

# A Flood Mitigation Plan for the Non-Tidal N.J. Section of the Delaware River Basin



Warren County Kick-off Meeting  
December 7, 2006

# The Delaware River....

**crosses many boundaries**

- Four states: DE, PA, NJ, NY
- 25 congressional districts
- 2 FEMA Regions
- 2 EPA Regions
- 5 USGS offices
- 4 NRCS state offices
- 42 counties
- 838 municipalities

**.... coordination is critical for effective flood loss reduction**



September 2004

April 2005

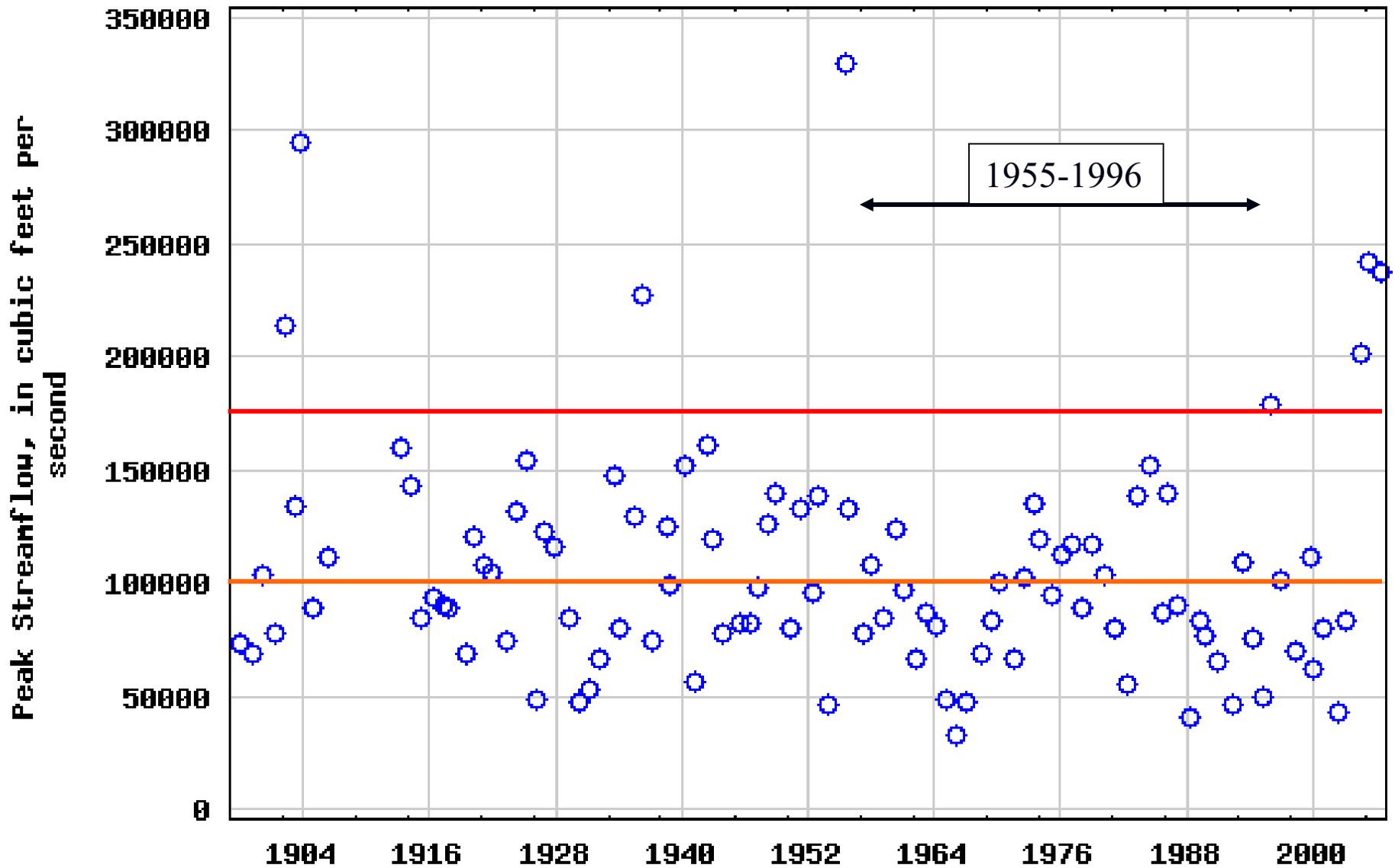
June 2006



Easton, PA – April 2005 - Photo by Bill Ward – USGS New Jersey Dist.

