Scattered power outages were reported as well. One of the hardest hit areas was along and near Lake Erie in Lake and Ashtabula counties. Several homes and buildings were damaged by the strong winds and fallen trees in the area. An historic home in eastern Lake County was heavily damaged. Homes were also damaged in Cuyahoga, Lorain, Lucas, Marion, Seneca and Portage counties. Semi trucks were overturned in both Crawford and Stark counties. Dozens of other vehicles were damaged elsewhere in northern Ohio. Finally, significant crop losses were reported as a result of the strong winds. Hundreds, if not thousands of acres of corn were either partially or completely flattened. \$2.3 million in property damage. No deaths or injuries.

March 2004

On March 5, high winds occurred in several Ohio counties, including Ashtabula County. Strong low pressure passed to the north of Lake Erie. An associated occluded front stretching south from the low moved across northern Ohio during the morning of March 5th. Very strong and gusty southwesterly winds occurred behind this front during the afternoon hours. Peak measured wind gusts include: 59 mph at Cleveland Hopkins International Airport (Cuyahoga County); 59 mph at Mansfield Lahm Airport (Richland County); 59 mph at the Lorain County Airport; 53 mph at the Akron-Canton Airport (Summit County); 52 mph at the Wayne County Airport; 51 mph at the Youngstown-Warren Regional Airport (Trumbull County); 51 mph at Findlay Airport (Hancock County); 49 mph at the Marion County Airport and 48 mph at Toledo Express Airport (Lucas County). Spotters measured a 60 mph gust in Bucyrus (Crawford County) and a 58 mph gust in Bowling Green (Wood County). Lorain County was especially hard hit with many homes damaged along and near Lake Erie. A police cruiser was hit by a falling tree in Amherst with the officer inside sustaining serious injuries. The roof of a retirement home in Sandusky County was torn off and a large business lost much of its roof in Cuyahoga County. Hundreds of homes throughout northern Ohio sustained varying amounts of damage. Tractor trailers were overturned in Wood and Ottawa counties. Dozens of utility poles and hundreds of trees were also toppled. At the peak of the storm, over 250,000 customers were without electric service. \$2.4 million in property damage. No deaths and one injury.

May 2004

On May 21, 2004, thunderstorms occurred throughout Ashtabula County. A line of severe thunderstorms moved across Ashtabula County and downed hundreds of trees and caused widespread power outages. Several homes and vehicles in the County were damaged by fallen trees. \$175,000 in property damage. No deaths or injuries.

September 2004

On September 9, strong winds occurred in Ashtabula, Geauga, Lake, Mahoning, Portage, Stark and Trumbull counties. The remnants of Tropical Storm Frances moved northeast across the upper Ohio Valley on September 8. Gusty northerly winds behind this storm caused considerable damage in northeastern Ohio. Hundreds of trees were downed in Ashtabula, Trumbull, Mahoning, Portage, Lake, Geauga and Stark counties.

Trumbull County was especially hard hit with at least five homes damaged in the Cortland area by fallen trees. Roads were blocked by trees in both Niles and Liberty Township. In Stark County, a tree hit a moving car around 4:30 p.m. The driver sustained only minor injuries, but the car was heavily damaged. In Mahoning County, a fallen tree destroyed a garage in Milton Township. A pier at an Eastlake marina (Lake County) was destroyed by high winds and waves. \$525,000 in property damage. No deaths or injuries.

December 2004

On December 1, high winds occurred in Ashtabula, Cuyahoga, Erie, Lake, Lorain, and Ottawa counties. An area of low pressure moved east across Lake Erie during the morning hours of December 1. Strong westerly winds occurred behind this low and caused damage along the south shore of Lake Erie. A peak wind gust of 64 mph was measured on South Bass Island (Ottawa County) around 8:00 am. Many trees were downed in Ottawa, Erie, Lorain, Cuyahoga, Lake and Ashtabula counties. Scattered power outages were also reported in these counties. Damage was suffered at a water tower construction site in Lake County. \$180,000 in property damage. No deaths or injuries.

On December 7, high winds occurred in several counties throughout Ohio, including Ashtabula County. An area of strong low pressure moved northeast across Michigan and into Ontario on December 7. Strong winds occurred to the east of the low as it moved through the region. A line of weak showers developed to the west of Interstate 71 during the late afternoon hours and then raced east across northeastern Ohio. Gusty winds associated with this line were responsible for most of the damage that occurred. A peak gust of 66 mph was measured at Burke Lakefront Airport (Cuyahoga County) at 443 p.m. Hundreds of trees were downed across the area and many power outages were reported. A home in Huron County was heavily damaged by a fallen tree. \$380,000 in property damage. No deaths or injuries.

Lightning

July 1995

On July 16, a lightning strike occurred in Andover. A 49-year-old man working for the utility company repairing storm damage to some lines was struck by lightning and had to be treated.

June 1996

On June 24, a lightning strike occurred in Pymatuning. Lightning struck a barn and the barn was destroyed by the resulting fire. Equipment and hay were also lost. \$200,000 in property damages.

August 1996

On August 15, a lightning strike occurred in Geneva causing \$5,000 in property damage. Lightning struck a tree next to a house, possibly causing a fire that damaged the attic and second floor.

On August 20, a lightning strike occurred in Conneaut. Lightning started a fire that destroyed a storage building containing a motorcycle and mowers. \$1.5 million in property damage.

July 1999

On July 3, a man was struck by lightning along the lakeshore at the Great Lakes Marina. The person received minor injuries and was taken to a local hospital for treatment.

A 26 year old male and a female of unknown age were struck by lightning while picnicking at Lakeshore Park in Ashtabula Township. Both people received minor injuries and were taken to a local hospital where they were treated and released.

On July 6, two men, ages 55 and 31 were struck by lightning while leaning on a metal pole in their yard in Jefferson. Both men were treated for minor injuries at a local hospital.

Flash Flooding

August 1994

On August 13, a flash flood occurred in Ashtabula County. A series of thunderstorms crossed northeast Ohio during the morning hours producing record rainfall. Most areas averaged four to five inches of rain in less than 6 hours, more than the 100 year rainfall. Several locations reported upwards of seven inches of rain with a maximum of seven inches in Twinsburg (Summit). Flooding was significant - homes and businesses were flooded and had to be evacuated. Tens of thousands of basements were flooded. Motorists were rescued from stranded vehicles. Many roads were closed including Interstate 77 and some roads and bridges were completely washed away. The Cuyahoga County Fair was cancelled for the first time in 30 years. A local man was injured while rafting in flood waters. Two fireman were injured when their truck fell into a washed out section of road. A Streetsboro (Portage) man was injured by electrical shock while moving a downed antenna during the rain. \$500,000 in property damage. No deaths or injuries.

July 2003

On July 21, a flash flood occurred in the southern portion of Ashtabula County. Heavy thunderstorm rains fell on Ashtabula County. Spotters in Colebrook Township measured 4.5 inches of rain during the day with over 3.5 inches measured in Orwell Township. Widespread lowland and street flooding was reported in southern Ashtabula County as several small streams and creeks left their banks. A few homes and buildings were damaged by flood waters up to two feet deep. Several roads had to be closed. \$500,000 in property damage. No deaths or injuries.

May 2004

On May 21, a flash flood occurred in Ashtabula County. A line of severe thunderstorms moved across Ashtabula County during the late afternoon hours and was quickly followed by a second round of storms. Torrential rain fell as this series of storms moved through. Spotters measured as much as four inches of rain in the southeastern corner of

the county. Widespread flooding occurred across southern and central Ashtabula County as several streams and creeks quickly filled and left their banks. Three Brothers Creek went into flood south of Jefferson and washed out a section of State Route 46 between Webster and Holcomb roads just after 7:00 pm. Spotters in the area measured 2.25 inches of rain during the storms. Numerous road closures were reported elsewhere in the county with dozens of homes and vehicles damaged by the flood waters. Flood waters were reported to be as much as three feet deep on a couple roads. \$750,000 in property damage. No deaths or injuries.

On May 23, a flash flood occurred throughout Ashtabula County. Heavy rain producing thunderstorms moved across Ashtabula County. Up to an inch of rain fell on ground already saturated from rains the previous few days. Flash flooding resumed in the County after streams and creeks once again quickly rose. Several roads had to be closed because of flood waters up to two feet deep. Several homes and vehicles were damaged. \$100,000 in property damage. No deaths or injuries.

June 2004

On June 9, a flash flood occurred in the southern portion of Ashtabula County. Thunderstorms dumped two to four inches of rain on the southern portion of Ashtabula County during the evening hours. Widespread lowland and street flooding was reported. Some of the worst flooding occurred south of Jefferson where State Route 11 had to be closed. Several motorists became stranded in flood waters up to two feet deep. Many other roads in the southern half of the County also had to be closed. Dozens of homes and vehicles sustained flood damage. \$150,000 in property damage, no deaths or injuries.

August 2004

On August 28, a flash flood occurred in Ashtabula County. Thunderstorms dumped up to three inches of rain on portions of Ashtabula County. Runoff from this rain caused widespread lowland flooding. Several roads and streets had to be closed because of flood waters up to two feet in depth. At least one car became stranded in a flooded underpass in Ashtabula. Flood waters damaged several businesses in Ashtabula. Dozens of buildings elsewhere in the county experienced basement or nuisance flooding. \$200,000 in property damage, no deaths or injuries.

September 2004

From September 8 to September 9, a flash flood occurred in Ashtabula County. Heavy rains associated with the remnants of Tropical Storm Frances caused flooding over portions of Ashtabula County. Rain began early on September 8 and increased in intensity during the evening hours. The heavy rain continued into the September 9 and finally ended just before daybreak. Rainfall totals from the event included: 2.08 inches at Ashtabula; 2.42 inches at Geneva; 2.88 inches at Jefferson; 3.00 inches at New Lyme; 3.68 inches at Conneaut and 4.66 inches at Pierpont. Significant flooding occurred along Conneaut Creek in the northeastern corner of the county. Very heavy rain fell over the headwaters of the creek in Pennsylvania and caused a rapid rise in creek levels beginning around midnight. By 12:24 a.m., a campground along Creek Road in Kingsville Township was under as much as five feet of water. Seventeen campers at the campground barely escaped the rapidly rising waters and had to be rescued by boat.

Several roads near the creek were washed out by the flood waters. Many other roads, including State Route 7 had to be closed because of flooding. Over a dozen vehicles were damaged at an automobile dealership by flood waters up to four feet deep. Hundreds of homes and businesses were damaged by flooding. Several of these sustained significant damage. \$800,000 in property damage, no deaths or injuries.

Tornadoes

7/8/1956 – F2 \$250,000, property damage

4/16/1961 – F1, \$250,000 property damage

7/24/1967 – F2, two injuries, \$250,000 property damage

5/31/1985 – F4, \$250,000 property damage

5/31/1985 – F3, 10 injuries, \$2.5 million property damage

5/31/1985 – F2, 15 injuries, \$2.5 million property damage

6/22/1985 – F2, two injuries, \$250,000 property damage

Floods

June 1997

On June 1, a flood occurred in Ashtabula County. The Grand River overflowed its banks and forced some residents from their homes in Autinburg Township. A total of 78 homes and cottages were damaged. \$300,000 in property damage reported. No deaths or injuries.

June 2003

From June 12 to June 13, a flood occurred in Ashtabula and Trumbull counties. Thunderstorms dumped two to around three inches of rain on portions of Ashtabula County during the evening of June 12. This rain combined with ground already saturated from rains the previous day led to widespread lowland and street flooding. 3.22 inches of rain was measured in Dorset with 2.75 inches in Ashtabula and 2.46 inches at the Ashtabula County Airport near Jefferson. Saybrook, Geneva, Cherry Valley and Jefferson Townships were especially hard hit. Mill Creek left its banks in Jefferson Township forcing the closure of State Route 46 for several hours. Many other roads in the county were also closed because of flooding. A motorist had to be rescued from a stranded vehicle in Cherry Valley Township. Many homes and vehicles were damaged by the flood waters up to three feet deep. \$900,000 in property damage. No deaths or injuries.

On July 23, a flood occurred in Ashtabula, Geauga, Stark and Trumbull counties. Thunderstorms moved across northeastern Ohio and dumped one to two inches of rain on already saturated ground. Widespread urban and lowland flooding continued across the area. Many streams and small creeks remained in flood and dozens of roads had to

be closed. Basement flooding damaged hundreds of homes. \$350,000 in property damage. No deaths or injuries.

January 2005

From January 1 to January 15, flooding occurred in Ashtabula, Cuyahoga, Geauga, Lake, Lorain, Mahoning, Medina, Portage, Summit and Trumbull counties. Heavy rain and runoff from snowmelt caused widespread flooding throughout Northeast Ohio during the first half of January. January 2005 was among the wettest January ever. At Cleveland, 5.92 inches of precipitation was recorded making it the third wettest January ever. Youngstown had its fourth wettest January with 5.86 inches of precipitation. Other totals from the cooperative observer network included: 5.79 inches at Lagrange (Lorain County); 5.83 inches at Elyria (Lorain County); 6.10 inches at Oberlin (Lorain County); 6.52 inches at Ravenna (Portage County); 7.17 inches at Hiram (Portage County); 8.70 inches at Warren (Trumbull County); 5.41 inches at Kirtland (Lake County); 7.47 inches at Chardon (Gauga County); 6.13 inches at Ashtabula (Ashtabula County) and 5.85 inches at Dorset (Ashtabula County). In addition to this rain, extensive snowpack existed over Northeast Ohio at the beginning of the month. Temperatures in the upper 40s and 50s the first three days of the month caused a rapid snowmelt and brought area streams and creeks to bankfull just in time for a significant winter storm on January 5 and January 6. Then, just as things began to return to normal, heavy rains fell on the area on January 11, January 12 and January 13 causing conditions to once again worsen. Many rivers, including the Mahoning, Cuyahoga and Black went into flood. Flooding along the Black River in Lorain County was particularly severe with at least 10 homes needing evacuation in Carlisle Township. Mainly nuisance flooding occurred along the Mahoning and Cuyahoga Rivers with just minor damage and a few road closures reported. In addition, flooding was also reported along most of the streams and creeks in the area. Homes were damaged by flooding along Wolf Creek in Sharon Township (Medina County). In addition to the river and lowland flooding, sump pump failures caused by power outages from the ice storm of January 5 and January 6 led to hundreds of homes sustaining damage from basement flooding. Many road closures were reported. \$5.4 million in property damage, no deaths or injuries.

Droughts

Summer of 1999

June--Little rain occurred from late May through much of June. Only 1.19 inches of rainfall fell at Akron-Canton during the month making it the fifth driest June on record. Similarly, 1.66 inches of rain fell at Mansfield also making it the fifth driest June on record. Scattered rains late in June brought hope for farmers but it is likely that crop yields will be reduced even with adequate rain the remainder of the season. Losses due to the drought were unknown. Several communities instituted water use restrictions.

July--Drought conditions across northern Ohio eased as thunderstorm rains became more widespread. None the less, very dry soil conditions persisted in a few areas that missed the brunt of the thunderstorm activity. Some communities instituted water use restrictions and crop yields will likely be reduced because of the lack of adequate rainfall. Losses due to the drought were unknown.

August--Drought conditions persisted across northern Ohio as rainfall totals for the month were below normal at most locations. Only 1.40 inches of rain fell in Toledo during August with only 1.80 inches measured in Cleveland. Both of these totals are roughly half the monthly normal. Mansfield finished the month 1.98 inches below normal making it the sixth driest August on record. Water use restrictions were instituted in many areas. The drought also greatly impacted agricultural interests. Crop yields in northern Ohio will be reduced by an average of 30% this growing season. Actual financial losses will not be known until after the fall harvest.

September--Drought conditions continued across most of northern Ohio during September. Widespread heavy rain occurred on September 29 but did little to help crop conditions. For the month, only 1.63 inches of rain fell in Mansfield making it the ninth driest September on record. Of the 1.63 inches, 1.14 inches fell on September 29. Even with an inch of rain on that day, both Toledo and Cleveland finished with below two inches of rain for the month. Losses from reduced crop yields are estimated at \$200.0 million for northern Ohio alone.

Excessive Heat

July 1995

From July 12 to July 17, a heat wave occurred in several northern Ohio counties, including Ashtabula County. Record or near record high temperatures in the 90s along with excessive humidity occurred with the peak of the heat and humidity occurring on July 14 when high temperatures were near or exceeded 100. Dewpoints were also unusually high averaging near 80 which produced a heat index as high as 126 F in Toledo. A number of roads and sidewalks buckled from the heat. The extent of heat related injuries is uncertain but at least eight people were treated for heat exhaustion in Cleveland (Cuyahoga) and four in Akron (Summit). There were no known fatalities during this hot spell but 1,500 swine perished from the heat in a barn at the Kalbach-Wagner Swine Research Farm in Wyandot County when the ventilation system failed. \$600,000 in property damage. No deaths and 12 injuries.

August 1995

On August 3, a heat wave occurred in several northern Ohio counties, including Ashtabula County. Hot weather with afternoon temperatures in the 90s and relatively high humidity caused injuries and fatalities. Four of the five fatalities were older citizens and all occurred in Cuyahoga County in the Cleveland urban area where little cooling occurs during the night. Injuries were generally from heat stress/stroke. Eight occurred in Cuyahoga County, with two in Summit County and one in Lorain County. Figures for the fatalities are from the County Coroners. The number of injuries is uncertain due to the lack of reporting and the actual number treated for heat stress/stroke is likely higher. No property damage, five deaths and 11 injuries.

From August 8 to August 22, a heat wave occurred in several Ohio counties, including Ashtabula County. An unusually long period of hot weather with afternoon temperatures generally in the 90s and relatively high humidity caused injuries and fatalities. Older utility systems suffered a high incidence of breakdown due to prolonged high demand and some roads buckled in the heat. Twelve of the 13 fatalities were older citizens and all occurred in Cuyahoga County in the Cleveland urban area. Nights remained

unusually warm and in a number of cases temperatures stayed in the 80s all night in the city which likely contributed to the heat related problems. Injuries were generally from heat stress/stroke. Of the injuries, 40 occurred in Cuyahoga County, six in Summit, three in Lorain, two in Lucas and one in Trumbull. Figures for the fatalities are from the county coroners. The number of injuries is uncertain due to lack of reporting and the actual number treated for heat stress/stroke is likely higher. There was very little crop damage, and what little may have occurred did not occur until the later days of the heat wave when a lack of rainfall began to have an impact. \$500,000 in property damage. Thirteen deaths and 52 injuries.

Earthquakes

January 2001

On Thursday, January 25, 2001, Ashtabula, Ohio, and surrounding communities were shaken by a 4.5-magnitude earthquake at 10:03 pm. This event followed a 2.6-magnitude earthquake on January 19, at 9:05 pm. The larger event was felt throughout an extensive area of northern Ohio, western Pennsylvania, Michigan and Ontario, Canada. Preliminary damage reports from Ashtabula indicate cracked plaster and masonry, walls bowed or moved, items knocked off shelves, and a ruptured natural gas line that resulted in evacuation of some residents. Minor damage was caused to approximately 50 homes and businesses.



At least two aftershocks in the 3.0 magnitude range occurred in the hours after the main shock. The 4.5-magnitude mainshock is the largest earthquake in historic times in the Ashtabula area. Small earthquakes have previously been recorded in the area in 1987, 1989, 1992, and 1995. None of these events caused damage. The mainshock was widely recorded by the Ohio Seismic Network (OhioSeis) and at seismic stations operated outside of Ohio by the U.S. Geological Survey, the Geological Survey of Canada, the University of Western Ontario, and a variety of other networks and independent seismic stations.

This wealth of data permitted the Ohio Seismic Network to locate the mainshock on the east side of Ashtabula.

Pastor Virgil V. Reeve stands at the keyboard of the pipe organ at the First Baptist Church in Ashtabula. The pipe organ fell during the January 25, 2001 earthquake. (Photo from Ashtabula Star Beacon.)

Location of January 2001 Earthquakes



Latitude: 41.87° N, Longitude: 80.76° W, Origin Time: 03:03:20.63

June 2001

On June 3, 2001 at 6:36 pm, residents of Ashtabula and nearby areas were shaken by another earthquake. This event had a magnitude of 3.2, as determined by the Ohio Seismic Network. No damage was reported, although more than 90 felt reports were received by the Ashtabula County Emergency Management Agency. A 2.3-magnitude aftershock was recorded at 4:27 a.m. on June 5. One person reported feeling it. The epicenter location is east of Ashtabula.

These earthquakes follow a 2.6-magnitude event on January 20 and a 4.5-magnitude event on January 25. The latter event resulted in at least 50 reports of damage. The cause of this earthquake sequence is unknown at this time but is being investigated by the Ohio Seismic Network and seismologists from Lamont-Doherty Geological Observatory of Columbia University and the University of Michigan.

Location of June 2001 Earthquake



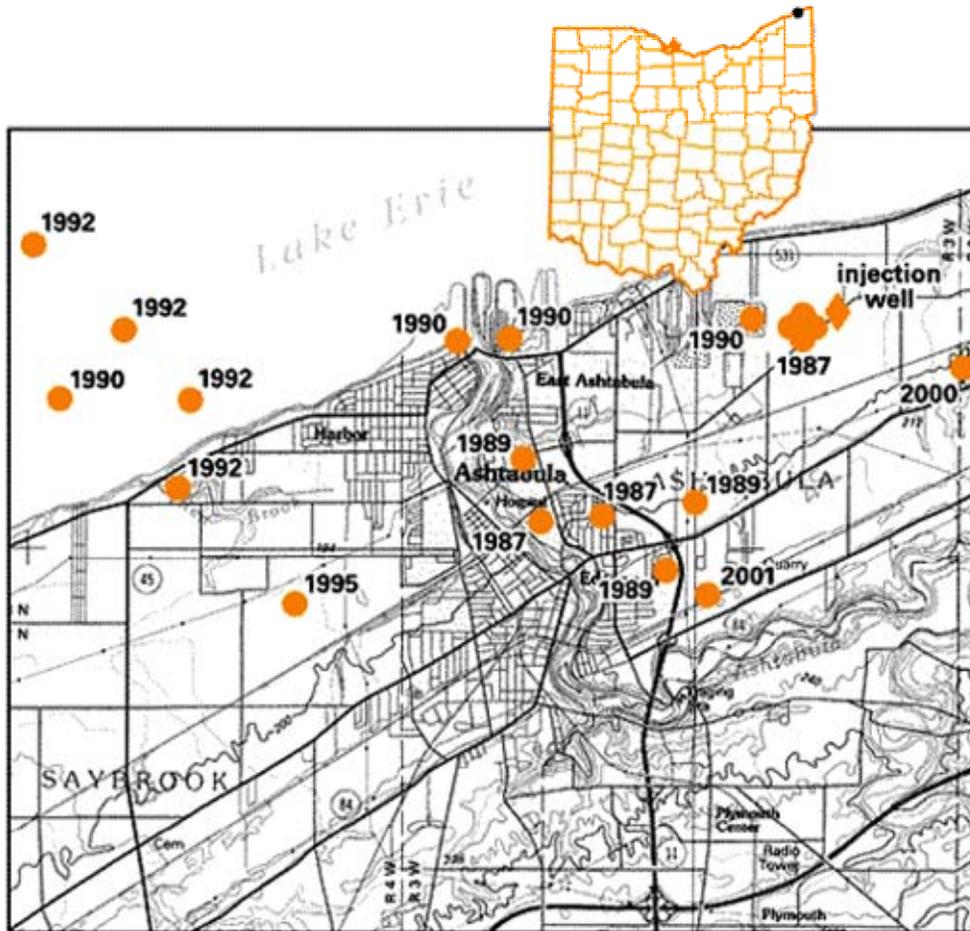
February 2005

On February 23, 2005 at 1:12 am, a small earthquake occurred about one mile north-northwest of Geneva, Ashtabula County, on February 23, 2005 at 1:12 am. One probable felt report was received from an individual on the west side of Ashtabula. Considering the small magnitude, which is near the lower threshold of being felt, and the time of day of the event, it is not unusual to receive very few felt reports. Individuals who felt this event are encouraged to submit a report. Small earthquakes were recorded in this general area in 2002 and 2003.

March 2005

On March 2, 2005 at 1:53 am, a small earthquake occurred just west of Geneva, Ashtabula County. The magnitude was registered at 2.2. A 2.0 magnitude earthquake occurred in this general vicinity on February 23 at 1:12 am. A 2.0-magnitude event occurred in this area on August 17, 2002. One person reported feeling the earthquake on February 23. Residents who felt either the February 23 or March 2 earthquakes are encouraged to click on the link below and complete a brief report on what they experienced.

Locations of Earthquakes from 1987 to 2001



Epicentral locations for Ashtabula earthquakes greater than 2.0 magnitude. The 1987 and 2001 earthquakes are precisely located using multiple, nearby stations, whereas the events between 1987 and 2001 have greater margins of error in their locations because of seismic-station geometry and distance.

Water Spouts

September 1995

Several waterspouts were spotted near The Marblehead on Lake Erie and reported to the Coast Guard. They developed in the cold unstable air over the warm lake waters. No damage was reported and the waterspouts remained over the water.

October 1995

Water spouts, contained within an area of showers and thunderstorms, were reported just north of Conneaut on Lake Erie. They did not come ashore and there was no known damage.

June 1996

A waterspout was reported offshore within an area of showers and thunderstorms just north of Conneaut. It did not come ashore and there was no known damage.

July 1996

A waterspout was reported offshore within an area of showers and thunderstorms just north of Conneaut. It did not come ashore and there was no known damage.

August 1996

Three waterspouts were reported five to 12 miles offshore of Fairport Harbor and Ashtabula. They did not come ashore and no damage was reported.