Three Major Floods along the Main Stem  
Delaware River in less than Two Years

# USGS 01463500 DELAWARE RIVER AT TRENTON NJ



- We need to plan based on the range of conditions, not averages.
- Floods will occur. We can not stop the flood waters, but we can reduce the losses and damages from flooding. A floodplain is a natural extension of a river. It should be expected to flood.
- No one set of mitigation measures will stop flooding along the Delaware. It is only through a combination of *regional and local* measures that the impacts of flooding will be reduced.

# Current Ongoing Initiatives

- Delaware River Basin Interstate Flood Mitigation Task Force (DRBC)
- Flood Analysis Model (DRBC)
- Interim Spill Mitigation Program (DRBC)
- Multi-Jurisdictional Use and Management of Water Resources for the Delaware River Basin, NY, PA, NJ & DE (US Army Corps of Engineers, DRBC)
- Delaware River Flood Risk Verification Study (FEMA Region III)

# Current Ongoing Initiatives -Continued-

- Interim Feasibility Study for New Jersey (NJDEP, US Army Corps of Engineers)
- Updated Floodplain Mapping (NJDEP)
- Updated Flood Hazard Area Control Act Rules (NJDEP)
- Multi-Jurisdictional Flood Mitigation Plan (DRBC, NJDEP, NJOEM)



## Proposed Study Area:

Municipalities located in the non-tidal, NJ section of the Delaware River Basin.

### Hunterdon:

16 Municipalities

### Mercer:

9 Municipalities

### Sussex:

17 Municipalities

### Warren:

22 Municipalities

### Total:

64 municipalities





# Comprehensive Flood Mitigation



# The Benefits and Importance of a Flood Mitigation Plan:

- It will identify areas vulnerable to flooding,
- It will identify actions that can be taken to reduce damages to life and property; such as buying or elevating buildings subject to repeat flooding;
- It will contain a prioritized list of local mitigation sources to influence funding sources.
- It will enable your municipality to become eligible for federal funds aimed at flood mitigation

## Answers to a Few Important Questions

1. What will the final plan look like?
2. What is the proposed planning process and anticipated timeline?
3. What help will be provided?
4. What is required of our municipality to participate?

1 . . . . . 2 . . . . . 3 . . . . . 4 . . . . . 5 . . . . . 6 . . . . . 7 . . . . .

## A Multi-Jurisdictional Flood Mitigation Plan for the Non-Tidal N.J. Section of the Delaware River Basin

### -Table of Contents-

#### Executive Summary

#### Section 1: Introduction

*(DRBC will draft)*

Purpose and Scope of Plan .....

About the Delaware River Basin .....

Profile of the Study Area .....

Organization of the Plan .....

#### Section 2: Planning Process

*(DRBC will draft, local data included)*

Preparation of the Plan .....

The Regional Planning Team .....

Meetings and Workshops .....

Municipal Participation .....

Involving the Public .....

Involving Stakeholders .....

Review and Incorporation of Existing Information .....

#### Section 3: Hazard Identification and Analysis

*(DRBC will draft, local data included)*

Description of Existing Hazard .....

History of Past Events .....

Location of Hazardous Areas .....

Probability of Future Occurrence .....

#### Section 4: Vulnerability Assessment

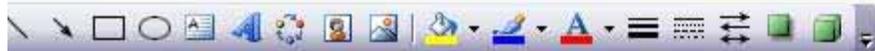
*(DRBC will complete based on local survey data)*

Overview .....

Identifying People and Property at Risk .....

Estimating Potential Damages and Losses .....

Analyzing Land Use and Development Trends .....



/3 At 1.1" Ln 1 Col 1 REC TRK EXT OVR



**Section 5: Capability Assessment** *(DRBC/NJDEP will compile based on local survey)*

- Local Capabilities .....
- County Capabilities .....
- Delaware River Basin Commission Capabilities .....
- State and Federal Capabilities .....
- Conclusion .....