August 2000

A waterspout was observed a couple miles offshore from Conneaut. No damage occurred.

September 2001

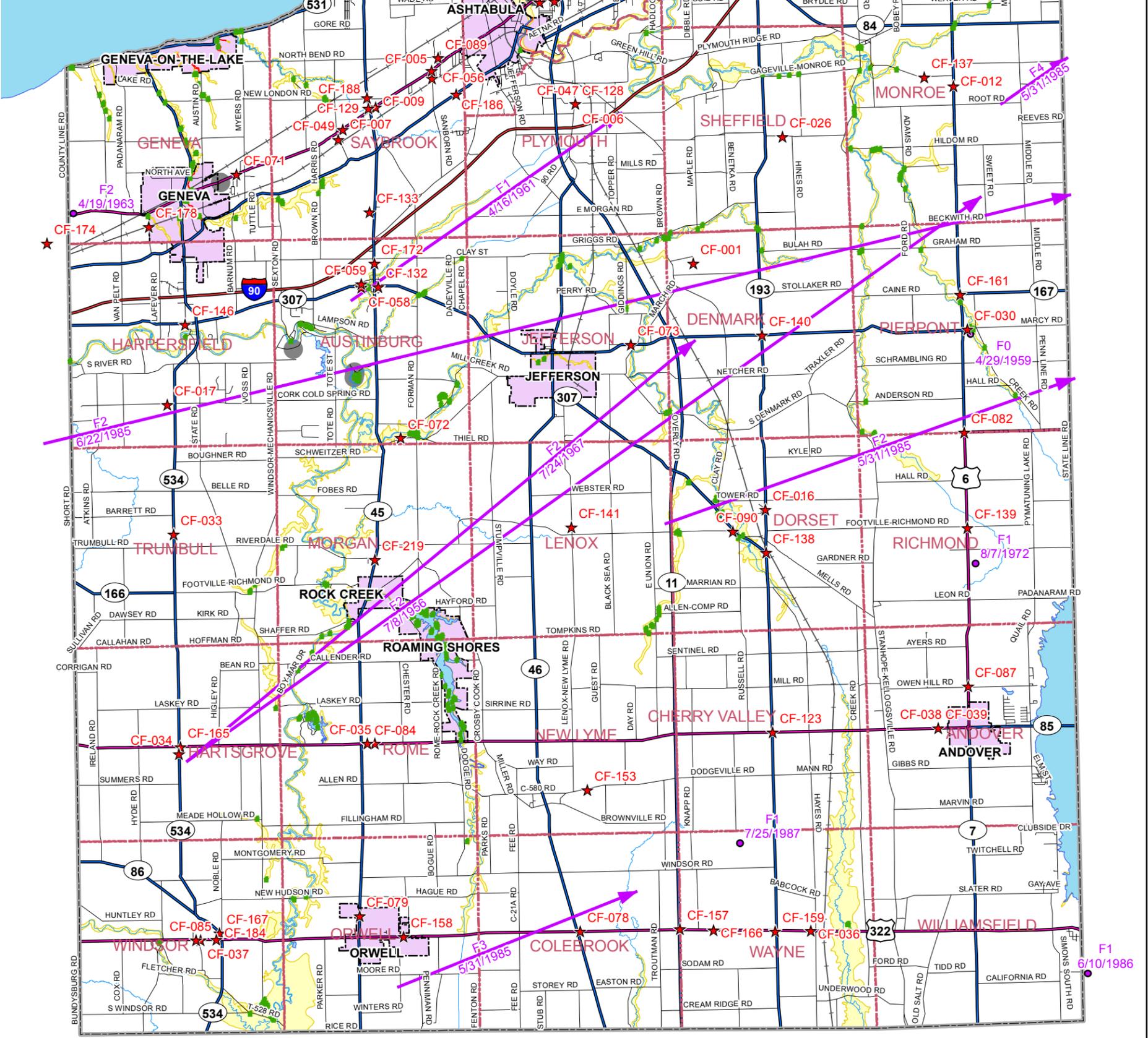
A waterspout was observed on Lake Erie north of Conneaut. No damage occurred.

**Appendix F:
Multi-Hazard Maps**

Critical Facility locations based on geocoded coordinates.
 At-Risk structures for entire county: 438
 At-Risk structures for unincorporated areas: 279



Data Sources:
 Ohio Department of Natural Resources (ODNR)
 Ohio Department of Transportation (ODOT)



Legend

Map intended for reference only

- ★ Critical Facilities
- At-Risk Structures
- Repetitive Loss Areas
- Tornado Points
- ▭ County Line
- ▭ Township Lines
- ▭ Municipalities
- Interstate Route
- U.S. Route
- State Route
- Roads - County
- Railroads
- Waterways
- Lakes
- Floodway
- Floodplain - 100 year
- Tornado Paths

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ASHTABULA COUNTY, OHIO
MULTI-HAZARD MAP OF ASHTABULA COUNTY
 ASHTABULA COUNTY - COUNTYWIDE ALL NATURAL HAZARDS MITIGATION PLAN
MULTI-HAZARD MAP: ASHTABULA01

Date: September 19, 2005
 Scale: 1" = 15,000'
 Job No: 2005-0318

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AHSTABULA COUNTY, OHIO MULTI-HAZARD MAP OF ROCK CREEK, OHIO

ASHTABULA COUNTY - COUNTYWIDE ALL
 NATURAL HAZARDS MITIGATION PLAN
 MULTI-HAZARD MAP: ASHTABULA11

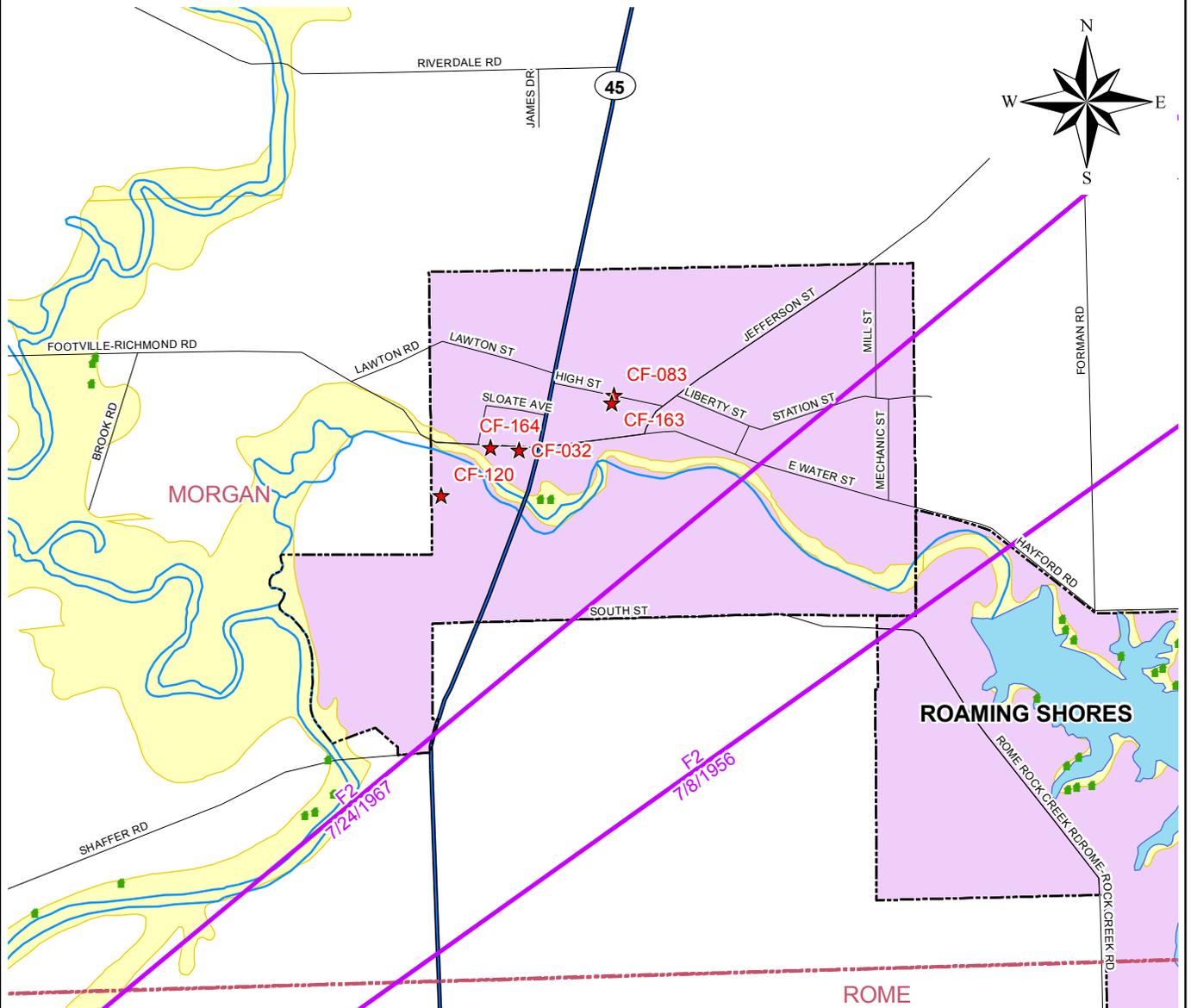
Date: Sept. 19, 2005

Job No. 2005-0318

Scale: 1" - 2,000'

Critical Facility locations based on geocoded coordinates.
 At-Risk structures for the Village of Rock Creek: 2

Map intended for reference only



Legend

- | | | | |
|-------------------------|------------------|---------------------|-------------------------|
| ★ Critical Facilities | ▭ County Line | — Interstate Route | — Railroads |
| ■ At-Risk Structures | ▭ Township Lines | — U.S. Route | — Waterways |
| ● Repetitive Loss Areas | ▭ Municipalities | — State Route | ■ Lakes |
| ● TornadoPoints | | — Roads - County | ■ Floodway |
| ➤ Tornado Paths | | — Roads - Municipal | ■ Floodplain - 100 year |

Data Sources: Ohio Department of Transportation (ODOT), & Ohio Department of Natural Resources (ODNR)



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AHSTABULA COUNTY, OHIO
**MULTI-HAZARD MAP OF
 ROAMING SHORES, OHIO**
 ASHTABULA COUNTY - COUNTYWIDE ALL
 NATURAL HAZARDS MITIGATION PLAN
 MULTI-HAZARD MAP: ASHTABULA10

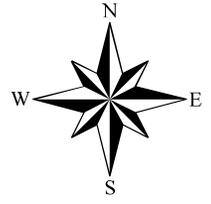
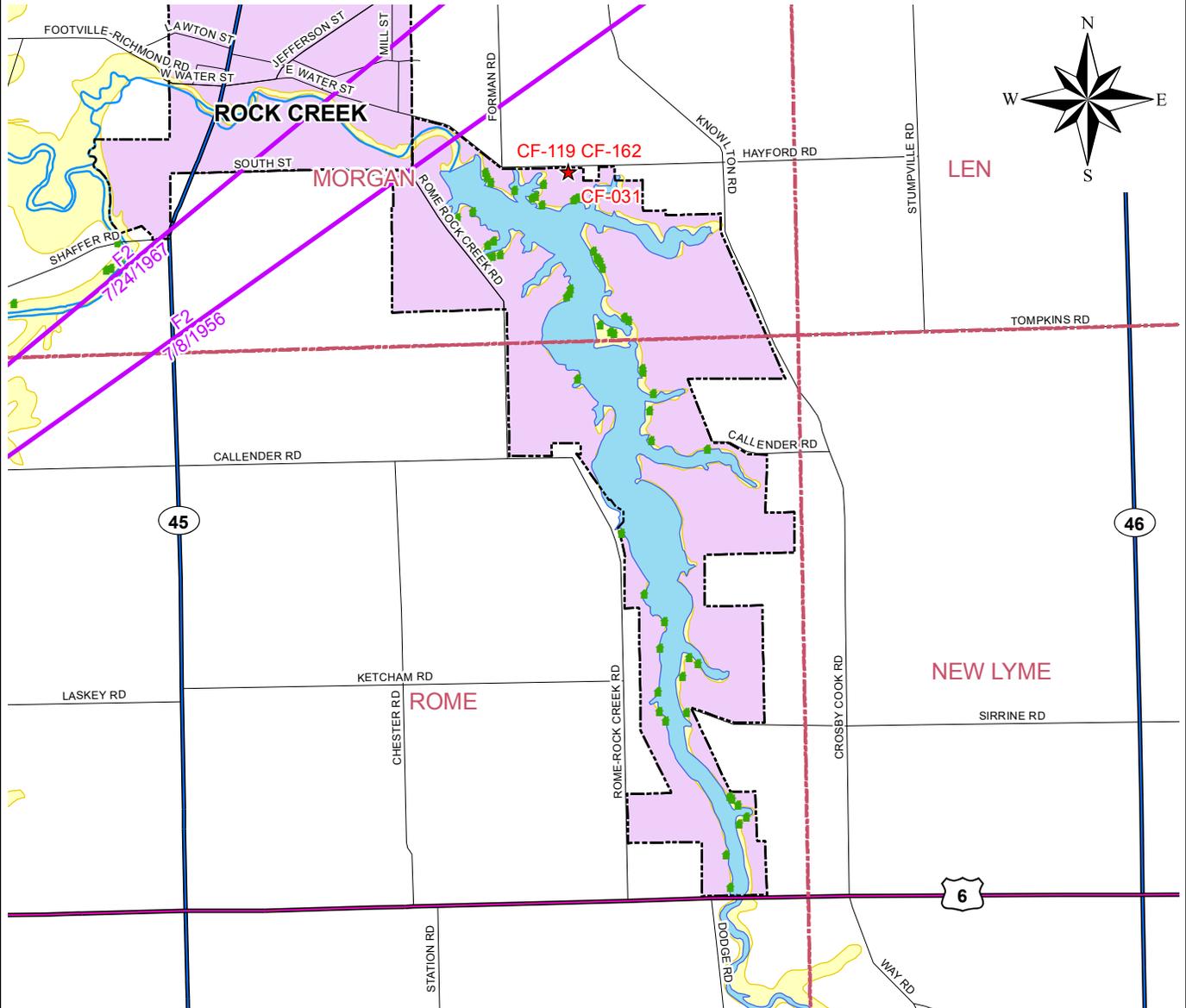
Date: Sept. 19, 2005

Job No. 2005-0318

Scale: 1" - 4,000'

Critical Facility locations based on geocoded coordinates.
 At-Risk structures for the Village of Roaming Shores: 55

Map intended for reference only



Legend

- | | | | |
|-------------------------|----------------------|---------------------|-------------------------|
| ★ Critical Facilities | ▭ County Line | — Interstate Route | — Railroads |
| ■ At-Risk Structures | - - - Township Lines | — U.S. Route | — Waterways |
| ● Repetitive Loss Areas | ▨ Municipalities | — State Route | ■ Lakes |
| ● TornadoPoints | — Roads - County | — Roads - Municipal | ■ Floodway |
| ➤ Tornado Paths | | | ■ Floodplain - 100 year |

Data Sources: Ohio Department of Transportation (ODOT), & Ohio Department of Natural Resources (ODNR)



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AHSTABULA COUNTY, OHIO
**MULTI-HAZARD MAP OF
 RICHMOND TOWNSHIP, OHIO**
 ASHTABULA COUNTY - COUNTYWIDE ALL
 NATURAL HAZARDS MITIGATION PLAN
 MULTI-HAZARD MAP: ASHTABULA13

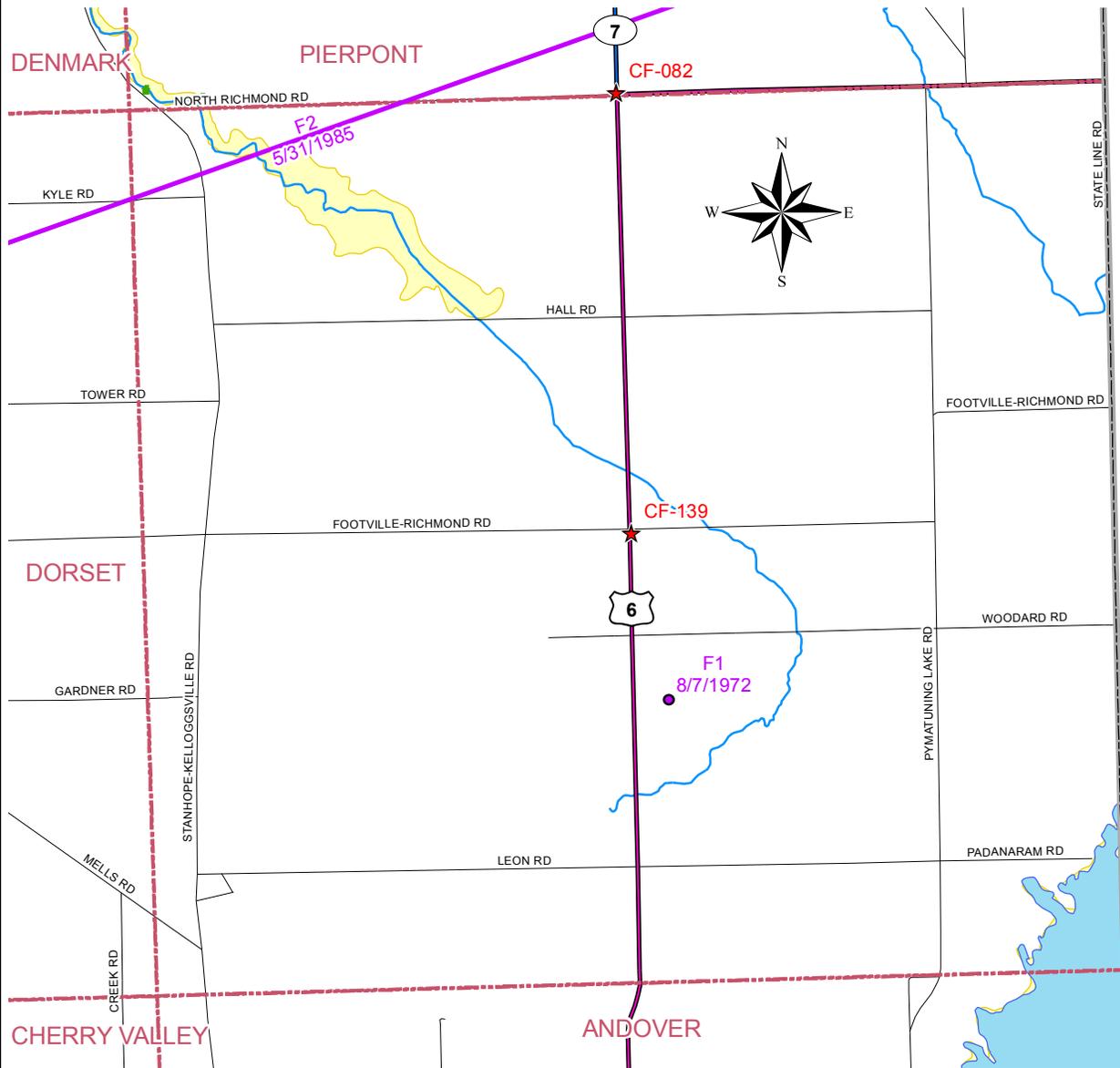
Date: Sept. 19, 2005

Job No. 2005-0318

Scale: 1" - 5,000'

Critical Facility locations based on geocoded coordinates.
 At-Risk structures for the Township of Richmond: 0

Map intended for reference only



Legend

- | | | | |
|-------------------------|------------------|---------------------|-------------------------|
| ★ Critical Facilities | ▭ County Line | — Interstate Route | — Railroads |
| ■ At-Risk Structures | ▭ Township Lines | — U.S. Route | — Waterways |
| ● Repetitive Loss Areas | ▭ Municipalities | — State Route | ■ Lakes |
| ● TornadoPoints | | — Roads - County | ■ Floodway |
| ➤ Tornado Paths | | — Roads - Municipal | ■ Floodplain - 100 year |

Data Sources: Ohio Department of Transportation (ODOT), & Ohio Department of Natural Resources (ODNR)



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AHSTABULA COUNTY, OHIO MULTI-HAZARD MAP OF ORWELL, OHIO

ASHTABULA COUNTY - COUNTYWIDE ALL
 NATURAL HAZARDS MITIGATION PLAN
 MULTI-HAZARD MAP: ASHTABULA09

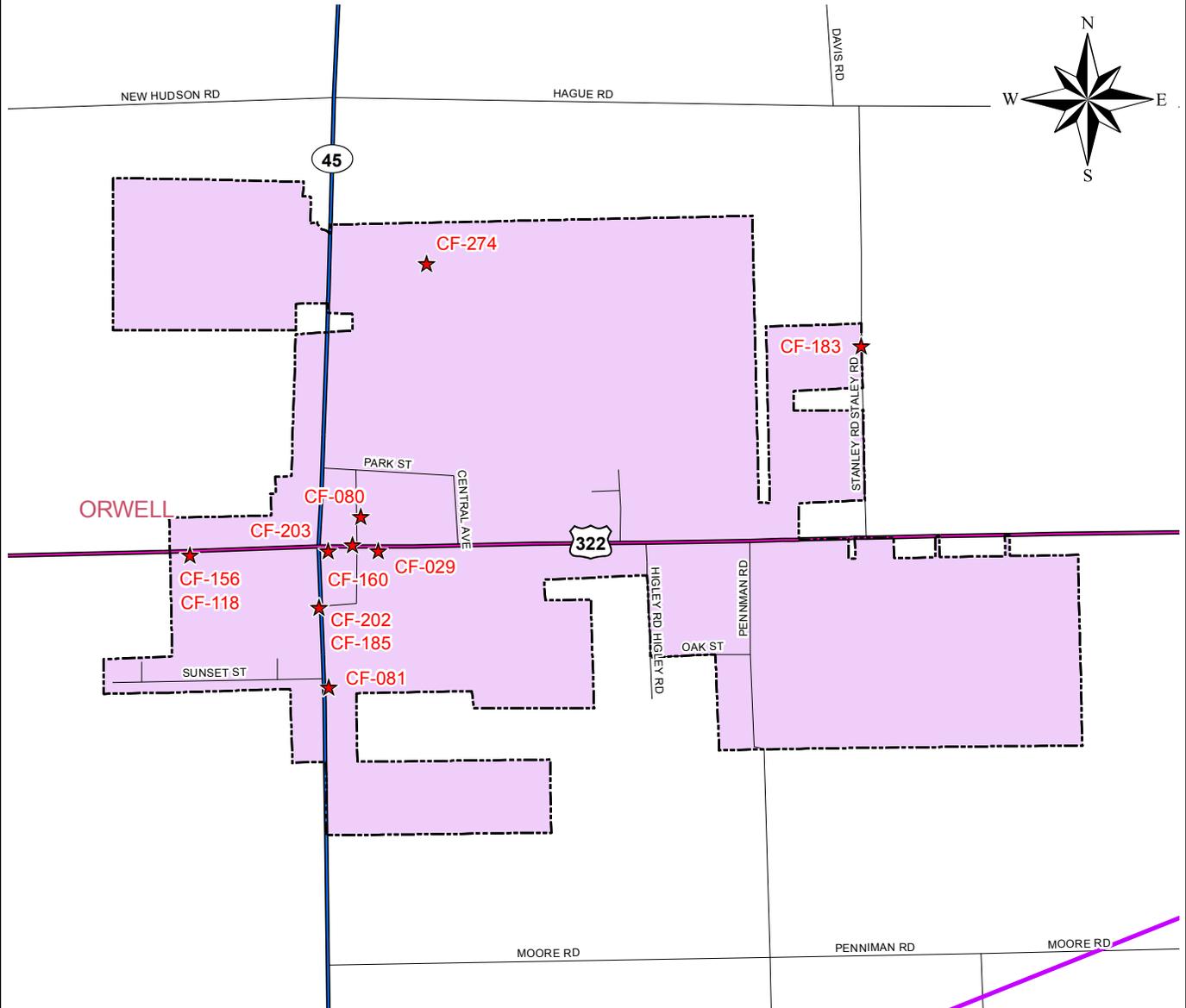
Date: Sept. 19, 2005

Job No. 2005-0318

Scale: 1" - 2,000'

Critical Facility locations based on geocoded coordinates.
 At-Risk structures for the Village of Orwell: 0

Map intended for reference only



Legend

- | | | | |
|-------------------------|------------------|---------------------|-------------------------|
| ★ Critical Facilities | ▭ County Line | — Interstate Route | — Railroads |
| ■ At-Risk Structures | ▭ Township Lines | — U.S. Route | — Waterways |
| ● Repetitive Loss Areas | ▭ Municipalities | — State Route | ■ Lakes |
| ● TornadoPoints | | — Roads - County | ■ Floodway |
| ➤ Tornado Paths | | — Roads - Municipal | ■ Floodplain - 100 year |

Data Sources: Ohio Department of Transportation (ODOT), & Ohio Department of Natural Resources (ODNR)



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AHSTABULA COUNTY, OHIO
**MULTI-HAZARD MAP OF
 NORTH KINGSVILLE, OHIO**
 ASHTABULA COUNTY - COUNTYWIDE ALL
 NATURAL HAZARDS MITIGATION PLAN
 MULTI-HAZARD MAP: ASHTABULA08

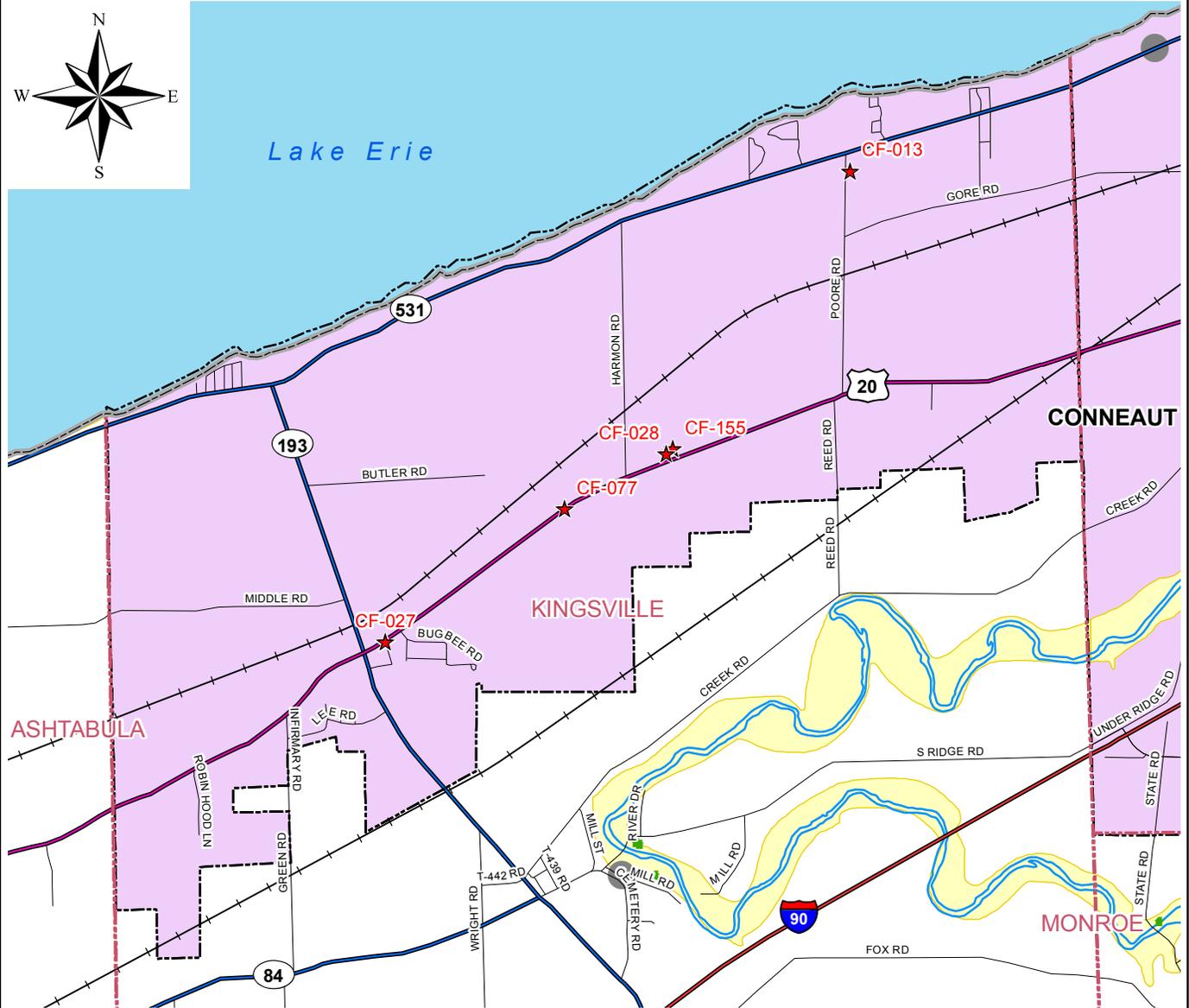
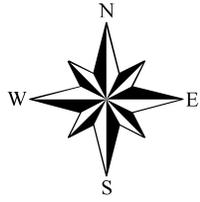
Date: Sept. 19, 2005

Job No. 2005-0318

Scale: 1" - 4,000'

Critical Facility locations based on geocoded coordinates.
 At-Risk structures for the Village of North Kingsville: 0

Map intended for reference only



Legend

- | | | | |
|-------------------------|----------------------|---------------------|-------------------------|
| ★ Critical Facilities | ▭ County Line | — Interstate Route | — Railroads |
| ■ At-Risk Structures | - - - Township Lines | — U.S. Route | — Waterways |
| ● Repetitive Loss Areas | ▭ Municipalities | — State Route | ■ Lakes |
| ● TornadoPoints | | — Roads - County | ■ Floodway |
| ➤ Tornado Paths | | — Roads - Municipal | ■ Floodplain - 100 year |

Data Sources: Ohio Department of Transportation (ODOT), & Ohio Department of Natural Resources (ODNR)



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AHSTABULA COUNTY, OHIO MULTI-HAZARD MAP OF JEFFERSON, OHIO

ASHTABULA COUNTY - COUNTYWIDE ALL
 NATURAL HAZARDS MITIGATION PLAN
 MULTI-HAZARD MAP: ASHTABULA07

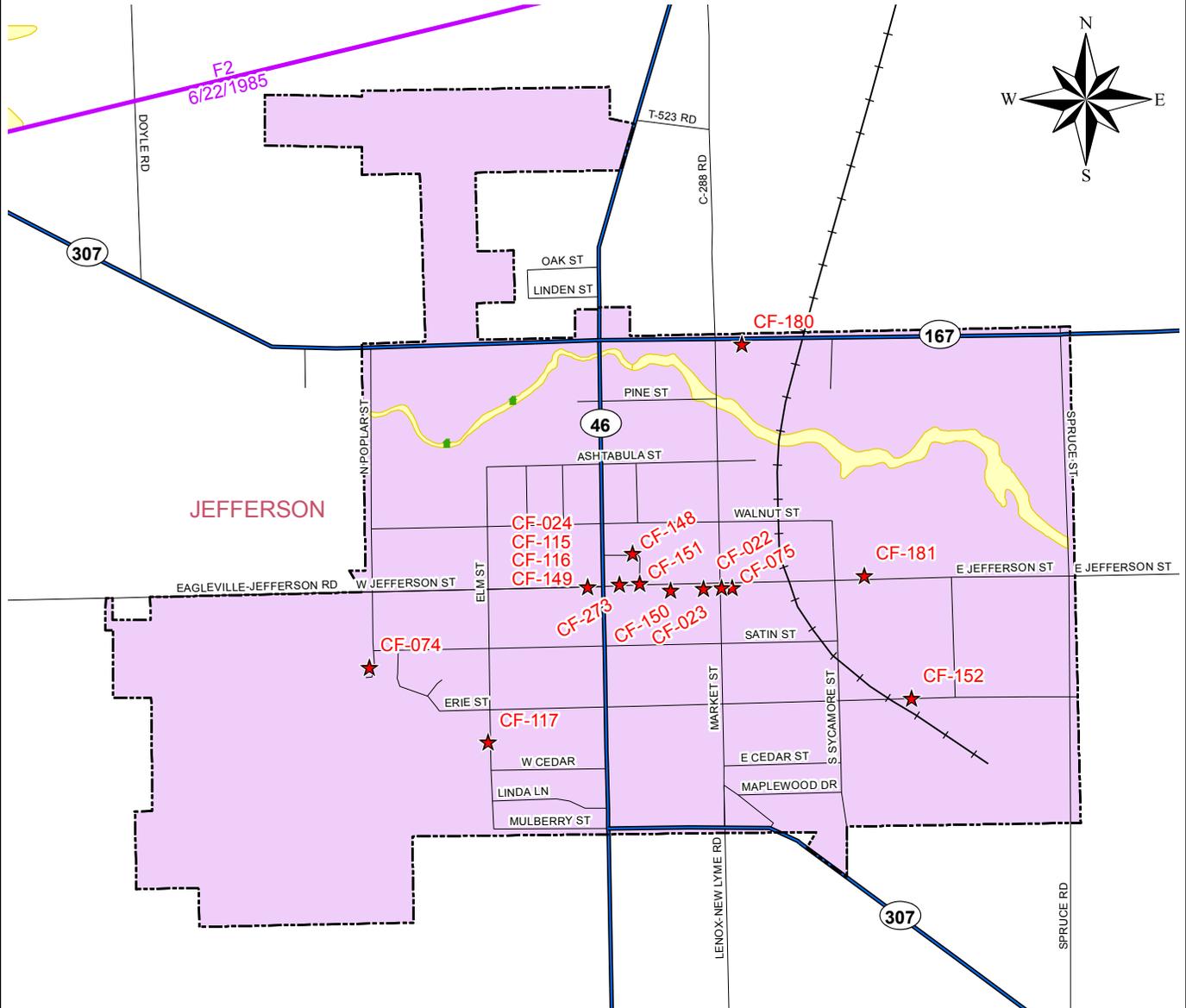
Date: Sept. 19, 2005

Job No. 2005-0318

Scale: 1" - 2,000'

Critical Facility locations based on geocoded coordinates.
 At-Risk structures for the Village of Jefferson: 2

Map intended for reference only



Legend

- | | | | |
|-------------------------|------------------|---------------------|-------------------------|
| ★ Critical Facilities | ▭ County Line | — Interstate Route | — Railroads |
| ■ At-Risk Structures | ▭ Township Lines | — U.S. Route | — Waterways |
| ● Repetitive Loss Areas | ▭ Municipalities | — State Route | ■ Lakes |
| ● TornadoPoints | | — Roads - County | ■ Floodway |
| ➤ Tornado Paths | | — Roads - Municipal | ■ Floodplain - 100 year |

Data Sources: Ohio Department of Transportation (ODOT), & Ohio Department of Natural Resources (ODNR)



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AHSTABULA COUNTY, OHIO MULTI-HAZARD MAP OF GENEVA, OHIO

ASHTABULA COUNTY - COUNTYWIDE ALL
 NATURAL HAZARDS MITIGATION PLAN
 MULTI-HAZARD MAP: ASHTABULA05

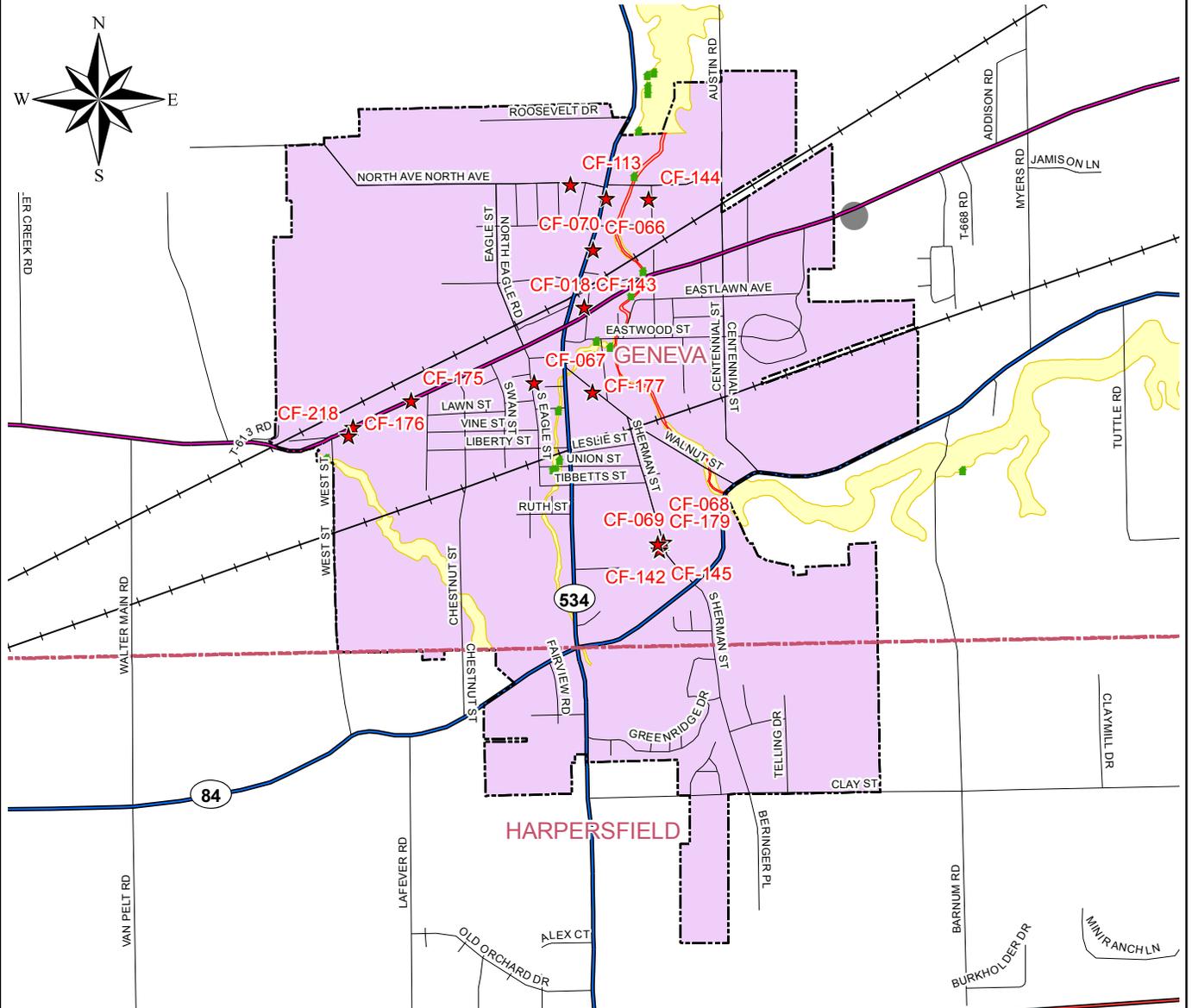
Date: Sept. 19, 2005

Job No. 2005-0318

Scale: 1" - 3,000'

Critical Facility locations based on geocoded coordinates.
 At-Risk structures for the City of Geneva: 12

Map intended for reference only



Legend

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|-------------------------|----------------------|---------------------|-------------------------|
| ★ Critical Facilities | ▭ County Line | — Interstate Route | — Railroads |
| ■ At-Risk Structures | - - - Township Lines | — U.S. Route | — Waterways |
| ● Repetitive Loss Areas | ▭ Municipalities | — State Route | ■ Lakes |
| ● TornadoPoints | | — Roads - County | ■ Floodway |
| ➤ Tornado Paths | | — Roads - Municipal | ■ Floodplain - 100 year |

Data Sources: Ohio Department of Transportation (ODOT), & Ohio Department of Natural Resources (ODNR)



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AHSTABULA COUNTY, OHIO
**MULTI-HAZARD MAP OF
 GENEVA ON THE LAKE, OHIO**
 ASHTABULA COUNTY - COUNTYWIDE ALL
 NATURAL HAZARDS MITIGATION PLAN
 MULTI-HAZARD MAP: ASHTABULA06

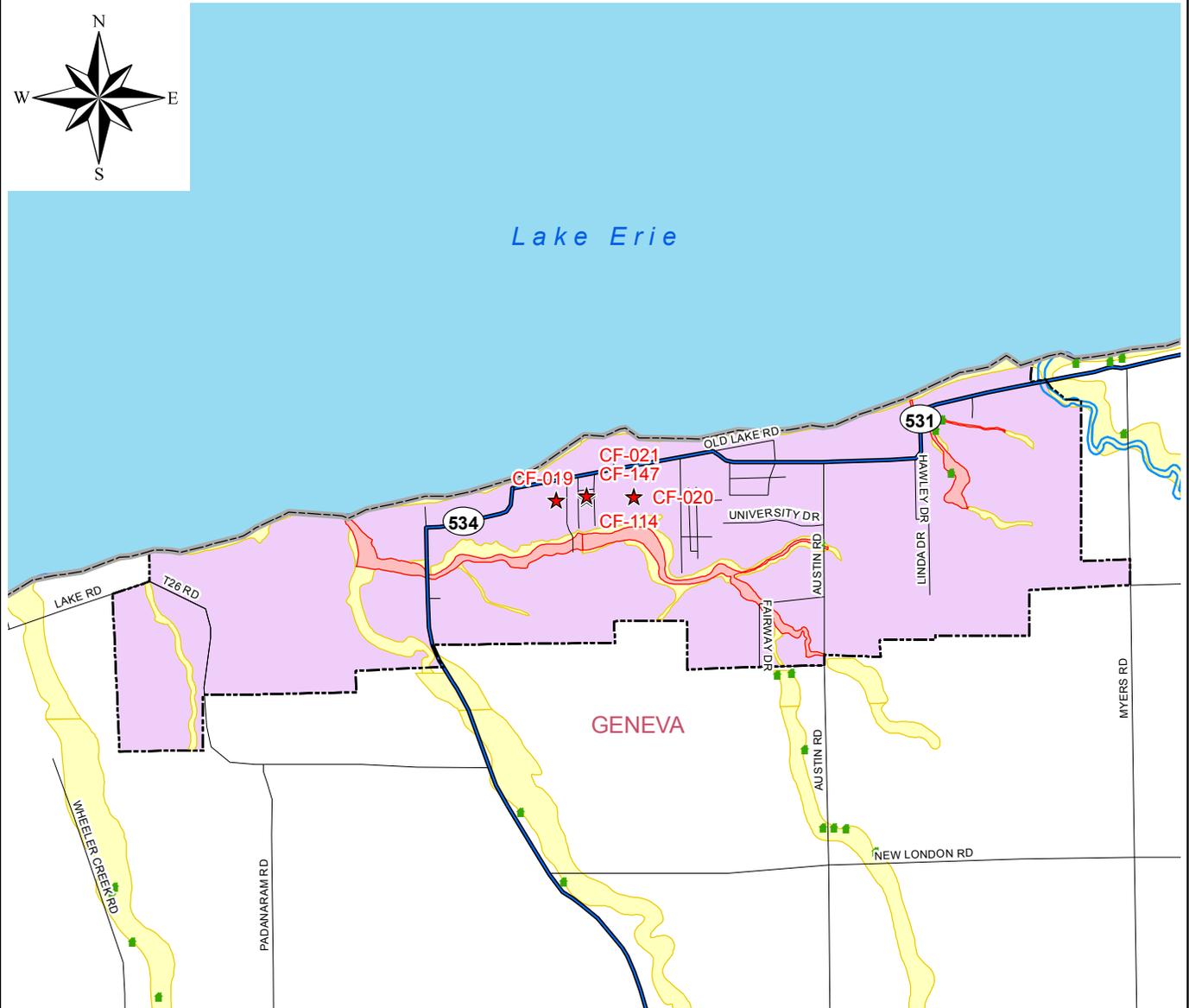
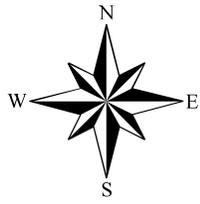
Date: Sept. 19, 2005

Job No. 2005-0318

Scale: 1" - 3,000'

Critical Facility locations based on geocoded coordinates.
 At-Risk structures for the Village of Geneva on the Lake: 4

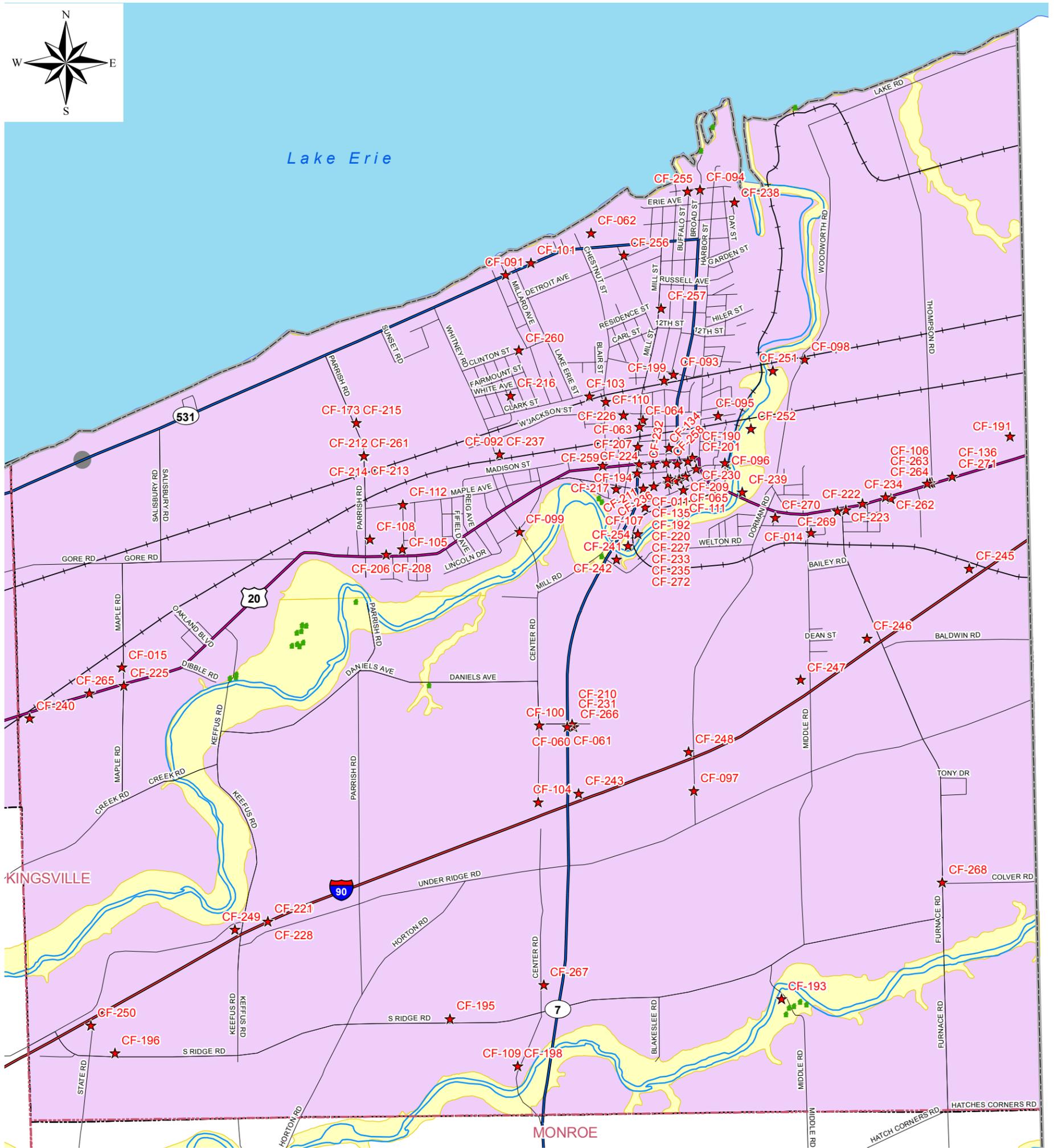
Map intended for reference only



Legend

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|-------------------------|------------------|---------------------|-------------------------|
| ★ Critical Facilities | ▭ County Line | — Interstate Route | — Railroads |
| ■ At-Risk Structures | ▭ Township Lines | — U.S. Route | — Waterways |
| ● Repetitive Loss Areas | ▭ Municipalities | — State Route | ■ Lakes |
| ● TornadoPoints | | — Roads - County | ■ Floodway |
| ➔ Tornado Paths | | — Roads - Municipal | ■ Floodplain - 100 year |

Data Sources: Ohio Department of Transportation (ODOT), & Ohio Department of Natural Resources (ODNR)



Legend

- ★ Critical Facilities
- At-Risk Structures
- Repetitive Loss Areas
- TornadoPoints
- ➔ Tornado Paths
- ▭ County Line
- ▭ Township Lines
- ▭ Municipalities
- Interstate Route
- U.S. Route
- State Route
- Roads - County
- Roads - Municipal
- Railroads
- Waterways
- Lakes
- Floodway
- Floodplain - 100 year

Data Sources: Ohio Department of Transportation (ODOT), & Ohio Department of Natural Resources (ODNR)

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ASHTABULA COUNTY, OHIO
**MULTI-HAZARD MAP OF
CONNEAUT, OHIO**
ASHTABULA COUNTY - COUNTYWIDE ALL
NATURAL HAZARDS MITIGATION PLAN
MULTI-HAZARD MAP: ASHTABULA04

Date: Sept. 19, 2005
Scale: 1" = 3,000'
Job No: 2005-0318



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AHSTABULA COUNTY, OHIO
**MULTI-HAZARD MAP OF
 AUSTINBURG TOWNSHIP, OHIO**
 ASHTABULA COUNTY - COUNTYWIDE ALL
 NATURAL HAZARDS MITIGATION PLAN
 MULTI-HAZARD MAP: ASHTABULA12