**Section 6: Mitigation Strategy** *(DRBC/NJDEP will draft based on County/Municipal input)*

- Mitigation Vision, Goals and Objectives .....
- Identification and Analysis of Mitigation Measures .....
- Prioritization Process .....

**Section 7: Basinwide Mitigation Actions** *(DRBC will draft based on County/Regional input)*

- Collective Mitigation Actions .....
- DRBC Mitigation Actions .....

**Section 8: Mitigation Actions of each Jurisdiction** *(County/Municipal responsibility)*

- Hunterdon County .....
- Alexandria Township .....
- Bethlehem Township .....

**A Multi-Jurisdictional Flood Mitigation Plan for the  
Non-Tidal N.J. Section of the Delaware River Basin**

- Bloomsbury Borough .....
- Delaware Township .....



# Mitigation Actions can Include:

- Stormwater improvements
- Acquisition and elevation programs
- Structural projects
- Flood Preparedness/warning
- Strengthening of local floodplain or other regulations
- Training
- Public information/community outreach
- Dam inundation mapping

# Three Planning Levels to this Initiative

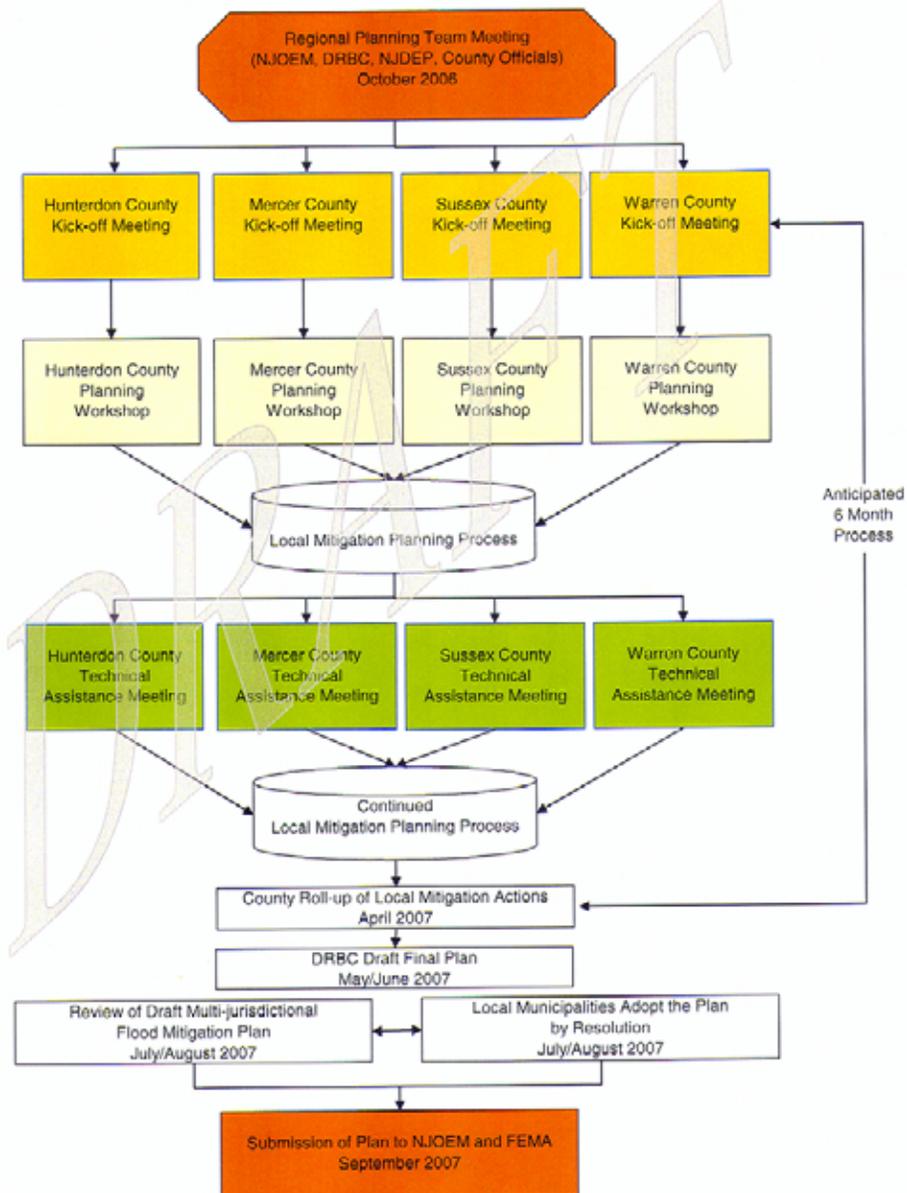


Lambertville, NJ - April 2005

- Local Municipalities
- Regional Planning Team
- Project Management Team

**A Multi-Jurisdictional Flood Mitigation Plan for the  
Non-Tidal N.J. Section of the Delaware River Basin**

**-Planning Process-**





**Delaware River Basin Commission**  
DELAWARE · NEW JERSEY  
PENNSYLVANIA · NEW YORK  
UNITED STATES OF AMERICA

## Welcome to the Delaware River Basin Commission's Web Site

**"A river is more than an amenity, it is a treasure."  
*(U.S. Supreme Court Justice Oliver Wendell Holmes,  
1931 Delaware River Diversion Case)***



- What We Do
- Who We Are
- Where We Are