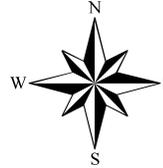
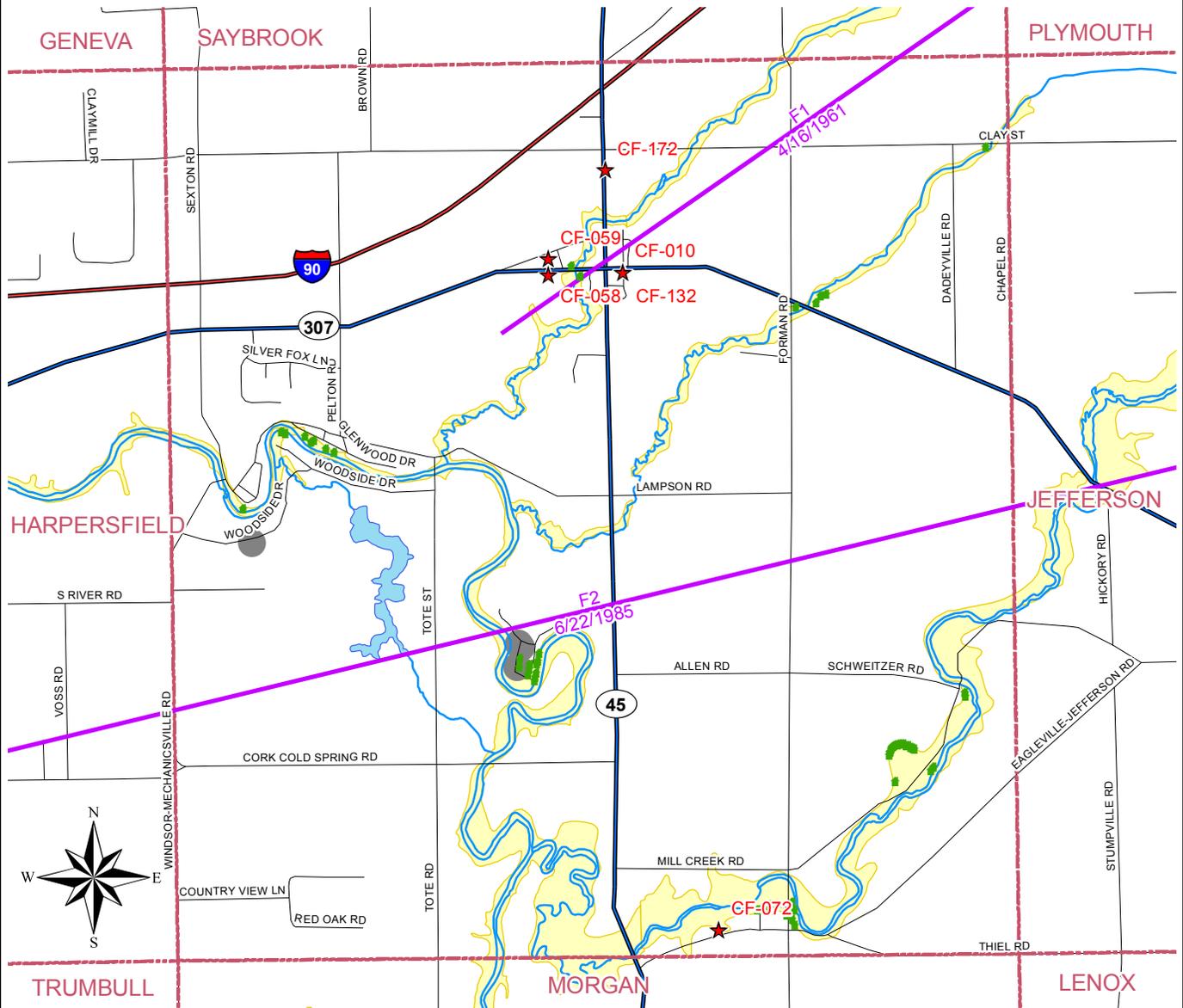
Date: Sept. 19, 2005

Job No. 2005-0318

Scale: 1" - 5,000'

Critical Facility locations based on geocoded coordinates.
 At-Risk structures for the Township of Austinburg: 57

Map intended for reference only



Legend

- | | | | |
|-------------------------|----------------------|---------------------|-------------------------|
| ★ Critical Facilities | ▭ County Line | — Interstate Route | — Railroads |
| ■ At-Risk Structures | - - - Township Lines | — U.S. Route | — Waterways |
| ● Repetitive Loss Areas | ▭ Municipalities | — State Route | ■ Lakes |
| ● TornadoPoints | | — Roads - County | ■ Floodway |
| ➡ Tornado Paths | | — Roads - Municipal | ■ Floodplain - 100 year |

Data Sources: Ohio Department of Transportation (ODOT), & Ohio Department of Natural Resources (ODNR)



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AHSTABULA COUNTY, OHIO MULTI-HAZARD MAP OF ASHTABULA, OHIO

ASHTABULA COUNTY - COUNTYWIDE ALL
 NATURAL HAZARDS MITIGATION PLAN
 MULTI-HAZARD MAP: ASHTABULA03

Date: Sept. 19, 2005

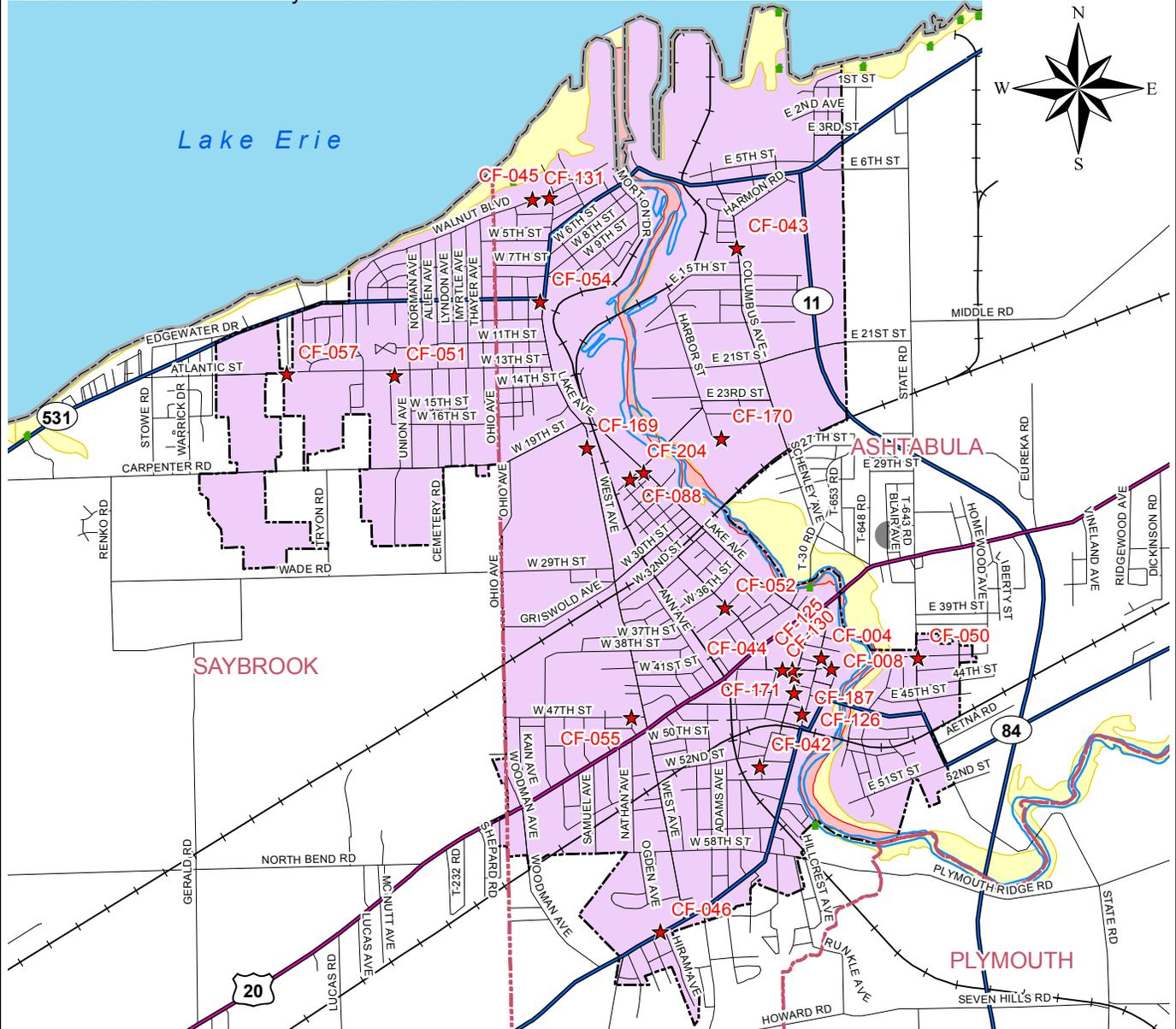
Job No. 2005-0318

Scale: 1" - 4,000'

Critical Facility locations based on geocoded coordinates.

Map intended for reference only

At-Risk structures for the City of Ashtabula: 5



Legend

- | | | | |
|-------------------------|----------------------|---------------------|-------------------------|
| ★ Critical Facilities | ▭ County Line | — Interstate Route | — Railroads |
| ■ At-Risk Structures | - - - Township Lines | — U.S. Route | — Waterways |
| ● Repetitive Loss Areas | ▭ Municipalities | — State Route | ■ Lakes |
| ● TornadoPoints | | — Roads - County | ■ Floodway |
| ➤ Tornado Paths | | — Roads - Municipal | ■ Floodplain - 100 year |



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AHSTABULA COUNTY, OHIO MULTI-HAZARD MAP OF ANDOVER, OHIO

ASHTABULA COUNTY - COUNTYWIDE ALL
 NATURAL HAZARDS MITIGATION PLAN
 MULTI-HAZARD MAP: ASHTABULA02

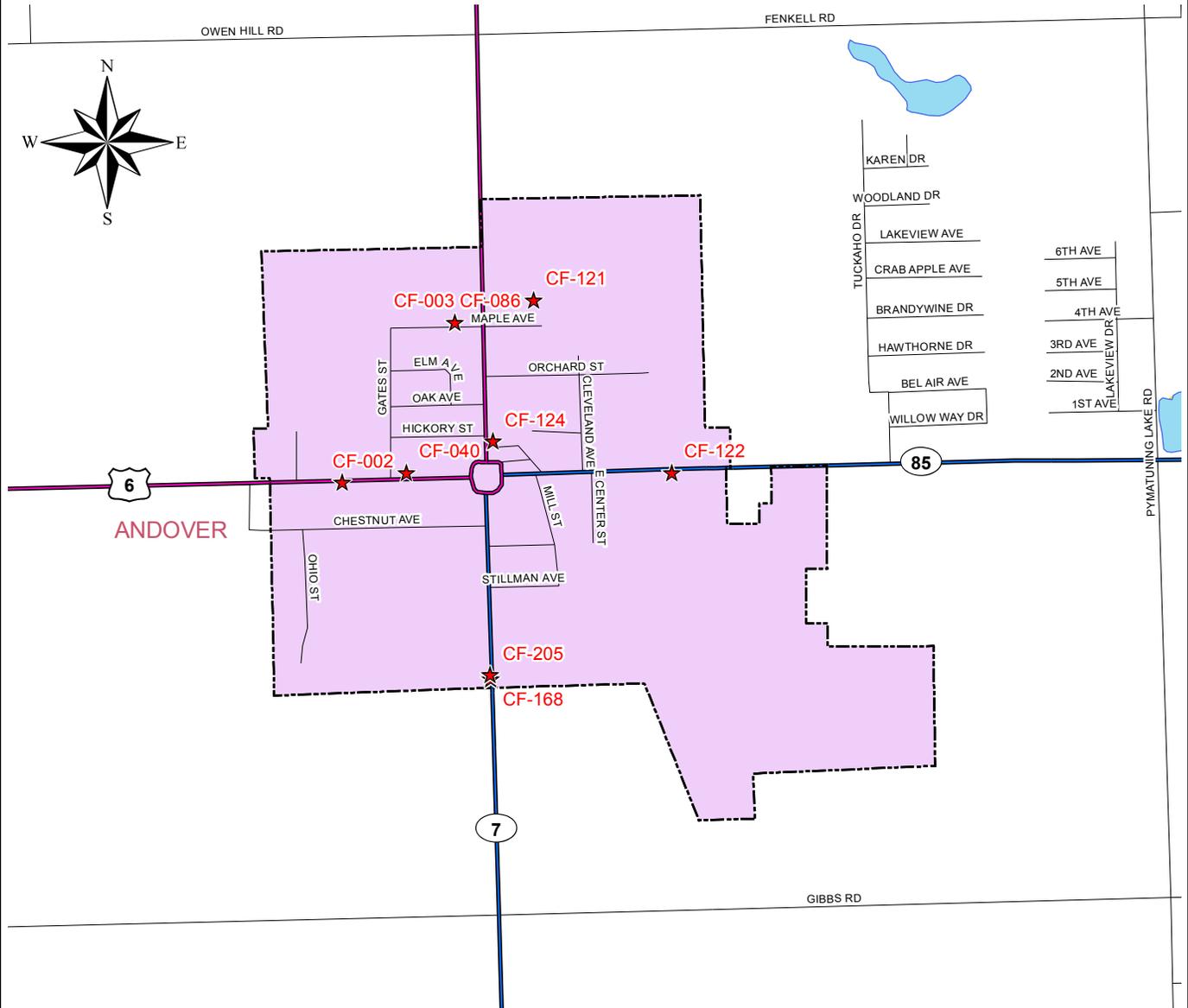
Date: Sept. 19, 2005

Job No. 2005-0318

Scale: 1" - 2,000'

Critical Facility locations based on geocoded coordinates.
 At-Risk structures for the Village of Andover: 5

Map intended for reference only



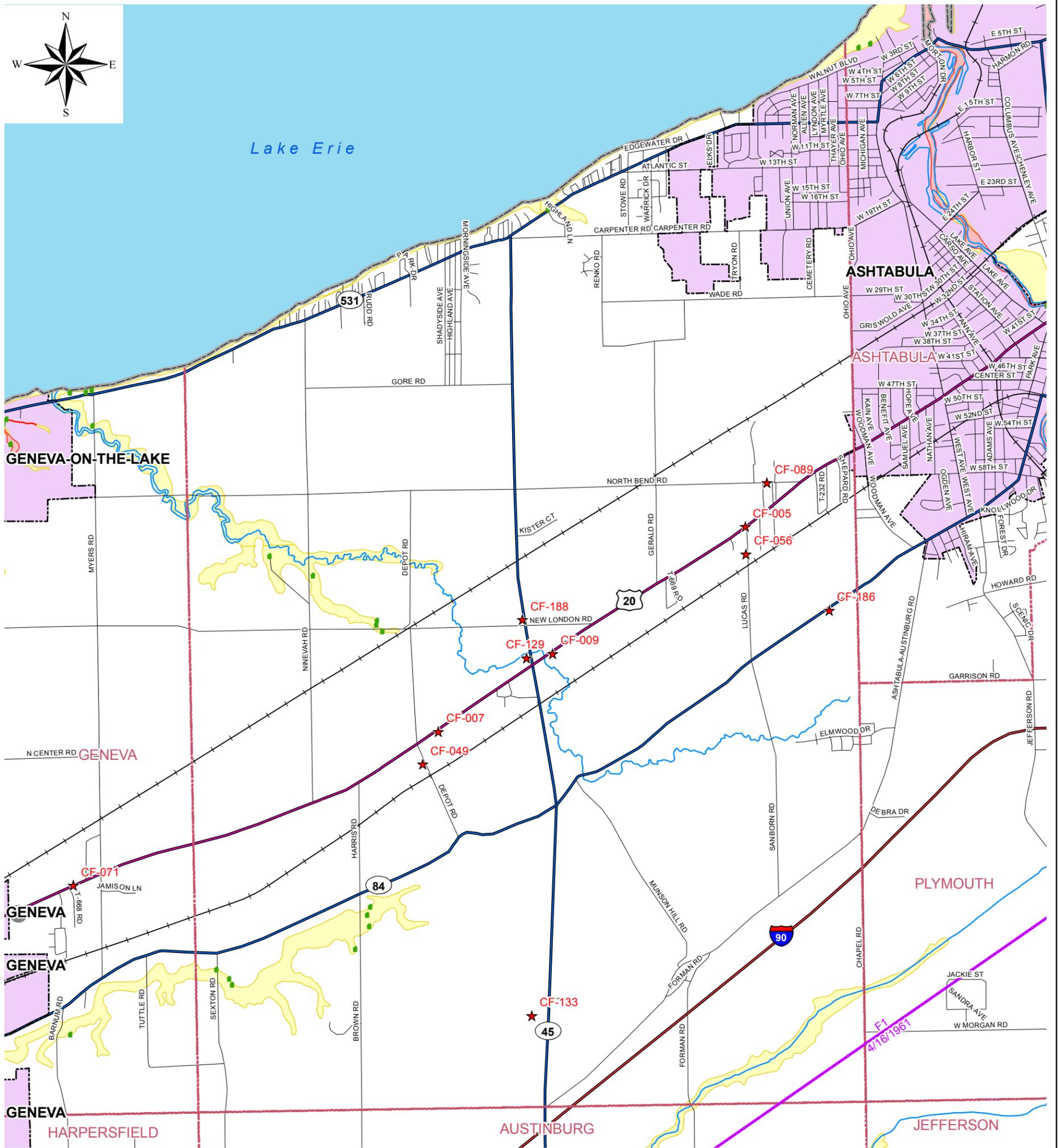
Legend

- | | | | |
|-------------------------|------------------|---------------------|-------------------------|
| ★ Critical Facilities | ▭ County Line | — Interstate Route | — Railroads |
| ■ At-Risk Structures | ▭ Township Lines | — U.S. Route | — Waterways |
| ● Repetitive Loss Areas | ▭ Municipalities | — State Route | ■ Lakes |
| ● TornadoPoints | | — Roads - County | ■ Floodway |
| ➔ Tornado Paths | | — Roads - Municipal | ■ Floodplain - 100 year |

Data Sources: Ohio Department of Transportation (ODOT), & Ohio Department of Natural Resources (ODNR)

Critical Facility locations based on geocoded coordinates.
At-Risk structures for the Township of Saybrook: 13

Map intended for reference only



Legend

- ★ Critical Facilities
- At-Risk Structures
- Repetitive Loss Areas
- TornadoPoints
- ➔ Tornado Paths
- ▭ County Line
- ▭ Township Lines
- ▭ Municipalities
- Interstate Route
- U.S. Route
- State Route
- Roads - County
- Roads - Municipal
- Railroads
- Waterways
- Lakes
- Floodway
- Floodplain - 100 year

Data Sources: Ohio Department of Transportation (ODOT), & Ohio Department of Natural Resources (ODNR)

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ASHTABULA COUNTY, OHIO
MULTI-HAZARD MAP OF SAYBROOK TOWNSHIP, OHIO
ASHTABULA COUNTY - COUNTYWIDE ALL NATURAL HAZARDS MITIGATION PLAN
MULTI-HAZARD MAP: ASHTABULA14

Date: Sept. 19, 2005
Scale: 1" = 4,000'
Job No: 2005-0318

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**Appendix G:
Critical Facilities List**

CF-ID	TYPE	Name	ADDRESS	CITY	ZIP
CF-001	Airport	Ashtabula County Airport	2382 Airport Rd.	Jefferson	44047
CF-002	Fire/EMS/Police	Andover Fire Dept	257 W. Main St	Andover	44003
CF-003	Fire/EMS/Police	Andover Village Police Dept	134 Maple St	Andover	44003
CF-004	Fire/EMS/Police	Ashtabula City Fire Dept.	4326 Main Ave	Ashtabula	44004
CF-005	Fire/EMS/Police	Ashtabula Township Fire Dept.	2718 North Ridge Rd East	Ashtabula	44004
CF-006	Fire/EMS/Police	Plymouth Fire Dept	1001 Plymouth Rd	Ashtabula	44004
CF-007	Fire/EMS/Police	Saybrook Township Fire Dept	5714 N. Ridge West	Ashtabula	44004
CF-008	Fire/EMS/Police	Ashtabula City Justice Center	110 W. 44th St	Ashtabula	44004
CF-009	Fire/EMS/Police	Ohio State Highway Patrol	4860 N. Ridge W.	Ashtabula	44004
CF-010	Fire/EMS/Police	Austinburg Township Fire Dept	2800 SR 307	Austinburg	44010
CF-011	Fire/EMS/Police	Conneaut City Fire and Police Dept	294 Main St	Conneaut	44030
CF-012	Fire/EMS/Police	Monroe Township Fire Dept	4095 Center Rd	Conneaut	44030
CF-013	Fire/EMS/Police	North Kingville Village Fire Dept Stn #2	7676 Poore Rd	Conneaut	44030
CF-014	Fire/EMS/Police	Conneaut Fire Station #3	392 Middle Road	Conneaut	44030
CF-015	Fire/EMS/Police	Conneaut Fire Station #4	359 North Amboy Road	Conneaut	44030
CF-016	Fire/EMS/Police	Dorset Township Fire Dept	2405 SR 193	Dorset	44032
CF-017	Fire/EMS/Police	Harpersfield Township Fire Dept Hall #2	5636 Cork Cold Springs Rd	Geneva	44041
CF-018	Fire/EMS/Police	Geneva City Fire and Police Dept.	44 N. Forest St	Geneva	44041
CF-019	Fire/EMS/Police	Harpersfield Township Fire Dept Hall #1	5430 SR 534	Geneva	44041
CF-020	Fire/EMS/Police	Geneva-on-the-Lake Fire Dept.	4931 S. Warner Dr.	Geneva-on-the-Lake	44041
CF-021	Fire/EMS/Police	Geneva-on-the-Lake Police Dept.	4964 S. Spencer Dr	Geneva-on-the-Lake	44041
CF-022	Fire/EMS/Police	Jefferson Village Fire Dept	98 E. Jefferson St	Jefferson	44047
CF-023	Fire/EMS/Police	Jefferson Village Police Dept	86 E. Jefferson St	Jefferson	44047
CF-024	Fire/EMS/Police	Ashtabula County Sheriff's Dept.	25 W. Jefferson St.	Jefferson	44047
CF-025	Fire/EMS/Police	Kingsville Township Fire Dept	3130 Main St	Kingsville	44048
CF-026	Fire/EMS/Police	Sheffield Township Fire Dept	3636 Sheffield-Monroe Rd	Kingsville	44048
CF-027	Fire/EMS/Police	North Kingville Village Fire Dept Stn #1	6571 Church St.	North Kingsville	44068
CF-028	Fire/EMS/Police	North Kingsville Police Dept	3541 E. Center St	North Kingsville	44068
CF-029	Fire/EMS/Police	Orwell Village Fire and Police Dept	78 E Main St	Orwell	44076
CF-030	Fire/EMS/Police	Pierpont Fire Dept	6006 Marcy Rd	Pierpont	44082
CF-031	Fire/EMS/Police	Roaming Shores Police Dept	2500 Hayford Rd	Roaming Shores	44085
CF-032	Fire/EMS/Police	Morgan Hose Fire Dept.	3033 E. Water St.	Rock Creek	44084
CF-033	Fire/EMS/Police	Trumbull Township Fire Dept	2443 SR 534	Rock Creek	44084
CF-034	Fire/EMS/Police	Hartsgrove Township Fire Dept	5321 SR 534	Rome	44085
CF-035	Fire/EMS/Police	Rome Township Fire Dept	3162 Route 6 E	Rome	44085
CF-036	Fire/EMS/Police	Wayne Township Fire Dept	3787 SR 322	Williamsfield	44093
CF-037	Fire/EMS/Police	Windsor Township Fire Dept	5388 SR 322 West	Windsor	44099
CF-038	Schools/Churches	Pymatuning Valley High School	5571 Rt 6 W, Po Box 1180	Andover	44003-1180
CF-039	Schools/Churches	Pymatuning Valley Middle	5571 Rt 6 W, Po Box 1180	Andover	44003-1180
CF-040	Schools/Churches	Pymatuning Valley Primary Ele	190 W Main	Andover	44003-1180
CF-041	Schools/Churches	Edgewood Sr High School	2428 Blake Rd	Ashtabula	44004-4598
CF-042	Schools/Churches	Chestnut Elementary School	5321 Chestnut Ave	Ashtabula	44004-7068
CF-043	Schools/Churches	Columbus Junior High School	1326 Columbus Ave	Ashtabula	44004-3659
CF-044	Schools/Churches	Lakeside High School	401 W 44th St	Ashtabula	44004-6807
CF-045	Schools/Churches	Lakeside 9	221 Lake Ave	Ashtabula	44004
CF-046	Schools/Churches	Mckinsey Elementary School	1113 Bunker Hill Rd	Ashtabula	44004-7610
CF-047	Schools/Churches	Plymouth Elementary School	1002 Plymouth Rd	Ashtabula	44004
CF-048	Schools/Churches	Ridgeview Elementary School	3456 Liberty St	Ashtabula	44004-5994

CF-049	Schools/Churches	Saybrook Elementary School	7911 Depot Rd	Ashtabula	44004-9487
CF-050	Schools/Churches	State Road Elementary School	4200 State Rd	Ashtabula	44004-6017
CF-051	Schools/Churches	Thomas Jefferson Elementary S	2630 W 13th St	Ashtabula	44004-2405
CF-052	Schools/Churches	Thurgood Marshall Elementary	3703 Station Ave	Ashtabula	44004-5630
CF-053	Schools/Churches	Wallace H Braden Junior High	3436 Edgewood Dr	Ashtabula	44004-5993
CF-054	Schools/Churches	Washington Elementary School	917 Lake Ave	Ashtabula	44004-2925
CF-055	Schools/Churches	West Junior High School	1231 W 47th St	Ashtabula	44004-5401
CF-056	Schools/Churches	Windermere	6309 Sanborn Rd.	Ashtabula	44004
CF-057	Schools/Churches	Kent State U. Ashtabula Campus	3325 W. 13th St.	Ashtabula	44004
CF-058	Schools/Churches	Austinburg Elementary School	3030 Rt 307 W	Austinburg	44010-9703
CF-059	Schools/Churches	Grand River Academy	3042 College St	Austinburg	44010
CF-060	Schools/Churches	Gateway Elementary	229 Gateway Ave	Conneaut	44030
CF-061	Schools/Churches	Gateway Middle School	230 Gateway Ave.	Conneaut	44030
CF-062	Schools/Churches	Lakeshore Primary	755 Chestnut St.	Conneaut	44030
CF-063	Schools/Churches	High School	381 Mill St.	Conneaut	44030
CF-064	Schools/Churches	South East	400 Mill St.	Conneaut	44030
CF-065	Schools/Churches	Administration Building	263 Liberty St.	Conneaut	44030
CF-066	Schools/Churches	Cork Elementary School	341 Rt 534 S	Geneva	44041-9364
CF-067	Schools/Churches	Geneva Elementary School	119 S Eagle St	Geneva	44041-1513
CF-068	Schools/Churches	Geneva High School	839 Sherman St	Geneva	44041-9101
CF-069	Schools/Churches	Geneva Junior High School	839 Sherman St	Geneva	44041-1946
CF-070	Schools/Churches	Krzic Elementary School	575 N Broadway	Geneva	44041-1138
CF-071	Schools/Churches	Spencer Elementary School	4641 N Ridge E	Geneva	44041-9209
CF-072	Schools/Churches	Eagleville Bible Church	2373 Eagleville Rd	Jefferson	44047
CF-073	Schools/Churches	Ashtabula County Vocational	1565 St Rt 167	Jefferson	44047-9420
CF-074	Schools/Churches	Jefferson Area Jr/sr High	125 S Poplar St	Jefferson	44047-1328
CF-075	Schools/Churches	Jefferson Elementary School	108 E Jefferson St	Jefferson	44047-1114
CF-076	Schools/Churches	Kingsville Elementary School	5875 Rt 193	Kingsville	44048-0017
CF-077	Schools/Churches	North Kingsville Elementary S	2866 E Center St	North Kingsville	44068-0249
CF-078	Schools/Churches	Colebrook Elementary School	682 School St	Orwell	44076-9300
CF-079	Schools/Churches	Grand Valley Elementary Schoo	7527 Rt 45	Orwell	44076-9594
CF-080	Schools/Churches	Grand Valley High School	44 N School St	Orwell	44076-9517
CF-081	Schools/Churches	Grand Valley Middle School	315 N. Maple St.	Orwell	0:00
CF-082	Schools/Churches	Pierpont Elementary School	1071 Rt 7	Pierpont	44082-0134
CF-083	Schools/Churches	Rock Creek Elementary School	2987 High St	Rock Creek	44084-9703
CF-084	Schools/Churches	Rome-hartsgrove Elementary School	3184 Us Rt 6	Rome	44085
CF-085	Schools/Churches	Windsor Elementary School	5430 Rt 322 W	Windsor	44099
CF-086	Water/Wastewater	Andover, Village Of	134 Maple Street	Andover	44003
CF-087	Water/Wastewater	Camplands Water Company LLC	4270 Rt. 7 N	Andover	44003
CF-088	Water/Wastewater	Ashtabula Public Works	501 W. 24th St	Ashtabula	44004
CF-089	Water/Wastewater	Ohio American Water Co	2905 N. Bend Rd	Ashtabula	44004
CF-090	Water/Wastewater	Austinburg First United Church of Christ	2870 State Route 307	Austinburg	44010
CF-091	Water/Wastewater	Conneaut, City Of	770 Lake Road	Conneaut	44030
CF-092	Water/Wastewater	Conneaut City Sewerage Treatment	1206 Broad St. Ex	Conneaut	44030
CF-093	Water/Wastewater	Conneaut Public Works Department	283 16th Street	Conneaut	44030
CF-094	Water/Wastewater	Waste Water Treatment	1203 Broad St.	Conneaut	44030
CF-095	Water/Wastewater	Sewer Lift Station	Poplar St. at East end	Conneaut	44030
CF-096	Water/Wastewater	Sewer Lift Station	Old Main at Bessemer RR Tracks	Conneaut	44030
CF-097	Water/Wastewater	Sewer Lift Station	Dorman Road at Bessemer RR Tra	Conneaut	44030

CF-098	Water/Wastewater	Sewer Lift Station	Woodworth Road at CSX Railroad T	Conneaut	44030
CF-099	Water/Wastewater	Sewer Lift Station	Spring St and Center Rd	Conneaut	44030
CF-100	Water/Wastewater	Sewer Lift Station	Gateway and Center Rd	Conneaut	44030
CF-101	Water/Wastewater	Water Treatment Facility	770 Lake Road	Conneaut	44030
CF-102	Water/Wastewater	Water Tower	3165 Creek Road (Kingsville Twp)	Conneaut	44030
CF-103	Water/Wastewater	Water Tower	515 Clark St.	Conneaut	44030
CF-104	Water/Wastewater	Water Tower	747 Center Road	Conneaut	44030
CF-105	Water/Wastewater	Water Tower	Brown Avenue	Conneaut	44030
CF-106	Water/Wastewater	Water Tower	452 East Main Road	Conneaut	44030
CF-107	Water/Wastewater	Water Pump Station	South Liberty at Bessemer RR Trac	Conneaut	44030
CF-108	Water/Wastewater	Water Pump Station	Parrish Road just North of Rt. 20	Conneaut	44030
CF-109	Water/Wastewater	Electric Substation	Center Road, half mile south of Und	Conneaut	44030
CF-110	Water/Wastewater	Electric Substation	Chestnut at Depot St.	Conneaut	44030
CF-111	Water/Wastewater	Natural gas Substation	263 Liberty St.	Conneaut	44030
CF-112	Water/Wastewater	Natural gas Substation	Brown Ave and Maple Ave.	Conneaut	44030
CF-113	Water/Wastewater	Geneva City PWS	141 North Ave	Geneva	44041
CF-114	Water/Wastewater	Geneva on the Lake Sewage Treatment	4946 South Spencer	Geneva-on-the-Lake	44041
CF-115	Water/Wastewater	Ashtabula County Water System	25 West Jefferson Street	Jefferson	44047
CF-116	Water/Wastewater	Ashtabula County Sanitary Sewer System	25 West Jefferson Street	Jefferson	44047
CF-117	Water/Wastewater	Village of Jefferson Sewage Treatment	225 N. Elm St.	Jefferson	44047
CF-118	Water/Wastewater	Orwell, Village Of	179 W. Main St	Orwell	44076
CF-119	Water/Wastewater	Roaming Shores Village	2500 Hayford Road	Roaming Shores	44084
CF-120	Water/Wastewater	Rock Creek Village PWS/WWTP	2600 Stiles Ave.	Rock Creek	44084
CF-121	Government	Andover Village Hall	134 Maple St	Andover	44003-1267
CF-122	Government	Andover Township Hall	410 E. Main St.	Andover	44003
CF-123	Government	Cherry Valley Town Hall	SR 193 and US 6	Andover	44003
CF-124	Government	Andover Public Library	142 W. Main St	Andover	44003
CF-125	Government	Ashtabula Public Library	335 West 44th Street	Ashtabula	44004
CF-126	Government	Ashtabula City Hall	4717 Main Ave	Ashtabula	44004
CF-127	Government	Ashtabula Township Building	2718 N. Ridge East	Ashtabula	44004
CF-128	Government	Plymouth Township Community Room	1001 Plymouth Rd.	Ashtabula	44004
CF-129	Government	Saybrook Township Administrative Office	7247 Center Rd	Ashtabula	44004
CF-130	Government	Ashtabula County District Library	335 West 44th Street	Ashtabula	44004
CF-131	Government	Harbor-Topky Memorial Library	1633 Walnut Blvd	Ashtabula	44004
CF-132	Government	Austinburg Town Hall	2794 Rt. 307	Austinburg	44010
CF-133	Government	Austinburg Township Garage	2794 State Route 45	Austinburg	44010
CF-134	Government	Conneaut Public Library	304 Buffalo Street	Conneaut	44030
CF-135	Government	Conneaut City Hall	294 Main St	Conneaut	44030
CF-136	Government	Lake Erie Correctional Facility	501 Thompson Road	Conneaut	44030
CF-137	Government	Monroe Township Garage	5578 S. Monroe Center Rd.	Conneaut OR Kingsville OR	????
CF-138	Government	Dorset Township Community Center	SR 193 and SR 307	Dorset	44032
CF-139	Government	Richmond Township Hall	SR 7 and Footville-Richmond Rd	Dorset	44032
CF-140	Government	Denmark Town Hall	SR 193 and SR 167	Dorset OR Jefferson	44032 OR 44047
CF-141	Government	Lenox Township Community Center	2509 Lenox-New Lyme Rd.	Dorset OR Jefferson OR R	????
CF-142	Government	Geneva Public Library	860 Sherman Street	Geneva	44041
CF-143	Government	Geneva City Hall	44 N. Forest St	Geneva	44041
CF-144	Government	Geneva Township Hall	256 N. Cedar St.	Geneva	44041
CF-145	Government	Ashtabula County District Library-Geneva	860 Sherman Street	Geneva	44041
CF-146	Government	Harpersfield Town Hall	SR 307 and Harpersfield Rd	Geneva OR Rock Creek OF	????

CF-147	Government	Geneva-on-the-Lake Village Hall	4964 S. Spencer	Geneva-on-the-Lake	44041
CF-148	Government	Ashtabula County SWCD	39 Wall Street	Jefferson	44047
CF-149	Government	Ashtabula County Courthouse	25 West Jefferson Street	Jefferson	44047
CF-150	Government	Henderson Memorial Library Association	54 E. Jefferson Street	Jefferson	44047
CF-151	Government	Jefferson Town Hall	27 E. Jefferson St.	Jefferson	44047
CF-152	Government	Jefferson Township Hall	335 E. Erie St	Jefferson	44047
CF-153	Government	New Lyme Township Garage	810 Dodgeville Rd	Jefferson	44047
CF-154	Government	Kingville Public Library	6006 Academy Street	Kingsville	44048
CF-155	Government	North Kingsville Municipal Building	3541 E. Center St.	North Kingsville	44068
CF-156	Government	Orwell Village Hall	179 W. Main St	Orwell	44076
CF-157	Government	Colebrook Township Garage	US 322 and SR 46 N	Orwell	44076
CF-158	Government	Orwell Township Hall	2693 US 322 East	Orwell	44076
CF-159	Government	Wayne Township Hall	3280 Rt. 322	Orwell	44076
CF-160	Government	Grand Valley Public Library	1 North School Street	Orwell	44076
CF-161	Government	Pierpont Township Hall	US 7 and SR 167	Pierpont	44082
CF-162	Government	Roaming Shores Village Office	2500 Hayford Rd	Roaming Shores	44084
CF-163	Government	Rock Creek Public Library	2988 High Street	Rock Creek	44084
CF-164	Government	Rock Creek Village Hall	3081 W. Water St	Rock Creek	44084
CF-165	Government	Hartsgrove Town Hall	SR 534 and US 6	Rome OR Windsor	????
CF-166	Government	Williamsfield Community Center (old library)	US 322	Williamsfield	44093
CF-167	Government	Windsor Township Office	5159 SR 534	Windsor	44099
CF-168	Extended Care Facilities	Miller Health Care Center	486 S Main St	Andover	44003
CF-169	Extended Care Facilities	Carington Park	2217 West Ave	Ashtabula	44004
CF-170	Extended Care Facilities	County Club Ret. Center III	925 E 26th St	Ashtabula	44004
CF-171	Extended Care Facilities	Park Haven Home	4533 Park Ave	Ashtabula	44004
CF-172	Extended Care Facilities	Austinburg Nsg Rehab Center	2026 State Route 45	Austinburg	44010
CF-173	Extended Care Facilities	Inn Conneaut Health Center	22 Parrish Blvd	Conneaut	44030
CF-174	Extended Care Facilities	Broadfield Manor Nursing & Conv.	7927 Middle Ridge Rd.	Geneva	44041
CF-175	Extended Care Facilities	Homestead	599 W. Main St.	Geneva	44041
CF-176	Extended Care Facilities	Rae Ann Geneva	839 W Main St	Geneva	44041
CF-177	Extended Care Facilities	Richwood Residential	81 Walnut St.	Geneva	44041
CF-178	Extended Care Facilities	Sacred Heart Nursing Home	60 West St	Geneva	44041
CF-179	Extended Care Facilities	Sunset Manor	840 Sherman Rd	Geneva	44041
CF-180	Extended Care Facilities	Jefferson Geriatric and Rehab Center	222 E Beech St	Jefferson	44047
CF-181	Extended Care Facilities	Jefferson Courtyard Apartments	223 E. Jefferson St.	Jefferson	44047
CF-182	Extended Care Facilities	Ashtabula County Nursing Home	5740 Dibble Rd	Kingsville	44048
CF-183	Extended Care Facilities	Serenity Manor	87 Staley Rd	Orwell	44076
CF-184	Extended Care Facilities	Grand Valley Country Manor	5165 State Route 322	Windsor	44099
CF-185	Utilities	Orwell Cable TV	70 S. Maple	Orwell	44076-9501
CF-186	Utilities	First Energy/ Illuminating Company	2210 S. Ridge West	Ashtabula	44004
CF-187	Utilities	Alltel Communications	46161 Park Ave	Ashtabula	44004-6912
CF-188	Utilities	Dominion East Ohio Natural Gas	7001 Center Rd	Ashtabula	44004-8948
CF-189	Utilities	CEI Electric	7757 Auburn Rd	Concord Township	44077
CF-190	Utilities	Conneaut Telepone Company	224 State St.	Conneaut	44030
CF-191	Utilities	Conneaut Telephone Head Station	State Route 20 at Pennsylvania bor	Conneaut	44030
CF-192	Utilities	WWOW Radio	239 Broad St.	Conneaut	44030
CF-193	Utilities	WWOW Radio Tower	Middle Road at Interstate 90	Conneaut	44030
CF-194	Utilities	WGOJ Radio	253 Mill St.	Conneaut	44030
CF-195	Utilities	Cellular Phone Tower	South Ridge Road 1 mile west of St	Conneaut	44030

CF-196	Utilities	Cellular Phone Tower	South Ridge Road 3 miles west of S	Conneaut	44030
CF-197	Utilities	Cellular Phone Tower	East Conneaut at Thompson Road	Conneaut	44030
CF-198	Utilities	Cellular Phone Tower	Center Road South of Gateway	Conneaut	44030
CF-199	Utilities	Cellular Tower	CSX RR between Chestnut St. and	Conneaut	44030
CF-200	Utilities	Norfolk and Southern RR Tower	N and S RR ½ mile west of Chestnu	Conneaut	44030
CF-201	Utilities	Conneaut Telephone Company	224 State St	Conneaut	44030
CF-202	Utilities	Orwell Telephone Company	70 S. Maple	Orwell	44076
CF-203	Utilities	Orwell Natural Gas Company	10 E. Main St	Orwell	44076
CF-204	Hospitals/Health Care	Ashtabula County Medical Center	2420 Lake Avenue	Ashtabula	44004
CF-205	Hospitals/Health Care	St. Joseph's Emergency & Diagnostics	476 S. Main St.	Andover	44003
CF-206	Hospitals/Health Care	UHHS Brown Memorial Hospital	158 W. Main Rd.	Conneaut	44030
CF-207	Hospitals/Health Care	Board of Health	327 Mill St.	Conneaut	44030
CF-208	Hospitals/Health Care	U.H.H.S. Brown Memorial Hospital	158 West Main Road	Conneaut	44030
CF-209	Hospitals/Health Care	Gerdes Pharmacy	245 Main St.	Conneaut	44030
CF-210	Hospitals/Health Care	CVS Pharmacy	199 Gateway Ave.	Conneaut	44030
CF-211	Hospitals/Health Care	Rite Aid Pharmacy	364 Main St.	Conneaut	44030
CF-212	Hospitals/Health Care	Villa-on-the-Lake	48 Parrish Road	Conneaut	44030
CF-213	Hospitals/Health Care	Maples II	27 Parrish Road	Conneaut	44030
CF-214	Hospitals/Health Care	Maples V	29 Parrish Road	Conneaut	44030
CF-215	Hospitals/Health Care	Inn Conn Health Center	22 Parrish Road	Conneaut	44030
CF-216	Hospitals/Health Care	Harrington Group Home	508 Williams St.	Conneaut	44030
CF-217	Hospitals/Health Care	Kramer Group Home	455 Main St.	Conneaut	44030
CF-218	Hospitals/Health Care	UHHS Memorial Hospital of Geneva	870 W. Main St.	Geneva	44041
CF-219	Hospitals/Health Care	Glenbeigh Hospital and Outpatient	2863 SR 45	Rock Creek	44084
CF-220	Commercial	Orlando's Grocery Store	281 Main St.	Conneaut	44030
CF-221	Commercial	Giant Eagle Grocery Store	Interstate 90 at State Route 7	Conneaut	44030
CF-222	Commercial	Save-A-Lot Grocery Store	350 West Main Road	Conneaut	44030
CF-223	Commercial	Peterson Oil Service Station	325 East Main Road	Conneaut	44030
CF-224	Commercial	BP Service Station	State Route 7 and State Street	Conneaut	44030
CF-225	Commercial	West Side Service Station	State Route 20 at Amboy Road	Conneaut	44030
CF-226	Commercial	Dry Ice Manufacturing	West Jackson St. 1 mile west of Ch	Conneaut	44030
CF-227	Commercial	True Value Hardware	265 Main St.	Conneaut	44030
CF-228	Commercial	K-Mart	Interstate 90 at State Route 7	Conneaut	44030
CF-229	Commercial	Days Inn Hotel	Interstate 90 at State Route 7	Conneaut	44030
CF-230	Commercial	Marshall Auto Parts	212 Main St.	Conneaut	44030
CF-231	Commercial	Auto Zone Auto Parts	199 Gateway Ave.	Conneaut	44030
CF-232	Commercial	Andover Bank	339 State St.	Conneaut	44030
CF-233	Commercial	Key Bank	239 State St.	Conneaut	44030
CF-234	Commercial	Conneaut Savings and Loan	382 West Main Road	Conneaut	44030
CF-235	Commercial	Conneaut Savings and Loan	305 Main St.	Conneaut	44030
CF-236	Commercial	Sky Bank	328 Main St.	Conneaut	44030
CF-237	Commercial	Norfolk and Southern RR offices	N and S RR at Chestnut St.	Conneaut	44030
CF-238	Commercial	Canadian National Dock Company	950 Ford Ave.	Conneaut	44030
CF-239	Bridges	State Route 20 over Conneaut River		Conneaut	44030
CF-240	Bridges	State Route 20 over Norfolk and Southern Railroad		Conneaut	44030
CF-241	Bridges	State Route 7 over Conneaut Creek North		Conneaut	44030
CF-242	Bridges	State Route 7 over Conneaut Creek South		Conneaut	44030
CF-243	Bridges	State Route 7 over Interstate 90		Conneaut	44030
CF-244	Bridges	Interstate 90 over Conneaut Creek (Kingsville border)		Conneaut	44030

CF-245	Bridges	Interstate 90 over Bessemer RR (Pennsylvania border)		Conneaut	44030
CF-246	Bridges	Interstate 90 over Furnace Road		Conneaut	44030
CF-247	Bridges	Middle Road over Interstate 90		Conneaut	44030
CF-248	Bridges	Dorman Road over Interstate 90		Conneaut	44030
CF-249	Bridges	Keefus Road over Interstate 90		Conneaut	44030
CF-250	Bridges	Interstate 90 over State Road		Conneaut	44030
CF-251	Bridges	CSX RR over Conneaut Creek		Conneaut	44030
CF-252	Bridges	Norfolk and Southern over Conneaut Creek		Conneaut	44030
CF-253	Bridges	CSK RR over Woodworth Road		Conneaut	44030
CF-254	Bridges	Bessemer RR over Conneaut Creek		Conneaut	44030
CF-255	Neighborhood Resouce Centers	Site 1 Conneaut Community Center	1025 Buffalo St.	Conneaut	44030
CF-256	Neighborhood Resouce Centers	Site 2 Good Sheppard Lutheran	876 Grove St.	Conneaut	44030
CF-257	Neighborhood Resouce Centers	Site 3 St. Francis Cabrini	744 Mill St.	Conneaut	44030
CF-258	Neighborhood Resouce Centers	Site 4 First United Methodist	283 Buffalo St.	Conneaut	44030
CF-259	Neighborhood Resouce Centers	Site 5 St. Mary's Hall	480 State St.	Conneaut	44030
CF-260	Neighborhood Resouce Centers	Site 6 Lakeview United Methodist	660 Clinton Ave.	Conneaut	44030
CF-261	Neighborhood Resouce Centers	Site 7 Villa-on-the-Lake (also heath care)	48 Parrish Road	Conneaut	44030
CF-262	Neighborhood Resouce Centers	Site 8 First Assembly of God	389 West Main Road	Conneaut	44030
CF-263	Neighborhood Resouce Centers	Site 9 Church of Christ	448 West Main Road	Conneaut	44030
CF-264	Neighborhood Resouce Centers	Site 10 Highland Apartments	442 West Main Road	Conneaut	44030
CF-265	Neighborhood Resouce Centers	Site 11 Amboy United Methodist	554 West Main Road	Conneaut	44030
CF-266	Neighborhood Resouce Centers	Site 12 Days Inn (also commercial)	600 Days Blvd.	Conneaut	44030
CF-267	Neighborhood Resouce Centers	Site 13 South Ridge Christian Academy	924 Center Road	Conneaut	44030
CF-268	Neighborhood Resouce Centers	Site 14 East Conneaut United Methodist	809 Furnace Road	Conneaut	44030
CF-269	Neighborhood Resouce Centers	Site 15 Wesleyan Methodist	315 E. Main Road	Conneaut	44030
CF-270	Neighborhood Resouce Centers	Site 16 East Conneaut Baptist Chapel	393 Jennie St.	Conneaut	44030
CF-271	Neighborhood Resouce Centers	Site 17 Lake Erie Corrections	501 Thompson Road	Conneaut	44030
CF-272	Neighborhood Resouce Centers	Site 18 (Emergency Workers)United Church of	211 Buffalo St.	Conneaut	44030
CF-273	Neighborhood Resouce Centers	Jefferson Community Center	11 E. Jefferson St	Jefferson	44047
CF-274	Schools/Churches	Grand Valley PK-12 School	111 Grand Valley West	Orwell	44076

Appendix H:
**National Climatic Data
Center Tables**

NCDC Tables and OhioSeis Tables for Ashtabula County

Snow and Ice								
Location or County	Date	Time	Type	Mag	Dth	Inj	PrD	CrD
1 Extreme	12/21/1993	2300	Heavy Snow	N/A	0	0	5K	0
2 Northeast Ohio	12/29/1993	1900	Heavy Snow	N/A	0	0	5K	0
3 Extreme Northeast	02/03/1994	0300	Heavy Snow	N/A	0	0	5K	0
4 North Central And Nor	02/08/1994	1300	Ice Storm	N/A	0	6	500K	500K
5 Northern Ohio	02/25/1994	1600	Heavy Snow	N/A	0	0	50K	0
6 Southwest Through Nor	03/09/1994	0400	Heavy Snow	N/A	0	0	500K	0
7 Extreme Northeast	03/16/1994	0300	Heavy Snow	N/A	0	0	5K	0
8 Extreme Northeast	01/01/1995	1800	Heavy Snow	N/A	0	1	0	0
9 Extreme Northeast	01/03/1995	2100	Heavy Snow	N/A	0	0	0	0
10 Multiple Counties	02/04/1995	0900	Heavy Snow	N/A	0	0	20K	0
11 Extreme Northeast	11/04/1995	0300	Heavy Snow	N/A	0	0	5K	0
12 Northeast Ohio	11/10/1995	0300	Heavy Snow	N/A	0	0	0	0
13 Extreme Northeast	11/15/1995	0600	Heavy Snow	N/A	0	0	20K	0
14 Extreme Northeast	11/21/1995	0600	Heavy Snow	N/A	0	0	10K	0
15 Lake And Ashtabula Co	12/09/1995	2015	Heavy Snow	N/A	0	0	10K	0
16 Countywide	12/13/1995	2000	Ice Storm	N/A	0	0	3K	0
17 Extreme Northeast	12/20/1995	1200	Heavy Snow	N/A	0	0	10K	0
18 Extreme Northeast (in	12/25/1995	1200	Heavy Snow	N/A	0	0	0K	0
19 Multiple Counties	01/02/1996	09:00 AM	Heavy Snow	N/A	0	0	3.4M	0
20 Multiple Counties	01/09/1996	09:00 PM	Heavy Snow	N/A	0	0	7K	0
21 Multiple Counties	03/02/1996	07:00 PM	Heavy Snow	N/A	0	0	9K	0
22 Multiple Counties	11/09/1996	03:00 PM	Heavy Snow	N/A	0	13	21.0M	0
23 Multiple Counties	12/08/1996	11:00 AM	Heavy Snow	N/A	0	0	0	0