- Delaware Estuary Program
- Basin Location Map
- Search this Site



### HIGHLIGHTS

[Reservoir Storage Graph](#)

[Flow & Storage Data](#)

[Toxics and PCB Information](#)

[Water Resources Plan \(Basin Plan\)](#)

["Ed. Web" Education Web Page](#)

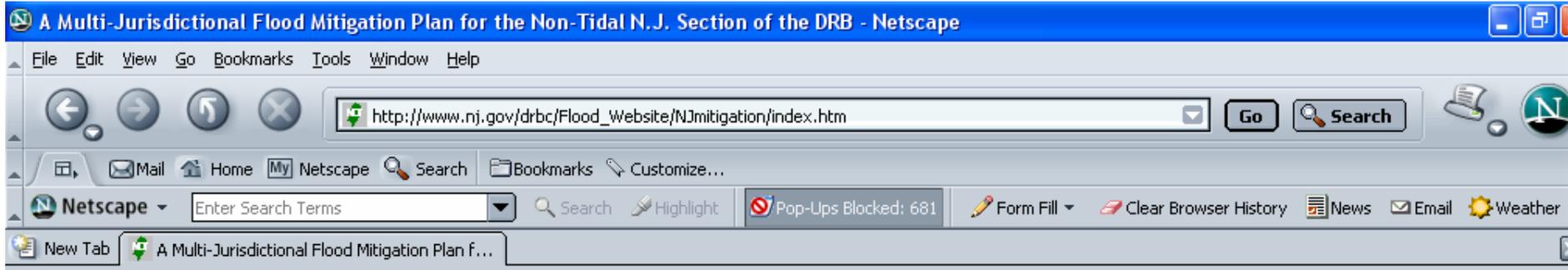
### WHAT'S NEW?

[Interstate Flood Mitigation Task Force](#)

[Multi-Jurisdictional Flood Mitigation Plan for the Non-Tidal N.J. Section of the Delaware River Basin](#)

[Resolutions to Address Flooding Adopted at the September 27 DRBC Meeting Including Explanation of Temporary Spill Mitigation Program](#)

[Next DRBC Meeting - Tuesday, December 12, 2006](#)



# A Multi-Jurisdictional **Flood Mitigation Plan** for the Non-Tidal N.J. Section of the Delaware River Basin

<b>Background Information</b>
<a href="#">Why Should Your Municipality Get Involved?</a>
<a href="#">Plan Area</a>
<a href="#">Roles and Responsibilities Overview</a> <i>(Adobe Reader required to view)</i>
<a href="#">County and Regional Meetings Information</a>
<a href="#">Municipal Questionnaire</a>
<a href="#">Recent Flooding History</a>
<b>Mitigation Planning Tools</b>
<a href="#">Flood Insurance Claims in the Delaware River Basin</a>
<a href="#">Flood Insurance Claims in the Plan Area -- coming soon</a>
<a href="#">Summary of FEMA Flood Insurance</a>



(Above: Frenchtown, N.J. during the June 2006 Flood. Photo taken by Robert Limbeck, DRBC staff)

### Objective:

To form a multi-agency (N.J. Office of Emergency Management/Delaware River Basin Commission/N.J. Department of Environmental Protection) and local planning effort that results in the development and local adoption of a multi-jurisdictional Flood Mitigation Plan for a portion of the Delaware River Basin.

### Goal:

To make the Delaware River Basin more disaster resistant by reducing the long-term risks to loss of life and property from flooding.



## Products/Services to be Provided by Project Management Team

- Flood hazard identification and vulnerability assessment (HAZUS)
- GIS Analysis of flood insurance claims and repetitive loss properties
- Historic flood damage costs by county and municipal damage areas
- Basin-scale mitigation strategies and priorities
- Compendium of local mitigation strategies

## Products/Services to be Provided (cont.)

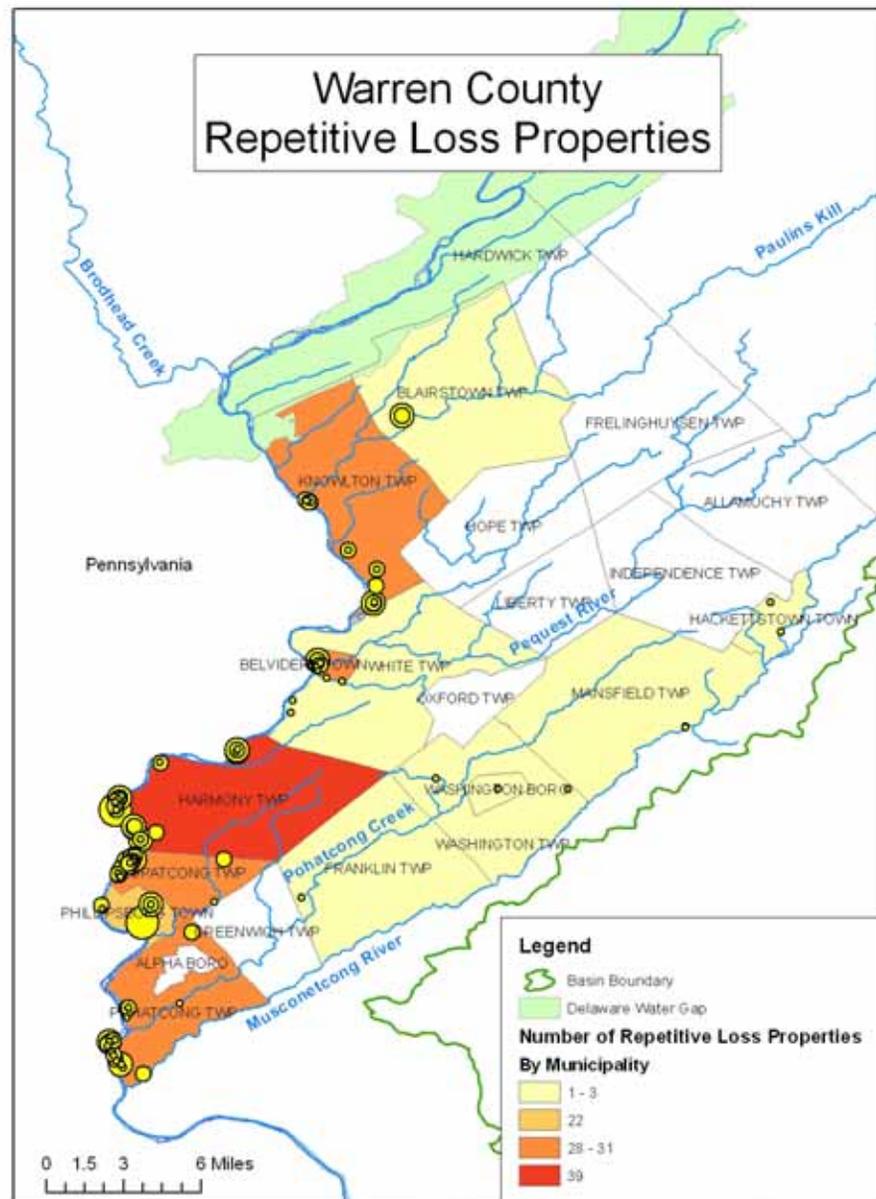
- DRBC Flood Mitigation Website to disseminate products and planning tools
- Facilitation of two meetings per county with municipalities
- Planning Workshops
- Draft/Compile Final Plan