24 Multiple Counties	12/24/1996	05:00 PM	Heavy Snow	N/A	0	0	0	0
25 Multiple Counties	01/07/1997	03:00 AM	Heavy Snow	N/A	0	0	0	0
26 Multiple Counties	01/16/1997	10:00 AM	Heavy Snow	N/A	0	0	0	0
27 Multiple Counties	03/06/1997	01:00 AM	Heavy Snow	N/A	0	0	30K	0
28 Multiple Counties	03/06/1997	05:00 PM	Heavy Snow	N/A	0	0	0	0
29 Multiple Counties	11/12/1997	06:00 AM	Heavy Snow	N/A	0	0	0	0
30 Multiple Counties	11/15/1997	06:00 PM	Heavy Snow	N/A	0	0	0	0
31 Multiple Counties	11/23/1997	06:00 PM	Heavy Snow	N/A	0	0	0	0
32 Multiple Counties	12/05/1997	02:00 AM	Heavy Snow	N/A	0	0	0	0
33 Multiple Counties	01/19/1998	11:00 AM	Heavy Snow	N/A	0	0	0	0
34 Multiple Counties	03/10/1998	03:45 AM	Heavy Snow	N/A	0	0	0	0
35 Multiple Counties	03/14/1998	04:00 AM	Heavy Snow	N/A	0	0	30K	0
36 Multiple Counties	12/17/1998	07:00 AM	Heavy Snow	N/A	0	0	0	0
37 Multiple Counties	12/22/1998	01:00 AM	Heavy Snow	N/A	0	0	0	0
38 Multiple Counties	12/29/1998	11:00 PM	Heavy Snow	N/A	0	0	100K	0
39 Multiple Counties	12/31/1998	03:00 PM	Heavy Snow	N/A	0	0	75K	0
40 Multiple Counties	01/02/1999	04:00 AM	Winter Storm	N/A	0	56	600K	0
41 Multiple Counties	01/06/1999	07:00 AM	Heavy Snow	N/A	0	0	0	0
42 Multiple Counties	01/08/1999	04:00 AM	Winter Storm	N/A	0	0	46K	0
43 Multiple Counties	01/10/1999	11:00 PM	Heavy Snow	N/A	0	0	75K	0
44 Multiple Counties	01/13/1999	01:30 AM	Winter Storm	N/A	0	0	58K	0
45 Multiple Counties	01/14/1999	10:00 PM	Heavy Snow	N/A	0	0	1.0M	0
46 Multiple Counties	02/12/1999	05:00 PM	Heavy Snow	N/A	0	0	0	0
47 Multiple Counties	03/05/1999	09:00 PM	Heavy Snow	N/A	0	0	300K	0
48 Multiple Counties	11/29/1999	07:00 PM	Heavy Snow	N/A	0	0	35K	0
49 Multiple Counties	12/23/1999	05:00 AM	Heavy Snow	N/A	0	0	575K	0
50 Multiple Counties	12/27/1999	12:00 PM	Heavy Snow	N/A	0	0	60K	0
51 Multiple Counties	01/19/2000	10:00 PM	Heavy Snow	N/A	0	0	315K	0
52 Multiple Counties	01/21/2000	01:00 AM	Heavy Snow	N/A	0	0	70K	0
53 Multiple Counties	02/13/2000	10:00 PM	Winter	N/A	0	0	170K	0

			Storm					
54 Multiple Counties	03/11/2000	12:00 PM	Winter Storm	N/A	0	0	315K	0
55 Multiple Counties	11/15/2000	12:30 AM	Heavy Snow	N/A	0	0	30K	0
56 Multiple Counties	11/17/2000	05:30 AM	Heavy Snow	N/A	0	0	65K	0
57 Multiple Counties	11/20/2000	06:00 PM	Heavy Snow	N/A	0	0	1.3M	0
58 Multiple Counties	11/21/2000	10:00 PM	Heavy Snow	N/A	0	0	850K	0
59 Multiple Counties	12/06/2000	10:00 PM	Heavy Snow	N/A	0	0	155K	0
60 Multiple Counties	12/13/2000	02:00 PM	Winter Storm	N/A	0	0	2.5M	0
61 Multiple Counties	12/22/2000	02:00 PM	Heavy Snow	N/A	0	0	20K	0
62 Multiple Counties	12/24/2000	06:00 AM	Heavy Snow	N/A	0	0	145K	0
63 Multiple Counties	12/27/2000	05:00 AM	Heavy Snow	N/A	0	0	295K	0
64 Multiple Counties	12/31/2000	06:00 AM	Heavy Snow	N/A	0	0	85K	0
65 Multiple Counties	02/02/2001	04:00 PM	Heavy Snow	N/A	0	0	60K	0
66 Multiple Counties	03/26/2001	02:00 PM	Heavy Snow	N/A	0	0	180K	0
67 Multiple Counties	12/28/2001	02:00 PM	Heavy Snow	N/A	0	0	950K	0
68 Multiple Counties	02/04/2002	06:00 AM	Heavy Snow	N/A	0	0	130K	0
69 Multiple Counties	02/27/2002	06:00 AM	Heavy Snow	N/A	0	0	250K	0
70 Multiple Counties	03/03/2002	06:00 PM	Heavy Snow	N/A	0	0	160K	0
71 Multiple Counties	03/22/2002	12:00 AM	Heavy Snow	N/A	0	0	325K	0
72 Multiple Counties	03/24/2002	08:00 PM	Winter Storm	N/A	0	0	1.6M	0
73 Multiple Counties	11/27/2002	08:00 PM	Heavy Snow	N/A	0	0	40K	0
74 Multiple Counties	11/30/2002	12:00 PM	Heavy Snow	N/A	0	0	150K	0
75 Multiple Counties	12/01/2002	12:00 AM	Heavy Snow	N/A	0	0	100K	0
76 Multiple Counties	12/24/2002	09:00 PM	Heavy Snow	N/A	0	0	3.1M	0
77 Multiple Counties	01/15/2003	12:00 AM	Heavy Snow	N/A	0	0	150K	0
78 Multiple Counties	01/26/2003	02:00 AM	Heavy Snow	N/A	0	0	325K	0
79 Multiple Counties	12/17/2003	04:00 PM	Heavy Snow	N/A	0	0	2.4M	0
80 Multiple Counties	01/06/2004	03:00 AM	Heavy Snow	N/A	0	0	1.1M	0
81 Multiple Counties	01/14/2004	08:00 AM	Winter Storm	N/A	0	0	650K	0

82 Multiple Counties	03/16/2004	01:30 AM	Heavy Snow	N/A	0	0	3.5M	0
83 Multiple Counties	12/13/2004	06:00 AM	Winter Storm	N/A	0	0	1.2M	0
84 Multiple Counties	12/19/2004	02:00 AM	Winter Storm	N/A	0	0	1.2M	0
85 Multiple Counties	12/22/2004	11:00 AM	Winter Storm	N/A	0	0	10.2M	0
86 Multiple Counties	01/05/2005	02:00 AM	Ice Storm	N/A	0	0	124.9M	0
87 Multiple Counties	01/16/2005	06:00 AM	Winter Storm	N/A	0	0	0	0
88 Multiple Counties	01/22/2005	01:30 AM	Winter Storm	N/A	0	0	4.5M	0
TOTALS:					0	76	191.823M	500K

Temperature Extremes								
Location or County	Date	Time	Type	Mag	Dth	Inj	PrD	CrD
1 Northern Ohio	12/26/1993	0000	Extreme Cold	N/A	1	0	500K	0
2 Countywide	05/06/1994	0400	Extreme Cold	N/A	0	0	0	500K
3 Multiple Counties	02/11/1995	2000	Extreme Cold	N/A	4	0	100K	0
4 Multiple Counties	04/04/1995	2100	Extreme Cold	N/A	0	0	0	0
5 Northern Ohio	07/12/1995	1200	Heat Wave	N/A	0	12	600K	0
6 Northern Ohio	08/03/1995	2100	Heat Wave	N/A	5	11	0	0
7 Northern Ohio	08/08/1995	1100	Heat Wave	N/A	13	52	500K	0
8 Northern Ohio	12/09/1995	0800	Extreme Cold	N/A	3	0	210K	0
9 Statewide	12/09/1995	1200	Extreme Cold	N/A	0	1	2K	0
10 Multiple Counties	02/02/1996	08:00 PM	Extreme Cold	N/A	1	0	3.4M	0
11 Multiple Counties	01/10/1997	12:00 AM	Extreme Cold	N/A	4	0	195K	0
12 Multiple Counties	06/06/1999	12:00 AM	Excessive Heat	N/A	0	0	0	0
13 Multiple Counties	07/01/1999	12:00 AM	Excessive Heat	N/A	0	0	0	0
14 Multiple Counties	05/20/2002	04:00 AM	Extreme Cold	N/A	0	0	0	3.5M
TOTALS:					31	76	5.537M	4.000M

Thunderstorm and High Winds

Location or County	Date	Time	Type	Mag	Dth	Inj	PrD	CrD
1 Countywide	04/30/1962	2000	Tstm Wind	0 kts.	0	0	0	0
2 Countywide	07/24/1967	1320	Tstm Wind	0 kts.	0	0	0	0
3 Countywide	06/19/1968	1800	Tstm Wind	52 kts.	0	0	0	0
4 Countywide	08/30/1970	1830	Tstm Wind	60 kts.	0	0	0	0
5 Countywide	08/10/1971	1605	Tstm Wind	0 kts.	0	0	0	0
6 Countywide	08/22/1971	2042	Tstm Wind	0 kts.	0	0	0	0
7 Countywide	07/09/1972	1648	Tstm Wind	0 kts.	0	0	0	0
8 Countywide	08/07/1972	0340	Tstm Wind	0 kts.	0	0	0	0
9 Countywide	04/01/1973	1300	Tstm Wind	0 kts.	0	0	0	0
10 Countywide	06/03/1973	1815	Tstm Wind	0 kts.	0	0	0	0
11 Countywide	08/09/1973	1355	Tstm Wind	0 kts.	0	0	0	0
12 Countywide	08/17/1973	1230	Tstm Wind	0 kts.	0	0	0	0
13 Countywide	04/14/1974	1310	Tstm Wind	0 kts.	0	0	0	0
14 Countywide	04/14/1974	1340	Tstm Wind	0 kts.	0	0	0	0
15 Countywide	04/14/1974	1340	Tstm Wind	0 kts.	0	0	0	0
16 Countywide	06/30/1974	1230	Tstm Wind	0 kts.	0	0	0	0
17 Countywide	06/30/1974	1315	Tstm Wind	0 kts.	0	0	0	0
18 Countywide	08/13/1974	1200	Tstm Wind	0 kts.	0	0	0	0
19 Countywide	07/06/1977	1900	Tstm Wind	0 kts.	0	0	0	0
20 Countywide	07/07/1977	1600	Tstm Wind	0 kts.	0	0	0	0
21 Countywide	07/07/1977	1600	Tstm Wind	0 kts.	0	0	0	0
22 Countywide	08/19/1978	1510	Tstm Wind	52 kts.	0	0	0	0
23 Countywide	06/29/1979	1220	Tstm Wind	50 kts.	0	0	0	0
24 Countywide	04/08/1980	1930	Tstm Wind	52 kts.	0	0	0	0
25 Countywide	07/07/1980	2130	Tstm Wind	61 kts.	0	0	0	0
26 Countywide	07/16/1980	2244	Tstm Wind	0 kts.	0	0	0	0
27 Countywide	08/02/1980	0830	Tstm Wind	51 kts.	0	0	0	0
28 Countywide	08/03/1980	0845	Tstm Wind	60 kts.	0	0	0	0
29 Countywide	08/05/1980	1425	Tstm Wind	50 kts.	0	0	0	0

30 Countywide	06/22/1981	0435	Tstm Wind	0 kts.	0	0	0	0
31 Countywide	01/04/1982	0855	Tstm Wind	50 kts.	0	0	0	0
32 Countywide	06/15/1982	1850	Tstm Wind	0 kts.	0	0	0	0
33 Countywide	06/15/1982	1905	Tstm Wind	0 kts.	0	0	0	0
34 Countywide	05/02/1983	1535	Tstm Wind	0 kts.	0	0	0	0
35 Countywide	07/04/1983	1630	Tstm Wind	65 kts.	0	0	0	0
36 Countywide	07/21/1983	1410	Tstm Wind	0 kts.	0	0	0	0
37 Countywide	07/21/1983	1420	Tstm Wind	0 kts.	0	0	0	0
38 Countywide	09/06/1983	1808	Tstm Wind	0 kts.	0	0	0	0
39 Countywide	10/13/1983	1110	Tstm Wind	0 kts.	0	0	0	0
40 Countywide	10/13/1983	1110	Tstm Wind	70 kts.	0	0	0	0
41 Countywide	07/10/1984	0130	Tstm Wind	0 kts.	0	0	0	0
42 Countywide	08/30/1984	0715	Tstm Wind	56 kts.	0	0	0	0
43 Countywide	08/30/1984	0745	Tstm Wind	0 kts.	0	0	0	0
44 Countywide	08/30/1984	0745	Tstm Wind	0 kts.	0	0	0	0
45 Countywide	05/31/1985	1445	Tstm Wind	52 kts.	0	0	0	0
46 Countywide	05/31/1985	1500	Tstm Wind	50 kts.	0	0	0	0
47 Countywide	07/05/1985	1545	Tstm Wind	50 kts.	0	0	0	0
48 Countywide	07/14/1985	0907	Tstm Wind	0 kts.	0	0	0	0
49 Countywide	03/10/1986	1900	Tstm Wind	0 kts.	0	0	0	0
50 Countywide	09/30/1986	1355	Tstm Wind	0 kts.	0	0	0	0
51 Countywide	06/29/1987	1415	Tstm Wind	57 kts.	0	0	0	0
52 Countywide	08/02/1987	1300	Tstm Wind	0 kts.	0	0	0	0
53 Countywide	09/12/1987	1430	Tstm Wind	0 kts.	0	0	0	0
54 Countywide	09/17/1987	1328	Tstm Wind	0 kts.	0	0	0	0
55 Countywide	09/17/1987	1328	Tstm Wind	0 kts.	0	0	0	0
56 Countywide	09/17/1987	1328	Tstm Wind	0 kts.	0	0	0	0
57 Countywide	05/09/1988	1630	Tstm Wind	0 kts.	0	0	0	0
58 Countywide	05/15/1988	2015	Tstm Wind	52 kts.	0	0	0	0
59 Countywide	08/11/1988	1837	Tstm Wind	0 kts.	0	0	0	0
60 Countywide	08/14/1988	1615	Tstm Wind	63 kts.	0	0	0	0
61 Countywide	09/18/1988	0415	Tstm Wind	0 kts.	0	0	0	0

62 Countywide	06/03/1989	1535	Tstm Wind	0 kts.	0	0	0	0
63 Countywide	06/03/1990	1800	Tstm Wind	0 kts.	0	0	0	0
64 Countywide	08/27/1990	2320	Tstm Wind	0 kts.	0	0	0	0
65 Countywide	08/28/1990	1850	Tstm Wind	0 kts.	0	0	0	0
66 Countywide	09/06/1990	1355	Tstm Wind	0 kts.	0	0	0	0
67 Countywide	09/14/1990	1630	Tstm Wind	0 kts.	0	0	0	0
68 Countywide	03/27/1991	2315	Tstm Wind	54 kts.	0	0	0	0
69 Countywide	03/28/1991	0015	Tstm Wind	0 kts.	0	0	0	0
70 Countywide	07/07/1991	2045	Tstm Wind	61 kts.	0	0	0	0
71 Countywide	07/07/1991	2320	Tstm Wind	0 kts.	0	0	0	0
72 Countywide	04/23/1992	1945	Tstm Wind	0 kts.	0	0	0	0
73 Countywide	06/17/1992	2340	Tstm Wind	0 kts.	0	0	0	0
74 Countywide	07/13/1992	1907	Tstm Wind	0 kts.	0	0	0	0
75 Countywide	07/14/1992	1845	Tstm Wind	0 kts.	0	0	0	0
76 Countywide	08/08/1992	1615	Tstm Wind	0 kts.	0	0	0	0
77 Wayne Township	04/16/1993	0010	High Winds	0 kts.	0	0	50K	0
78 Orwell	08/31/1993	0805	Thunderstorm Winds	N/A	0	0	5K	0
79 Countywide	08/31/1993	1235	Thunderstorm Winds	N/A	0	0	5K	0
80 Orwell	09/02/1993	1630	Thunderstorm Winds	N/A	0	0	50K	0
81 Northern Ohio	10/21/1993	0710	High Winds	0 kts.	0	0	5K	0
82 Ashtabula Township	04/15/1994	1350	Thunderstorm Winds	N/A	0	0	5K	0
83 Countywide	04/27/1994	0545	Thunderstorm Winds	N/A	0	0	50K	0
84 Geneva-on-the-lake	06/13/1994	1157	Thunderstorm Winds	N/A	0	0	5K	0
85 Jefferson	06/15/1994	1226	Thunderstorm Winds	N/A	0	0	5K	0
86 Andover	06/29/1994	0145	Thunderstorm Winds	N/A	0	0	5K	0
87 New Lyme	07/07/1994	1430	Thunderstorm	N/A	0	0	50K	0

Twنشp			Winds					
88 Ashtabula	08/04/1994	1300	Thunderstorm Winds	N/A	0	0	0	0
89 Countywide	08/12/1994	1748	Thunderstorm Winds	N/A	0	0	5K	0
90 Ashtabula	08/13/1994	1856	Thunderstorm Winds	N/A	0	0	50K	0
91 Ashtabula	08/14/1994	0000	Thunderstorm Winds	N/A	0	0	5K	0
92 N Portion	08/14/1994	0230	Thunderstorm Winds	N/A	0	0	5K	0
93 Ashtabula	08/28/1994	1340	Thunderstorm Winds	N/A	0	0	50K	0
94 S Portion	08/28/1994	1430	Thunderstorm Winds	N/A	0	0	500K	0
95 Ashtabula	09/06/1994	2005	Thunderstorm Winds	N/A	0	0	5K	0
96 Geneva	09/25/1994	1414	Thunderstorm Winds	N/A	0	0	5K	0
97 Multiple Counties	11/01/1994	2000	High Winds	0 kts.	0	1	500K	0
98 Multiple Counties	11/27/1994	1400	High Winds	0 kts.	0	1	50K	0
99 Multiple Counties	11/28/1994	1000	High Winds	0 kts.	0	0	500K	0
100 Countywide	05/14/1995	0345	Thunderstorm Winds	N/A	0	0	30K	0
101 Countywide	05/28/1995	2323	Thunderstorm Winds	N/A	0	0	5K	0
102 Countywide	05/29/1995	0030	Thunderstorm Winds	N/A	0	0	80K	0
103 Jefferson	06/26/1995	1450	Thunderstorm Winds	N/A	0	0	15K	0
104 Lake Erie	07/13/1995	1845	Thunderstorm Winds	N/A	1	9	500K	0
105 Countywide	07/13/1995	1900	Thunderstorm Winds	N/A	0	0	60K	10K
106 Ashtabula	07/16/1995	2050	Thunderstorm Winds	N/A	0	0	0	0

107 Geneva-on-the Lake	08/13/1995	1945	Thunderstorm Winds	N/A	0	0	2K	0
108 Northern Ohio	10/05/1995	0900	Strong Winds	N/A	0	0	80K	0
109 Northeast Ohio	10/20/1995	1230	High Winds	0 kts.	0	0	70K	0
110 Northern Ohio	10/24/1995	0600	Strong Winds	N/A	0	0	25K	0
111 Northern Ohio	11/11/1995	0630	High Winds	0 kts.	0	0	260K	0
112 North Central And Nor	11/27/1995	1800	High Winds	0 kts.	0	0	40K	0
113 Multiple Counties	01/27/1996	06:00 AM	High Wind	68 kts.	0	0	0	0
114 Multiple Counties	02/10/1996	10:00 PM	High Wind	50 kts.	0	0	45K	0
115 Multiple Counties	03/25/1996	10:00 AM	High Wind	55 kts.	0	0	529K	0
116 Countywide	04/12/1996	06:15 PM	Tstm Wind	62 kts.	2	0	100K	0
117 Northern Half	06/22/1996	03:45 AM	Tstm Wind	55 kts.	0	0	1K	0
118 Geneva On The Lake	07/07/1996	09:00 PM	Tstm Wind	60 kts.	0	0	0	0
119 Monroe Center	07/24/1996	05:30 PM	Tstm Wind	55 kts.	0	0	0	0
120 Pierpont	08/08/1996	12:15 PM	Tstm Wind	0 kts.	0	0	2K	0
121 Northern Half	08/15/1996	01:15 PM	Tstm Wind	52 kts.	0	0	10K	0
122 Southeast Portion	08/20/1996	03:30 PM	Tstm Wind	0 kts.	0	0	15K	0
123 Countywide	08/20/1996	07:00 PM	Tstm Wind	50 kts.	0	0	0	0
124 Multiple Counties	09/07/1996	04:00 AM	High Wind	50 kts.	0	0	128K	200K
125 Multiple Counties	10/30/1996	12:10 AM	High Wind	69 kts.	1	2	5.3M	2.3M
126 Ashtabula Lght House	11/07/1996	07:45 PM	Tstm Wind	53 kts.	0	0	0	0
127 Ashtabula	12/01/1996	01:35 PM	Tstm Wind	50 kts.	0	0	2K	0
128 Multiple Counties	02/21/1997	10:30 AM	High Wind	58 kts.	0	0	20K	0
129 Multiple Counties	02/22/1997	02:13 AM	High Wind	50 kts.	0	0	9K	0
130 Andover	02/22/1997	03:00 AM	Tstm Wind	50 kts.	0	0	2K	0

131 Multiple Counties	02/27/1997	12:15 AM	High Wind	57 kts.	0	0	180K	0
132 Multiple Counties	03/09/1997	10:21 PM	High Wind	54 kts.	0	0	0	0
133 Countywide	06/25/1997	06:50 PM	Tstm Wind	0 kts.	0	0	75K	0
134 Countywide	07/02/1997	09:45 PM	Tstm Wind	0 kts.	0	0	60K	0
135 Multiple Counties	03/28/1998	09:30 AM	High Wind	0 kts.	0	0	305K	0
136 Conneaut	05/31/1998	03:30 PM	Tstm Wind	0 kts.	0	0	5K	0
137 Andover	06/12/1998	08:40 PM	Tstm Wind	0 kts.	0	0	5K	0
138 Countywide	07/21/1998	07:25 PM	Tstm Wind	0 kts.	0	0	20K	0
139 Countywide	08/24/1998	07:25 AM	Tstm Wind	0 kts.	0	0	25K	0
140 Countywide	11/10/1998	06:20 PM	Tstm Wind	0 kts.	0	0	10K	0
141 Multiple Counties	03/17/1999	04:40 PM	High Wind	55 kts.	0	0	80K	0
142 Countywide	07/03/1999	04:00 PM	Tstm Wind	0 kts.	0	0	20K	0
143 Orwell	07/06/1999	03:20 PM	Tstm Wind	0 kts.	0	0	5K	0
144 Countywide	07/09/1999	05:10 PM	Tstm Wind	0 kts.	0	0	50K	0
145 Countywide	07/28/1999	10:30 PM	Tstm Wind	0 kts.	0	0	75K	0
146 Countywide	07/31/1999	04:55 PM	Tstm Wind	0 kts.	0	2	60K	0
147 Geneva	08/05/1999	06:55 AM	Tstm Wind	0 kts.	0	0	5K	0
148 Countywide	09/29/1999	03:30 PM	Tstm Wind	0 kts.	0	0	40K	0
149 Countywide	10/13/1999	04:25 PM	Tstm Wind	0 kts.	0	0	25K	0
150 Ashtabula	10/13/1999	05:45 PM	Tstm Wind	52 kts.	0	0	25K	0
151 Multiple Counties	12/15/1999	08:00 PM	High Wind	0 kts.	0	0	50K	0
152 Ashtabula	01/10/2000	01:35 PM	Tstm Wind	0 kts.	0	0	10K	0
153 Countywide	05/31/2000	07:10 PM	Tstm Wind	0 kts.	0	0	10K	0
154 Andover	06/02/2000	12:10 PM	Tstm Wind	0 kts.	0	0	5K	0
155 Ashtabula	06/14/2000	08:53 PM	Tstm Wind	0 kts.	0	0	10K	0
156 Rock Creek	06/16/2000	04:35 PM	Tstm Wind	0 kts.	0	0	10K	0
157 Conneaut	06/25/2000	03:15 AM	Tstm Wind	0 kts.	0	0	15K	0
158 Andover	07/14/2000	11:45 AM	Tstm Wind	0 kts.	0	0	5K	0

159 Ashtabula	08/02/2000	07:56 PM	Tstm Wind	0 kts.	0	0	5K	0
160 Jefferson	08/02/2000	08:30 PM	Tstm Wind	0 kts.	0	0	25K	0
161 Conneaut	08/02/2000	12:00 PM	Tstm Wind	0 kts.	0	0	5K	0
162 Ashtabula	08/02/2000	12:14 PM	Tstm Wind	62 kts.	0	0	0	0
163 Ashtabula	08/09/2000	05:40 PM	Tstm Wind	75 kts.	0	0	35K	0
164 Andover	08/09/2000	06:20 PM	Tstm Wind	0 kts.	0	0	40K	0
165 Ashtabula	10/04/2000	03:50 AM	Tstm Wind	52 kts.	0	0	0	0
166 Countywide	10/04/2000	06:00 AM	Tstm Wind	0 kts.	0	0	1.0M	0
167 Multiple Counties	12/11/2000	11:30 PM	High Wind	0 kts.	0	0	4.4M	0
168 Multiple Counties	02/09/2001	08:00 PM	High Wind	0 kts.	0	0	320K	0
169 Multiple Counties	02/25/2001	07:00 AM	High Wind	0 kts.	0	0	460K	0
170 Austinburg	07/23/2001	02:15 PM	Tstm Wind	0 kts.	0	0	5K	0
171 Multiple Counties	10/16/2001	12:00 PM	High Wind	0 kts.	0	0	190K	0
172 Andover	10/24/2001	10:00 PM	Tstm Wind	0 kts.	0	0	5K	0
173 Multiple Counties	10/25/2001	11:00 AM	High Wind	0 kts.	0	4	760K	0
174 Multiple Counties	12/14/2001	03:00 PM	High Wind	0 kts.	0	0	225K	0
175 Multiple Counties	02/01/2002	10:00 AM	High Wind	0 kts.	0	0	1.1M	0
176 Multiple Counties	03/09/2002	02:30 PM	High Wind	55 kts.	2	8	8.9M	0
177 Pierpont	06/04/2002	10:30 PM	Tstm Wind	0 kts.	0	0	5K	0
178 Orwell	06/14/2002	04:30 PM	Tstm Wind	0 kts.	0	0	10K	0
179 Mechanicsville	06/21/2002	02:40 PM	Tstm Wind	0 kts.	0	0	125K	0
180 Jefferson	06/21/2002	04:35 PM	Tstm Wind	0 kts.	0	0	10K	0
181 Ashtabula Co Arpt	06/21/2002	04:45 PM	Tstm Wind	57 kts.	0	0	0	0
182 Jefferson	06/26/2002	07:20 PM	Tstm Wind	0 kts.	0	0	20K	0
183 Pierpont	07/27/2002	04:40 PM	Tstm Wind	0 kts.	0	0	25K	0
184 Andover	07/28/2002	09:10 PM	Tstm Wind	0 kts.	0	0	2K	0

185 Jefferson	07/28/2002	09:55 PM	Tstm Wind	0 kts.	0	0	2K	0
186 Conneaut	07/29/2002	07:20 PM	Tstm Wind	0 kts.	0	0	35K	0
187 Countywide	08/12/2002	01:00 PM	Tstm Wind	0 kts.	0	0	50K	0
188 Jefferson	08/12/2002	12:50 PM	Tstm Wind	52 kts.	0	0	0	0
189 Ashtabula	08/14/2002	03:20 PM	Tstm Wind	0 kts.	0	0	5K	0
190 Kingsville	08/14/2002	03:35 PM	Tstm Wind	0 kts.	0	0	30K	0
191 Jefferson	11/10/2002	07:40 PM	Tstm Wind	0 kts.	0	0	5K	0
192 Multiple Counties	02/04/2003	09:00 AM	Strong Wind	N/A	0	0	150K	0
193 Multiple Counties	02/12/2003	12:00 AM	High Wind	55 kts.	0	0	1.3M	0
194 Ashtabula	04/05/2003	12:30 AM	Tstm Wind	50 kts.	0	0	2K	0
195 Saybrook	05/06/2003	01:55 AM	Tstm Wind	50 kts.	0	0	15K	0
196 Multiple Counties	05/11/2003	10:00 AM	Strong Wind	N/A	0	0	1.2M	0
197 Ashtabula	08/26/2003	02:35 AM	Tstm Wind	50 kts.	0	0	3K	0
198 Geneva	09/27/2003	01:55 AM	Tstm Wind	50 kts.	0	0	4K	0
199 Multiple Counties	10/14/2003	09:15 PM	Strong Wind	N/A	0	0	80K	0
200 Multiple Counties	11/12/2003	08:00 PM	High Wind	52 kts.	0	0	2.3M	0
201 Multiple Counties	03/05/2004	12:30 PM	High Wind	52 kts.	0	1	2.4M	0
202 Countywide	05/21/2004	04:00 PM	Tstm Wind	50 kts.	0	0	175K	0
203 Pierpont	05/22/2004	01:30 PM	Tstm Wind	50 kts.	0	0	2K	0
204 Jefferson	06/09/2004	04:40 PM	Tstm Wind	50 kts.	0	0	5K	0
205 Jefferson	06/09/2004	04:40 PM	Tstm Wind	50 kts.	0	0	6K	0
206 Countywide	06/14/2004	05:25 PM	Tstm Wind	50 kts.	0	0	15K	0
207 Multiple Counties	09/09/2004	02:00 AM	Strong Wind	N/A	0	0	525K	0
208 Multiple Counties	12/01/2004	07:00 AM	High Wind	56 kts.	0	0	180K	0
209 Multiple Counties	12/07/2004	12:15 PM	High Wind	57 kts.	0	0	380K	0
TOTALS:					6	28	36.9M	2.5M

Hail

Location or County	Date	Time	Type	Mag	Dth	Inj	PrD	CrD
1 Countywide	05/14/1972	1715	Hail	0.75 in.	0	0	0	0
2 Countywide	04/14/1974	1310	Hail	1.00 in.	0	0	0	0
3 Countywide	04/14/1974	1340	Hail	0.75 in.	0	0	0	0
4 Countywide	04/14/1974	1340	Hail	0.75 in.	0	0	0	0
5 Countywide	05/02/1983	1355	Hail	1.75 in.	0	0	0	0
6 Countywide	05/31/1985	1445	Hail	0.75 in.	0	0	0	0
7 Countywide	05/30/1987	1225	Hail	0.75 in.	0	0	0	0
8 Countywide	03/02/1991	1430	Hail	0.88 in.	0	0	0	0
9 Countywide	04/09/1991	1730	Hail	1.75 in.	0	0	0	0
10 Countywide	05/01/1991	1144	Hail	0.75 in.	0	0	0	0
11 Countywide	10/04/1991	1455	Hail	0.75 in.	0	0	0	0
12 Countywide	04/11/1992	1730	Hail	0.75 in.	0	0	0	0
13 Countywide	04/11/1992	1730	Hail	0.75 in.	0	0	0	0
14 Countywide	04/16/1992	1450	Hail	0.75 in.	0	0	0	0
15 Countywide	04/16/1992	1450	Hail	0.75 in.	0	0	0	0
16 Countywide	06/26/1992	1412	Hail	0.75 in.	0	0	0	0
17 Countywide	06/26/1992	1412	Hail	0.75 in.	0	0	0	0
18 Countywide	08/30/1992	1028	Hail	0.75 in.	0	0	0	0
19 Countywide	08/30/1992	1028	Hail	0.75 in.	0	0	0	0
20 Conneaut	04/26/1994	1555	Hail	0.75 in.	0	0	0	0
21 Williamsfield	06/11/1994	1500	Hail	0.75 in.	0	0	0	0
22 North Kingsville And	06/13/1994	1610	Hail	1.25 in.	0	0	0	0
23 Shaker Heights	11/01/1994	0415	Hail	1.00 in.	0	0	0	0
24 Ashtabula	05/14/1995	0000	Hail	1.75 in.	0	0	0	0
25 Stanley	08/27/1995	0457	Hail	1.00 in.	0	0	0	0
26 Cherry Valley	07/18/1996	11:57 PM	Hail	0.75 in.	0	0	0	0
27 Conneaut	07/29/1996	04:35 PM	Hail	0.75 in.	0	0	0	0
28 Orwell	08/15/1996	12:50 PM	Hail	1.00 in.	0	0	0	0
29 Pymatuning Lake	08/20/1996	03:33 PM	Hail	1.00 in.	0	0	0	0

30 Ashtabula	05/18/1997	11:55 PM	Hail	1.00 in.	0	0	0	0
31 Colebrook	05/31/1998	03:40 PM	Hail	1.00 in.	0	0	0	0
32 Conneaut	05/31/1998	03:40 PM	Hail	1.75 in.	0	0	0	0
33 Williamsfield	05/31/1998	03:45 PM	Hail	0.75 in.	0	0	0	0
34 Austinburg	05/31/1998	04:44 PM	Hail	0.75 in.	0	0	0	0
35 Kelloggsville	05/31/1998	04:44 PM	Hail	0.75 in.	0	0	0	0
36 Ashtabula	05/31/1998	04:49 PM	Hail	0.75 in.	0	0	0	0
37 Pierpont	05/31/1998	04:52 PM	Hail	0.75 in.	0	0	0	0
38 Andover	06/02/1998	02:45 PM	Hail	1.00 in.	0	0	0	0
39 Ashtabula	06/16/1998	01:50 PM	Hail	1.00 in.	0	0	0	0
40 Ashtabula	07/03/1999	03:22 PM	Hail	1.00 in.	0	0	0	0
41 Williamsfield	05/18/2000	05:40 PM	Hail	0.75 in.	0	0	0	0
42 Ashtabula	08/02/2000	02:35 PM	Hail	0.75 in.	0	0	0	0
43 Pierpont	08/02/2000	03:29 PM	Hail	1.75 in.	0	0	0	0
44 Conneaut	08/02/2000	08:08 PM	Hail	0.75 in.	0	0	0	0
45 Jefferson	08/31/2001	05:15 AM	Hail	1.00 in.	0	0	0	0
46 Kingsville	04/28/2002	01:00 PM	Hail	0.75 in.	0	0	5K	0
47 Jefferson	04/28/2002	12:05 PM	Hail	1.00 in.	0	0	5K	0
48 Jefferson	04/28/2002	12:12 PM	Hail	1.00 in.	0	0	5K	0
49 Jefferson	04/28/2002	12:15 PM	Hail	1.00 in.	0	0	10K	0
50 Pierpont	05/25/2002	07:55 PM	Hail	1.75 in.	0	0	50K	0
51 Pierpont	05/25/2002	08:00 PM	Hail	0.75 in.	0	0	10K	0
52 Richmond Center	05/25/2002	08:00 PM	Hail	0.75 in.	0	0	5K	0
53 Pierpont	06/04/2002	10:30 PM	Hail	1.00 in.	0	0	10K	0
54 Pierpont	06/05/2002	12:30 AM	Hail	0.75 in.	0	0	2K	0
55 Andover	08/12/2002	02:00 PM	Hail	1.00 in.	0	0	5K	0
56 Rock Creek	08/12/2002	12:50 PM	Hail	1.00 in.	0	0	5K	0
57 Munson Hill	05/06/2003	12:26 AM	Hail	0.88 in.	0	0	0	0
58 Ashtabula	08/16/2003	07:00 PM	Hail	0.75 in.	0	0	0	0
59 Ashtabula	08/16/2003	07:05 PM	Hail	1.00 in.	0	0	0	0
60 Orwell	05/21/2004	04:00 PM	Hail	0.75 in.	0	0	0	0
61 Rock Creek	05/27/2004	08:35 PM	Hail	0.75 in.	0	0	0	0

62 Jefferson	06/09/2004	03:30 PM	Hail	0.75 in.	0	0	0	0
63 Ashtabula	07/14/2004	03:15 AM	Hail	0.75 in.	0	0	0	0
64 Geneva	08/27/2004	03:35 PM	Hail	0.75 in.	0	0	0	0
TOTALS:					0	0	112K	0

Lightning								
Location or County	Date	Time	Type	Mag	Dth	Inj	PrD	CrD
1 Andover	07/16/1995	2200	Lightning	N/A	0	1	0	0
2 Pymatuning	06/24/1996	01:10 PM	Lightning	N/A	0	0	200K	0
3 Geneva	08/15/1996	03:00 PM	Lightning	N/A	0	0	5K	0
4 Conneaut	08/20/1996	07:00 PM	Lightning	N/A	0	0	2K	0
5 Lakeshore	07/03/1999	01:30 PM	Lightning	N/A	0	1	0	0
6 Lakeshore	07/03/1999	04:09 PM	Lightning	N/A	0	2	0	0
7 Jefferson	07/06/1999	04:05 PM	Lightning	N/A	0	0	0	0
TOTALS:					0	4	207K	0

Floods

Location or County	Date	Time	Type	Mag	Dth	Inj	PrD	CrD
1 Ashtabula	08/06/1993	2145	Flash Flood	N/A	0	0	5K	0
2 Countywide	11/17/1993	1030	Flash Flood	N/A	0	0	5K	0
3 Countywide	07/07/1994	1450	Flash Flood	N/A	0	0	50K	0
4 Countywide	08/13/1994	0710	Flash Flood	N/A	0	0	500K	0
5 Southern Part	06/03/1995	1320	Flash Flood	N/A	0	0	5K	0
6 Near New Lyme	07/25/1995	1545	Flash Flood	N/A	0	0	0	0
7 Conneaut	08/03/1995	1401	Flash Flood	N/A	0	0	20	0
8 Countywide	01/18/1996	12:00 PM	Flood	N/A	0	0	30K	0
9 Countywide	04/23/1996	08:45 AM	Flash Flood	N/A	0	0	5K	0
10 S Of Jefferson	05/10/1996	05:40 PM	Flash Flood	N/A	0	0	0	0
11 Northeast Half	05/10/1996	06:00 PM	Flash Flood	N/A	0	0	0	0
12 Andover	06/07/1996	08:10 PM	Flash Flood	N/A	0	0	10K	0
13 Colebrook	06/07/1996	08:10 PM	Flash Flood	N/A	0	0	0	0
14 Austinburg	06/12/1996	03:45 PM	Flash Flood	N/A	0	0	0	0
15 Northwest	06/19/1996	03:35 PM	Flash Flood	N/A	0	0	10K	0
16 Northwest	06/19/1996	08:30 PM	Flash Flood	N/A	0	0	10K	0
17 Countywide	05/18/1997	11:47 PM	Flash Flood	N/A	0	0	50K	0
18 Countywide	06/01/1997	02:00 PM	Flood	N/A	0	0	300K	0
19 Andover	06/25/1997	06:50 PM	Flood	N/A	0	0	50K	0
20 Countywide	01/07/1998	09:40 PM	Flood	N/A	0	0	0	0
21 Countywide	01/09/1998	02:26 AM	Flood	N/A	0	0	0	0
22 Conneaut	08/10/1998	07:00 AM	Flood	N/A	0	0	50K	0
23 Kingsville	01/23/1999	02:30 PM	Flash Flood	N/A	0	0	75K	0
24 Ashtabula	01/23/1999	12:00 PM	Flash Flood	N/A	0	0	75K	0
25 Countywide	08/02/2000	09:30 PM	Flash Flood	N/A	0	0	0	0
26 Countywide	09/15/2002	01:30 PM	Flash Flood	N/A	0	0	50K	0
27 Multiple Counties	06/12/2003	09:00 PM	Flood	N/A	0	0	900K	0
28 South Portion	07/21/2003	01:00 PM	Flash Flood	N/A	0	0	500K	0
29 Multiple Counties	07/23/2003	02:00 PM	Flood	N/A	0	0	350K	0

30 Countywide	05/21/2004	04:20 PM	Flash Flood	N/A	0	0	750K	0
31 Countywide	05/23/2004	12:00 AM	Flash Flood	N/A	0	0	100K	0
32 South Portion	06/09/2004	06:15 PM	Flash Flood	N/A	0	0	150K	0
33 Countywide	08/28/2004	09:58 AM	Flash Flood	N/A	0	0	200K	0
34 Countywide	09/08/2004	11:00 PM	Flash Flood	N/A	0	0	800K	0
35 Multiple Counties	01/01/2005	06:00 AM	Flood	N/A	0	0	5.4M	0
TOTALS:					0	0	10.430M	0

Tornadoes								
Location or County	Date	Time	Type	Mag	Dth	Inj	PrD	CrD
1 Countywide	07/08/1956	1430	Tornado	F2	0	0	250K	0
2 Countywide	04/29/1959	1915	Tornado	F0	0	0	3K	0
3 Countywide	04/16/1961	0530	Tornado	F1	0	0	250K	0
4 Countywide	04/19/1963	2130	Tornado	F2	0	0	25K	0
5 Countywide	07/24/1967	1400	Tornado	F2	0	2	250K	0
6 Countywide	08/07/1972	0402	Tornado	F1	0	0	25K	0
7 Countywide	05/31/1985	1459	Tornado	F4	0	0	250K	0
8 Countywide	05/31/1985	1514	Tornado	F3	0	10	2.5M	0
9 Countywide	05/31/1985	1528	Tornado	F2	0	15	2.5M	0
10 Countywide	06/22/1985	1535	Tornado	F2	0	2	250K	0
11 Countywide	06/10/1986	2200	Tornado	F1	0	0	25K	0
12 Countywide	07/25/1987	0700	Tornado	F1	0	0	25K	0
TOTALS:					0	29	6.353M	0

Droughts

Location or County	Date	Time	Type	Mag	Dth	Inj	PrD	CrD
1 Northern Ohio	09/01/1995	0000	Drought	N/A	0	0	0	0
2 Multiple Counties	08/01/1996	12:00 AM	Drought	N/A	0	0	0	0
3 Multiple Counties	07/01/1997	12:00 AM	Drought	N/A	0	0	0	0
4 Multiple Counties	06/01/1999	12:00 AM	Drought	N/A	0	0	0	0
5 Multiple Counties	07/01/1999	12:00 AM	Drought	N/A	0	0	0	0
6 Multiple Counties	08/01/1999	12:00 AM	Drought	N/A	0	0	0	0
7 Multiple Counties	09/01/1999	12:00 AM	Drought	N/A	0	0	0	200.0M
TOTALS:					0	0	0	200.000M

Earthquakes

Latitude (°N)	Longitude (°W)	Date	Time	Type	Mag	Dth	Inj	PrD	CrD
41.896	80.767	07/13/1987	05:49:17.4	mainshock	3.8	0	0	N/A	N/A
41.900	80.700	07/13/1987	07:52:12.0	aftershock	3.0	0	0	N/A	N/A
41.900	80.800	07/13/1987	13:05:00.0	aftershock	2.9	0	0	N/A	N/A
41.900	80.800	07/14/1987	14:51:10.0	aftershock	2.8	0	0	N/A	N/A
41.900	80.800	07/16/1987	04:49:40.0	aftershock	2.7	0	0	N/A	N/A
41.900	80.700	06/07/2000	06:19:18.8	GSC	2.0	0	0	N/A	N/A
41.900	80.700	06/07/2000	06:55:08.2	GSC	2.4	0	0	N/A	N/A
41.877	80.774	01/20/2001	02:05:07.0	foreshock	2.6	0	0	N/A	N/A
41.870	80.760	01/26/2001	03:03:20.6	mainshock	4.5	0	0	N/A	N/A
41.870	80.760	01/26/2001	05:36:53.0	aftershock	3.2	0	0	N/A	N/A
41.870	80.760	06/03/2001	22:36:46.4	aftershock	3.2	0	0	N/A	N/A
41.870	80.760	06/03/2001	08:27:15.0	aftershock	2.2	0	0	N/A	N/A

Waterspouts								
Location or County	Date	Time	Type	Mag	Dth	Inj	PrD	CrD
1 Lake Erie	09/02/1995	1000	Waterspouts	N/A	0	0	0	0
2 Lake Erie	10/07/1995	1910	Waterspouts	N/A	0	0	0	0
3 Offshore Conneaut	06/26/1996	03:30 PM	Waterspout	N/A	0	0	0	0
4 Lake Erie	07/26/1996	03:30 PM	Waterspout	N/A	0	0	0	0
5 Lake Erie	08/30/1996	07:00 AM	Waterspout	N/A	0	0	0	0
6 Conneaut	08/09/2000	05:34 PM	Waterspout	N/A	0	0	0	0
7 Conneaut	09/27/2001	05:15 PM	Waterspout	N/A	0	0	0	0
TOTALS:					0	0	0	0

KEY:

Mag: Magnitude

N/A: Non-Applicable (Droughts, Flooding, Lightning, Temperature Extremes, Thunderstorms, Snow and Ice)

F(X): Fujita Scale Rating designation for Tornadoes

in.: Inches in diameter measuring Hail

kts: Knots measuring degree of Wind

Dth: Deaths

Inj: Injuries

PrD: Property Damage

CrD: Crop Damage

**Appendix I:
Alternatives Matrix**

**ALL NATURAL HAZARD MITIGATION PLAN
Ashtabula County Core Group
Mitigation Alternatives Evaluation**

Directions for Filling out the Matrix

1. Look at each statement under each hazard separately. Follow the example provided under the first hazard listed.
2. When you are ready to fill in the matrix you will use a rating criterion from 1 to 5. (5 is considered the highest and most important ranking and 1 is considered the lowest ranking)
3. Please note that the first alternative under each hazard is “No Action”, which means the County will do nothing in terms of mitigation for this hazard. **You must rate the alternative “No Action”.**
4. Don’t worry about the Hazard Prioritization Column (we will take care of that).
5. Don’t total your scores. We will also take care of that component.
6. If you feel that any alternative does not apply to your community or is confusing, do not rate it and we can discuss at the next meeting.
7. If there are any questions concerning the alternatives or how to fill out the matrix, please contact me, Kari Mackenbach at (614) 470-9491 or e-mail me at kmackenbach@emht.com

For Example:

Under Winter Storms

One of the alternatives listed says:

Provide back-up generators for critical facilities, which need to maintain continuous power to protect human health and life.

To fill in the matrix you must ask yourself several questions while you are filling out the matrix.

Is this alternative cost effective? Place a rating in the box between 1 and 5

Is this alternative technically feasible? Place a rating in the box between 1 and 5

Is this alternative environmentally sound? Place a rating in the box between 1 and 5

Is this alternative socially equitable? Place a rating in the box between 1 and 5

**ALL NATURAL HAZARD MITIGATION PLAN
Ashtabula County Core Group
Mitigation Alternatives Evaluation**

Once you are finished filling out the matrix please mail the matrix to Heather Bowden at EMH&T. There is a self-addressed stamped envelope enclosed for your convenience. The following address should read:

Heather Bowden
EMH&T, Inc.
170 Mill Street
Gahanna, Ohio 43230

It is critical that you complete the matrix as quickly as possible so we can compile the information and analyze the data prior to the next meeting. The deadline for submittal of the matrix for your community is **Monday September 5, 2005**.

Our next meeting will be held on:

Wednesday, September 14, 2005
10:00 am
Ashtabula County EMA
25 West Jefferson Street
Jefferson, Ohio

Thanks for participating in the planning efforts! I look forward to seeing everyone on: **September 14, 2005!**

Sincerely,

Kari Mackenbach, CFM
Program Manager
Planning and Mitigation

Direct: (614) 470-9491
Fax: (614) 470-9594
kmackenbach@emht.com



August 12, 2005

Jim Wann
25 West Jefferson Street
Jefferson, Ohio 44047

Re: Hazard Mitigation Planning Alternatives Matrix

Dear Mr. Wann,

As a member of Ashtabula County's Natural Hazard Mitigation Plan Core Group, you are receiving a hazard mitigation alternatives matrix which was developed from the possible mitigation alternatives discussed at the Mitigation Alternatives Development meeting that was held on August 3, 2005. Each of you should fill out this matrix as it pertains to the County and your community. EMH&T will collect all communities' completed matrices and compile the results to be included in your County's All Natural Hazard Mitigation Plan that will be submitted to the Federal Emergency Management Agency (FEMA) for approval.

Please find the matrix attached to this letter, as well as directions for completing the matrix. EMH&T asks that you have the matrix completed by the date given at the end of the directions.

If you have any questions before the final meeting please do not hesitate to call or e-mail me.

Sincerely,

EVANS, MECHWART, HAMBLETON & TILTON, INC.

Kari Mackenbach, CFM
Program Manager
Planning and Mitigation

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Ashtabula County Matrix Results	Total
Severe Storms - Winter/Summer	
Develop a mapping system to identify existing shelters, where residents can go to seek safety in the event of severe weather. Coordinate with the American Red Cross (ARC) on identifying existing shelters.	16.2
Develop a public education program for informing residents about the benefits of having NOAA radios and Family Disaster Plans, which will help them better respond to an emergency situation.	15.7
Provide back-up generators for critical facilities, including shelters, which need to maintain continuous power to protect human health and life.	15.2
Coordinate with NWS to receive better coverage and earlier notification for Ashtabula County.	15.1
Provide an alternate potable water source in the event that existing water supplies are disrupted or contaminated.	14.4
Seek funding to acquire portable generators to loan out to critical facilities and shelters.	14.1
Upgrade existing and provide additional shelters where residents, especially the medically fragile, can seek safety from severe weather. Coordinate with the ARC to provide at least one shelter for each jurisdiction.	14.1
Coordinate with the ARC to develop a network of warehouses for storing essential disaster supplies (food, clothing and medical supplies), as well as processing donations, that would be distributed to shelters during and after an event.	14.1
Upgrade the radio communications system throughout the County for all public safety services.	13.6
Seek funding to increase manpower and equipment for cities, townships and villages for snow and debris removal.	13.5
Develop a public education program for informing residents of the hazards associated with severe weather, such as medical conditions and driving conditions, as well as what to do after an event occurs.	13.5
Provide designated locations/facilities to house displaced animals after severe storm events.	13.3
Develop a public education program for residences and businesses concerning the dangers of fuel tanks (e.g. securing them to a permanent structure, ensuring adequate tank structure strength.)	13.3
Seek funding to develop a Volunteer Reception Center for coordinating volunteers who are willing to help with the response of a severe weather incident.	13.2
Seek funding to provide financial assistance for the construction of permanent storm shelters in mobile home parks and campgrounds, where citizens may seek safety.	12.9
Seek funding to restore historical sites, if they suffer severe damage from a severe weather event.	12.6
Seek funding to purchase additional communication equipment for use by the EMA in communicating with relief workers.	12.2
Seek funding for retrofitting existing structures to make them storm-ready.	12.2
Provide means for mass animal carcass disposal to prevent spread of disease after a severe weather event.	12.1
Develop a tree maintenance program for trimming and pruning trees to help prevent damage from falling limbs.	11.8
Coordinate with the Building Department to evaluate the potential of requiring storm-ready shelters as part of residential and commercial structures.	11.5
Implement adequate planning, assessment and preventative measures of resources (ie training, equipment and manpower) for fighting wildland fires	11.2
Develop a public outreach campaign to inform residents on who and when to call for debris removal in a public right-of-way.	10.9
Seek funding to install and/or evaluate new infrastructure in areas susceptible to low level flooding and ponding of rainfall, outside of the 100-year floodplain.	10.5
Develop a procedure on where to place the snow from public infrastructure during critical snow removal timeframes.	10.1
No Action.	6.2
Flooding - 100-year flooding and flash flooding	
Develop a mapping system to identify existing shelters, where residents can go to seek safety in the event of severe weather. Coordinate with the ARC on identifying existing shelters.	15.3
Seek funding to coordinate with the ARC to develop a warehousing network for storing essential disaster supplies (food, clothing and medical supplies), as well as processing donations, that would be distributed to shelters during and after an event.	14.7
Provide NOAA weather radios for all critical facilities within the County.	14.6
Provide an alternate potable water source in the event that existing water supplies are disrupted or contaminated.	14.6
Develop a public education program for informing residents about the benefits of having NOAA radios and Family Disaster Plans, which will help them better respond to an emergency situation.	14.5
Identify and provide warning signage and/or roadway markings for roadways that are susceptible to repeated flooding regardless of the amount of rainfall.	14.5
Repair and replace bridges and levees that suffer damage from a severe storm/flooding event.	14.3
Provide back-up generators for critical facilities, including shelters, which need to maintain continuous power to protect human health and life.	14.1
Upgrade the radio communications system throughout the County for all public safety services.	14.0
Coordinate with the Building Department to evaluate the potential of requiring propane and gasoline tanks to be adequately anchored as part of residential and commercial structures	13.9
Upgrade existing and provide additional shelters where residents, especially the medically fragile, can seek safety from severe weather. Coordinate with the ARC to provide at least one shelter for each jurisdiction.	13.8