# Repetitive Loss Properties

**Warren County:**  
**190 Repetitive Loss Properties**  
**\$19 Million in Total Payouts**

## Municipalities with the most Loss Properties:

	<u>Properties</u>	<u>Cost</u>
Harmony	39	\$5.7M
Belvidere	31	\$1.4M
Knowlton	29	\$2.3M
Lopatcong	28	\$3.2M
Pohatcong	28	\$2.4M
Phillipsburg	22	\$2.8M



Source: Federal Emergency Management Agency (FEMA). A property is considered a repetitive loss property when there are 2 or more losses reported which were paid more than \$1,000 for each loss. The 2 losses must be within 10 years of each other and be as least 10 days apart. Losses from 01/01/1978 - 08/31/06 that are closed are considered.

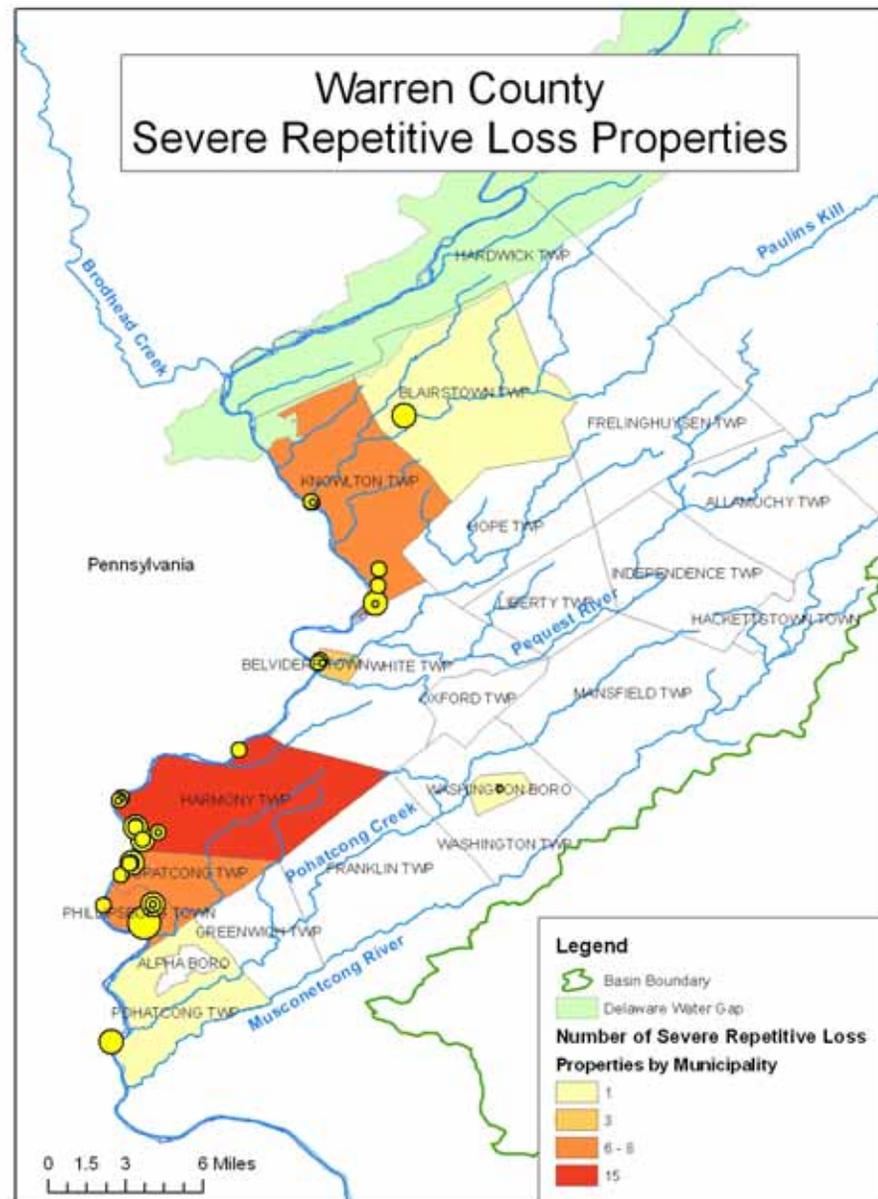
Prepared by Delaware River Basin Commission, November, 2006. Draft subject to change.

# Severe Repetitive Loss Properties

**Warren County:**  
 42 Severe Rep Loss Properties  
 \$8 Million in Total Payouts

## Municipalities with the most Severe Repetitive Loss Properties:

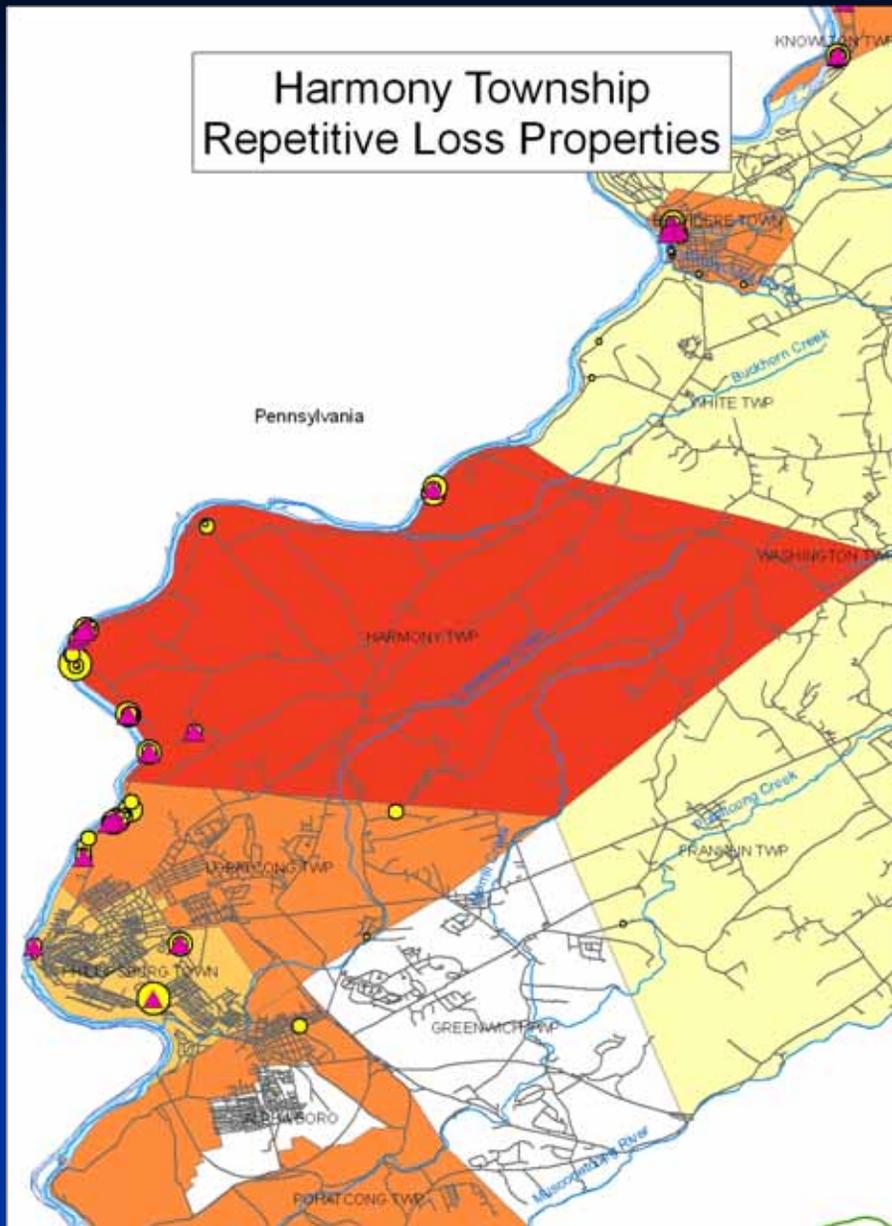
	<u>Properties</u>
Harmony	15
Knowlton	8
Phillipsburg	7
Lopatcong	6
Belvidere	3