Ashtabula County Matrix Results	Total
Seek funding to develop a Volunteer Reception Center for coordinating volunteers who are willing to help with the mitigation of a severe weather/flooding incident.	13.5
Seek funding to identify, map and maintain existing critical culverts and storm drainage ditches near residential areas, roadways and low lying areas throughout the County.	13.5
Seek funding to increase manpower and equipment for townships, cities and villages for debris removal.	13.3
Develop a public education program for informing residents of the hazards associated with severe weather and flooding, such as medical conditions and driving conditions, as well as what to do after an event occurs.	13.3
Seek funding to acquire portable generators to loan out to first responder authorities.	13.0
Provide designated locations/facilities to house displaced animals after severe storm/flooding events.	13.0
Develop a public education program for residences and businesses concerning the dangers of fuel tanks (e.g. securing them to a permanent structure, ensuring adequate tank structure strength.)	12.8
Seek funding to elevate roadways that suffer repeat flooding to maintain traffic access to the area.	12.2
Provide means for mass animal carcass disposal to prevent spread of disease after a severe weather/flooding event.	12.1
Seek funding to purchase additional communication equipment for use by the EMA in communicating with relief workers.	12.1
Seek funding to review and revise existing storm water ordinances and resolutions to address existing and/or proposed developments.	11.5
Seek funding to restore or mitigate historical sites if they suffer severe damage from a severe weather event.	11.3
Evaluate the potential to re-study problem areas with the County as it relates to flooding.	11.0
Seek funding to upgrade existing and install new detention basins to prevent flooding downstream of existing developments.	10.9
Develop a stream maintenance and educational outreach program.	10.8
Coordinate with responsible agencies on developing a program to prevent and/or alleviate ice jams.	10.8
Seek funding to study upstream areas and existing problem flooding areas to determine whether or not a new detention basins would alleviate the flooding problem.	10.5
Seek funding to install new infrastructure in areas susceptible to low level flooding and ponding, outside of the 100-year floodplain.	9.1
No Action.	6.1
Lake and Stream Bank Erosion	
Evaluate runoff (surface drainage) problems in the County and how these problems affect erosion.	12.2
Develop an outreach program to work with private properties along the shoreline to give them direction and resources on what is available to them as it relates to help with their erosion problems.	12.0
Seek funding to evaluate Lake Erie shore erosion in Ashtabula County.	11.9
Provide an alternate potable water source in the event that existing water supplies are disrupted or wells run dry.	N/A
No Action.	1.9
Tornadoes	
Evaluate the school systems within Ashtabula County to ensure proper awareness and ability to the reaction of tornadoes.	16.2
Develop a mapping system to identify existing shelters, where residents can go to seek safety in the event of severe weather. Coordinate with the ARC on identifying existing shelters.	15.7
Provide back-up generators for critical facilities, including shelters, which need to maintain continuous power to protect human health and life.	15.5
Develop a public education program for informing residents about the benefits of having NOAA radios and Family Disaster Plans, which will help them better respond to an emergency situation.	15.2
Provide/Encourage NOAA weather radios for all critical facilities within the County.	15.2
Upgrade existing and provide additional shelters where residents, especially the medically fragile, can seek safety from severe weather. Coordinate with the ARC to provide at least one shelter for each jurisdiction.	14.9
Provide an alternate potable water source in the event that existing water supplies are disrupted or contaminated.	14.8
Develop a public education program on how to run a generator for a personal residence.	14.5
Coordinate with the ARC to develop a warehousing network for storing essential disaster supplies (food, clothing and medical supplies), as well as processing donations, that would be distributed to shelters during and after an event.	14.3
Develop a public education program for informing residents of the hazards associated with tornadoes, such as medical conditions and driving conditions, as well as what to do after an event occurs.	14.2
Seek funding to provide financial assistance for permanent shelters for mobile home parks and campgrounds, where citizens may seek safety.	13.9
Seek funding to acquire portable generators to loan out to first responder authorities.	13.8
Seek funding to increase manpower and equipment for townships, cities and villages for debris removal.	13.6
Develop a public education program for residences and businesses concerning the dangers of fuel tanks (e.g. securing them to a permanent structure, ensuring adequate tank structure strength.)	13.4

Ashtabula County Matrix Results	Total
Provide designated locations/facilities to house displaced animals after a torando.	13.0
Provide means for mass animal carcass disposal to prevent spread of disease after a tornado.	13.0
Coordinate with private merchants within the County to have contingency plans during and after disasters to remain open to the public	13.0
Upgrade the radio communications system throughout the County for all public safety services.	12.4
Seek funding to develop a Volunteer Reception Center for coordinating volunteers who are willing to help with the response of a severe weather incident.	12.2
Seek funding to purchase additional communication equipment for use by the EMA in communicating with relief workers.	12.2
Install an interoperable siren system that would alert residents of approaching severe weather or other emergencies.	12.1
Seek funding to restore historical sites if they suffer severe damage from a tornado.	11.9
Develop a debris management program.	11.4
Develop a tree maintenance program for trimming and pruning trees to help prevent damage from falling limbs.	11.1
No Action.	6.7
Droughts - Excessive Heat and Extreme Cold	
Coordinate with the GIS Department and develop a mapping project of all the dry hydrants located within the County.	15.4
Develop a public education program concerning the hazards associated with droughts and the water restrictions that should be followed during drought conditions.	15.3
Establish an enforceable open burning ban to be implemented during droughts.	14.6
Create a public education and awareness of droughts and what to do during one. Educate residents on the proper use of air conditioners etc and how they cause brown outs.	14.6
Provide an alternate potable water source in the event that existing water supplies are disrupted or wells run dry.	N/A
Evaluate the need for adequate planning, specifically as it relates to fire fighting of wildland fires.	14.6
Provide an alternate potable water source in the event that existing water supplies are disrupted or wells run dry.	14.4
Develop and implement a domestic water management/conservation program.	14.2
Develop and implement a plan to process donations, acquire feeds and provide potable water supplies for livestock during a drought.	14.2
Seek funding to promote the use of dry hydrants as well as the existing programs available.	12.4
Provide back-up generators for critical facilities, including shelters, which need to maintain continuous power to protect human health and life.	11.5
No Action.	5.4
Earthquakes	
Provide an alternate potable water source in the event that existing water supplies are disrupted or wells run dry.	13.4
Provide back-up generators for critical facilities, including shelters, which need to maintain continuous power to protect human health and life.	13.2
Seek funding to develop a Volunteer Reception Center for coordinating volunteers who are willing to help with the mitigation of an earthquake.	12.7
Seek funding to increase manpower and equipment for townships, cities and villages for debris removal.	12.5
Seek funding to restore historical sites if they suffer severe damage from a severe weather event.	11.9
Upgrade the radio communications system throughout the County for all public safety services.	11.8
Develop a public education program concerning the hazards associated with earthquakes, as well as a homeowner's option to purchase earthquake insurance.	11.6
No Action.	5.8
Water Spouts	
Develop an educational outreach program about severe storms on the lake which would include waterspouts.	13.0
Coordinate with Lake Erie Coastal Communities on lake safety for tourists.	12.3
Promote existing educational opportunities about waterspouts.	12.2
No Action.	6.8

**Appendix J:
Action Plan**

Ashtabula County Action Plan							Hazard Prioritization	Activity Rating	Implementation Schedule(Year)	Funding	Responsible Agency	Hazard Prioritization	Activity Rating	Implementation Schedule(Year)	Funding	Responsible Agency	
Severe Storms - Winter/Summer																	
No Action.	7	6.2	N/A	N/A	N/A	Develop a public education program for residences and businesses concerning the dangers of fuel tanks (e.g. securing them to a permanent structure, ensuring adequate tank structure strength.)	7	13.3	2007	State or Federal sources	EMA / Building Department						
Develop a mapping system to identify existing shelters, where residents can go to seek safety in the event of severe weather. Coordinate with the American Red Cross (ARC) on identifying existing shelters.	7	16.2	2006/2007	State or Federal sources	Information Technology / ARC	Seek funding to develop a Volunteer Reception Center for coordinating volunteers who are willing to help with the response of a severe weather incident.	7	13.2	2007	State or Federal sources	EMA / ARC						
Develop a public education program for informing residents about the benefits of having NOAA radios and Family Disaster Plans, which will help them better respond to an emergency situation.	7	15.7	2006/2007	State or Federal sources	EMA / local jurisdictions	Seek funding to provide financial assistance for the construction of permanent storm shelters in mobile home parks and campgrounds, where citizens may seek safety.	7	12.9	2008	State or Federal sources	County Departments						
Provide back-up generators for critical facilities, including shelters, which need to maintain continuous power to protect human health and life.	7	15.2	2007	State or Federal sources	County Commissioner departments	Seek funding to restore historical sites, if they suffer severe damage from a severe weather event.	7	12.6	2008	State or Federal sources	County Departments						
Coordinate with NWS to receive better coverage and earlier notification for Ashtabula County.	7	15.1	2007	existing budget	EMA	Seek funding to purchase additional communication equipment for use by the EMA in communicating with relief workers.	7	12.2	2007	State or Federal sources	EMA						
Provide an alternate potable water source in the event that existing water supplies are disrupted or contaminated.	7	14.4	2007	State or Federal sources	EMA / Health Departments	Seek funding for retrofitting existing structures to make them storm-ready.	7	12.2	2007/2008	State or Federal sources	County Departments						
Seek funding to acquire portable generators to loan out to critical facilities and shelters.	7	14.1	2007/2008	State or Federal sources	EMA	Provide means for mass animal carcass disposal to prevent spread of disease after a severe weather event.	7	12.1	2007	State or Federal sources	OSU Extension						
Upgrade existing and provide additional shelters where residents, especially the medically fragile, can seek safety from severe weather. Coordinate with the ARC to provide at least one shelter for each jurisdiction.	7	14.1	2007/2008	State or Federal sources	EMA / Health Departments / ARC	Develop a tree maintenance program for trimming and pruning trees to help prevent damage from falling limbs.	7	11.8	2007	State or Federal sources	Engineers' Office / EMA						
Coordinate with the ARC to develop a network of warehouses for storing essential disaster supplies (food, clothing and medical supplies), as well as processing donations, that would be distributed to shelters during and after an event.	7	14.1	2006/2007	State or Federal sources	EMA / Health Departments / ARC	Coordinate with the Building Department to evaluate the potential of requiring storm-ready shelters as part of residential and commercial structures.	7	11.5	2007	county	County Departments / EMA						
Upgrade the radio communications system throughout the County for all public safety services.	7	13.6	2006/2007/2008	State or Federal sources	EMA / County Commissioners	Implement adequate planning, assessment and preventative measures of resources (ie training, equipment and manpower) for fighting wildland fires	7	11.2	2007	State or Federal sources	EMA / local Fire Departments						
Seek funding to increase manpower and equipment for cities, townships and villages for snow and debris removal.	7	13.5	2006/2007	State or Federal sources	local jurisdictions	Develop a public outreach campaign to inform residents on who and when to call for debris removal in a public right-of-way.	7	10.9	2007	State or Federal sources	Engineers' Office / EMA						
Develop a public education program for informing residents of the hazards associated with severe weather, such as medical conditions and driving conditions, as well as what to do after an event occurs.	7	13.5	2006/2007	State or Federal sources	EMA / Health Departments / ARC	Seek funding to install and/or evaluate new infrastructure in areas susceptible to low level flooding and ponding of rainfall, outside of the 100-year floodplain.	7	10.5	2008	State or Federal sources	Engineers' Office / EMA						
Provide designated locations/facilities to house displaced animals after severe storm events.	7	13.3	2007	State or Federal sources	OSU Extension / EMA	Develop a procedure on where to place the snow from public infrastructure during critical snow removal timeframes.	7	10.1	2007	county	Engineers' Office / EMA						

Ashtabula County Action Plan		Hazard Prioritization	Activity Rating	Implementation Schedule(Year)	Funding	Responsible Agency	Hazard Prioritization	Activity Rating	Implementation Schedule(Year)	Funding	Responsible Agency
Flooding - 100-year zone and flash flooding											
No Action.	6	6.1	N/A	N/A	N/A	Develop a public education program for informing residents of the hazards associated with severe weather and flooding, such as medical conditions and driving conditions, as well as what to do after an event occurs.	6	13.3	2006/2007	State or Federal sources	EMA / Health Departments / ARC
Develop a mapping system to identify existing shelters, where residents can go to seek safety in the event of severe weather. Coordinate with the ARC on identifying existing shelters.	6	15.3	2007	State or Federal sources	Information Technology / ARC	Seek funding to acquire portable generators to loan out to first responder authorities.	6	13.0	2008	State or Federal sources	EMA
Seek funding to coordinate with the ARC to develop a warehousing network for storing essential disaster supplies (food, clothing and medical supplies), as well as processing donations, that would be distributed to shelters during and after an event.	6	14.7	2007	State or Federal sources	EMA / Health Departments / ARC	Provide designated locations/facilities to house displaced animals after severe storm/flooding events.	6	13.0	2008	State or Federal sources	OSU Extension
Provide NOAA weather radios for all critical facilities within the County.	6	14.6	2008	State or Federal sources	EMA	Develop a public education program for residences and businesses concerning the dangers of fuel tanks (e.g. securing them to a permanent structure, ensuring adequate tank structure strength.)	6	12.8	2008	State or Federal sources	Building Department / EMA
Provide an alternate potable water source in the event that existing water supplies are disrupted or contaminated.	6	14.6	2007	State or Federal sources	EMA / Health Departments	Seek funding to elevate roadways that suffer repeat flooding to maintain traffic access to the area.	6	12.2	2008	State or Federal sources	Engineers' Office / EMA
Develop a public education program for informing residents about the benefits of having NOAA radios and Family Disaster Plans, which will help them better respond to an emergency situation.	6	14.5	2007	State or Federal sources	EMA	Provide means for mass animal carcass disposal to prevent spread of disease after a severe weather/flooding event.	6	12.1	2008	State or Federal sources	OSU Extension
Identify and provide warning signage and/or roadway markings for roadways that are susceptible to repeated flooding regardless of the amount of rainfall.	6	14.5	2007	State or Federal sources	County Departments	Seek funding to purchase additional communication equipment for use by the EMA in communicating with relief workers.	6	12.1	2007	State or Federal sources	EMA
Repair and replace bridges and levees that suffer damage from a severe storm/flooding event.	6	14.3	2008	State or Federal sources	Engineers' Office	Seek funding to review and revise existing storm water ordinances and resolutions to address existing and/or proposed developments.	6	11.5	2007	State or Federal sources	County Departments
Provide back-up generators for critical facilities, including shelters, which need to maintain continuous power to protect human health and life.	6	14.1	2008	State or Federal sources	EMA	Seek funding to restore or mitigate historical sites if they suffer severe damage from a severe weather event.	6	11.3	2008	State or Federal sources	County Departments
Upgrade the radio communications system throughout the County for all public safety services.	6	14.0	2007/2008	State or Federal sources	County Departments	Evaluate the potential to re-study problem areas with the County as it relates to flooding.	6	11.0	2007	existing budgets	EMA / County Departments
Coordinate with the Building Department to evaluate the potential of requiring propane and gasoline tanks to be adequately anchored as part of residential and commercial structures	6	13.9	2007	existing budget	EMA / County Commissioners	Seek funding to upgrade existing and install new detention basins to prevent flooding downstream of existing developments.	6	10.9	2008	State or Federal sources	Engineers' Office / EMA
Upgrade existing and provide additional shelters where residents, especially the medically fragile, can seek safety from severe weather. Coordinate with the ARC to provide at least one shelter for each jurisdiction.	6	13.8	2008	State or Federal sources	EMA / Health Departments / ARC	Develop a stream maintenance and educational outreach program.	6	10.8	2008	State or Federal sources	county Departments
Seek funding to develop a Volunteer Reception Center for coordinating volunteers who are willing to help with the mitigation of a severe weather/flooding incident.	6	13.5	2008	existing budgets	EMA / ARC	Coordinate with responsible agencies on developing a program to prevent and/or alleviate ice jams.	6	10.8	2007	existing budgets	USACE / EMA
Seek funding to identify, map and maintain existing critical culverts and storm drainage ditches near residential areas, roadways and low lying areas throughout the County.	6	13.5	2008	State or Federal sources	Engineers' Office	Seek funding to study upstream areas and existing problem flooding areas to determine whether or not a new detention basins would alleviate the flooding problem.	6	10.5	2008	State or Federal sources	County Departments
Seek funding to increase manpower and equipment for townships, cities and villages for debris removal.	6	13.3	2007	existing budgets	local jurisdictions	Seek funding to install new infrastructure in areas susceptible to low level flooding and ponding, outside of the 100-year floodplain.	6	9.1	2009	State or Federal sources	county departments

Ashtabula County Action Plan											
	Hazard Prioritization	Activity Rating	Implementation Schedule(Year)	Funding	Responsible Agency		Hazard Prioritization	Activity Rating	Implementation Schedule(Year)	Funding	Responsible Agency
Lake and Stream Bank Erosion						Tornadoes					
No Action.	5	1.9	N/A	N/A	N/A	Develop a public education program for informing residents of the hazards associated with tornadoes, such as medical conditions and driving conditions, as well as what to do after an event occurs.	4	14.2	2007	State or Federal sources	EMA / Health Departments / ARC
Evaluate runoff (surface drainage) problems in the County and how these problems affect erosion.	5	12.2	2007	existing budgets	county agencies	Seek funding to provide financial assistance for permanent shelters for mobile home parks and campgrounds, where citizens may seek safety.	4	13.9	2008	State or Federal sources	EMA / Health Departments / ARC
Develop an outreach program to work with private properties along the shoreline to give them direction and resources on what is available to them as it relates to help with their erosion problems.	5	12.0	2008	State or Federal sources	County Departments	Seek funding to acquire portable generators to loan out to first responder authorities.	4	13.8	2007	State or Federal sources	EMA
Seek funding to evaluate Lake Erie shore erosion in Ashtabula County.	5	11.9	2007	State or Federal sources	county agencies	Seek funding to increase manpower and equipment for townships, cities and villages for debris removal.	4	13.6	2007	State or Federal sources	local jurisdictions
Tornadoes						Develop a public education program for residences and businesses concerning the dangers of fuel tanks (e.g. securing them to a permanent structure, ensuring adequate tank structure strength.)	4	13.4	2008	State or Federal sources	county departments
No Action.	4	6.7	N/A	N/A	N/A	Provide designated locations/facilities to house displaced animals after a tornado.	4	13.0	2008	State or Federal sources	OSU Extension
Evaluate the school systems within Ashtabula County to ensure proper awareness and ability to the reaction of tornadoes.	4	16.2	2007	State or Federal sources	EMA / county and local school districts	Provide means for mass animal carcass disposal to prevent spread of disease after a tornado.	4	13.0	2008	State or Federal sources	OSU Extension
Develop a mapping system to identify existing shelters, where residents can go to seek safety in the event of severe weather. Coordinate with the ARC on identifying existing shelters.	4	15.7	2007	State or Federal sources	IT / ARC / EMA	Coordinate with private merchants within the County to have contingency plans during and after disasters to remain open to the public.	4	13.0	2007/2008	State or Federal sources	EMA / ARC
Provide back-up generators for critical facilities, including shelters, which need to maintain continuous power to protect human health and life.	4	15.5	2008	State or Federal sources	EMA	Upgrade the radio communications system throughout the County for all public safety services.	4	12.4	2007/2008	State or Federal sources	county departments
Develop a public education program for informing residents about the benefits of having NOAA radios and Family Disaster Plans, which will help them better respond to an emergency situation.	4	15.2	2006/2007	State or Federal sources	EMA / NWS	Seek funding to develop a Volunteer Reception Center for coordinating volunteers who are willing to help with the response of a severe weather incident.	4	12.2	2007	State or Federal sources	EMA / ARC
Provide/Encourage NOAA weather radios for all critical facilities within the County.	4	15.2	2008	State or Federal sources	EMA / NWS	Seek funding to purchase additional communication equipment for use by the EMA in communicating with relief workers.	4	12.2	2007	State or Federal sources	EMA
Upgrade existing and provide additional shelters where residents, especially the medically fragile, can seek safety from severe weather. Coordinate with the ARC to provide at least one shelter for each jurisdiction.	4	14.9	2007/2008	State or Federal sources	EMA / Health Departments / ARC	Install an interoperable siren system that would alert residents of approaching severe weather or other emergencies.	4	12.1	2009	State or Federal sources	County and local jurisdictions
Provide an alternate potable water source in the event that existing water supplies are disrupted or contaminated.	4	14.8	2007	State or Federal sources	EMA / Health Departments / ARC	Seek funding to restore historical sites if they suffer severe damage from a tornado.	4	11.9	2008	State or Federal sources	county departments
Develop a public education program on how to run a generator for a personal residence.	4	14.5	2007	existing budgets	EMA / Health Departments / ARC	Develop a debris management program.	4	11.4	2007	State or Federal sources	EMA
Coordinate with the ARC to develop a warehousing network for storing essential disaster supplies (food, clothing and medical supplies), as well as processing donations, that would be distributed to shelters during and after an event.	4	14.3	2007	State or Federal sources	EMA / Health Departments / ARC	Develop a tree maintenance program for trimming and pruning trees to help prevent damage from falling limbs.	4	11.1	2008	State or Federal sources	Engineers' Office / EMA

Ashtabula County Action Plan											
	Hazard Prioritization	Activity Rating	Implementation Schedule(Year)	Funding	Responsible Agency		Hazard Prioritization	Activity Rating	Implementation Schedule(Year)	Funding	Responsible Agency
Droughts - Excessive Heat and Extreme Cold											
No Action.	3	5.4	N/A	N/A	N/A	Provide an alternate potable water source in the event that existing water supplies are disrupted or wells run dry.	3	14.4	2007	State or Federal sources	EMA / Health Departments
Coordinate with the GIS Department and develop a mapping project of all the dry hydrants located within the County.	3	15.4	2008	State or Federal sources	EMA / IT / Fire Departments	Develop and implement a domestic water management/conservation program.	3	14.2	2008	State or Federal sources	County and local water districts
Develop a public education program concerning the hazards associated with droughts and the water restrictions that should be followed during drought conditions.	3	15.3	2007	State or Federal sources	EMA / local Fire Departments	Develop and implement a plan to process donations, acquire feeds and provide potable water supplies for livestock during a drought.	3	14.2	2008	State or Federal sources	OSU Extension
Establish an enforceable open burning ban to be implemented during droughts.	3	14.6	2008	State or Federal sources	local Fire Departments / State legislators	Seek funding to promote the use of dry hydrants as well as the existing programs available.	3	12.4	2007	State or Federal sources	EMA / local Fire Departments
Create a public education and awareness of droughts and what to do during one. Educate residents on the proper use of air conditioners etc and how they cause brown outs.	3	14.6	2007	State or Federal sources	EMA / local Fire Departments	Provide back-up generators for critical facilities, including shelters, which need to maintain continuous power to protect human health and life.	3	11.5	2008	State or Federal sources	EMA
Evaluate the need for adequate planning, specifically as it relates to fire fighting of wildland fires.	3	14.6	2007	existing budgets	EMA / local Fire Departments						
Earthquakes							Water Spouts				
No Action.	2	5.8	N/A	N/A	N/A	No Action.	1	6.8	N/A	N/A	N/A
Provide an alternate potable water source in the event that existing water supplies are disrupted or wells run dry.	2	13.4	2007	State or Federal sources	EMA / Health Departments	Develop an educational outreach program about severe storms on the lake which would include waterspouts.	1	13.0	2007	State or Federal sources	county departments / USCG
Provide back-up generators for critical facilities, including shelters, which need to maintain continuous power to protect human health and life.	2	13.2	2008	State or Federal sources	EMA	Coordinate with Lake Erie Coastal Communities on lake safety for tourists.	1	12.3	2007	State or Federal sources	county departments / USCG
Seek funding to develop a Volunteer Reception Center for coordinating volunteers who are willing to help with the mitigation of an earthquake.	2	12.7	2008	State or Federal sources	EMA / ARC	Promote existing educational opportunities about waterspouts.	1	12.2	2008	existing budgets	county departments
Seek funding to increase manpower and equipment for townships, cities and villages for debris removal.	2	12.5	2008	State or Federal sources	local jurisdictions						
Seek funding to restore historical sites if they suffer severe damage from a severe weather event.	2	11.9	2008	State or Federal sources	County Departments						
Upgrade the radio communications system throughout the County for all public safety services.	2	11.8	2007	State or Federal sources	County Departments						
Develop a public education program concerning the hazards associated with earthquakes, as well as a homeowner's option to purchase earthquake insurance.	2	11.6	2008	State or Federal sources	EMA / ARC						

Appendix K: References

General References

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- www.census.gov – Main US Census website
- www.odod.ohio.gov/research/Productlisting.html - Ohio Department of Development
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- <http://www4.ncdc.noaa.gov/cgi-win/wwwcgi.dll?wwevent~storms> – NCDC storm events database
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- <http://ohioline.osu.edu/> - Ohio State University Extension College of Food, Agriculture and Environmental Sciences
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- www.puc.state.oh.us – Public Utilities Commission of Ohio
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- www.oh.nrcs.usda.gov – United States Department of Agriculture National Resource Conservation Service

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