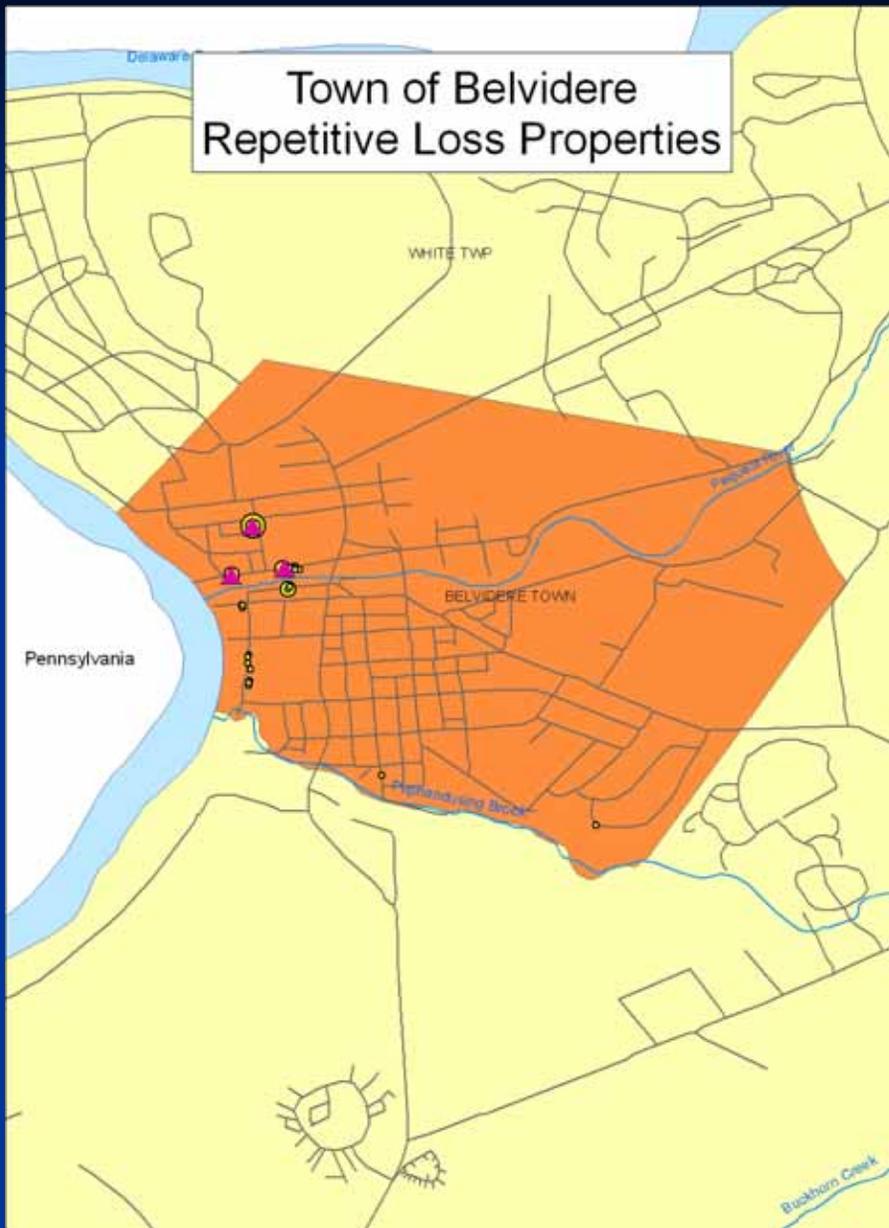
Source: Federal Emergency Management Agency (FEMA). A property is considered a severe repetitive loss property either when there are at least 4 losses each exceeding \$5000 or when there are 2 or more losses where the building payments exceed the property value. Losses from 01/01/1978 - 08/31/06 that are closed are considered.

Prepared by Delaware River Basin Commission Staff, November 2006. Draft subject to change.

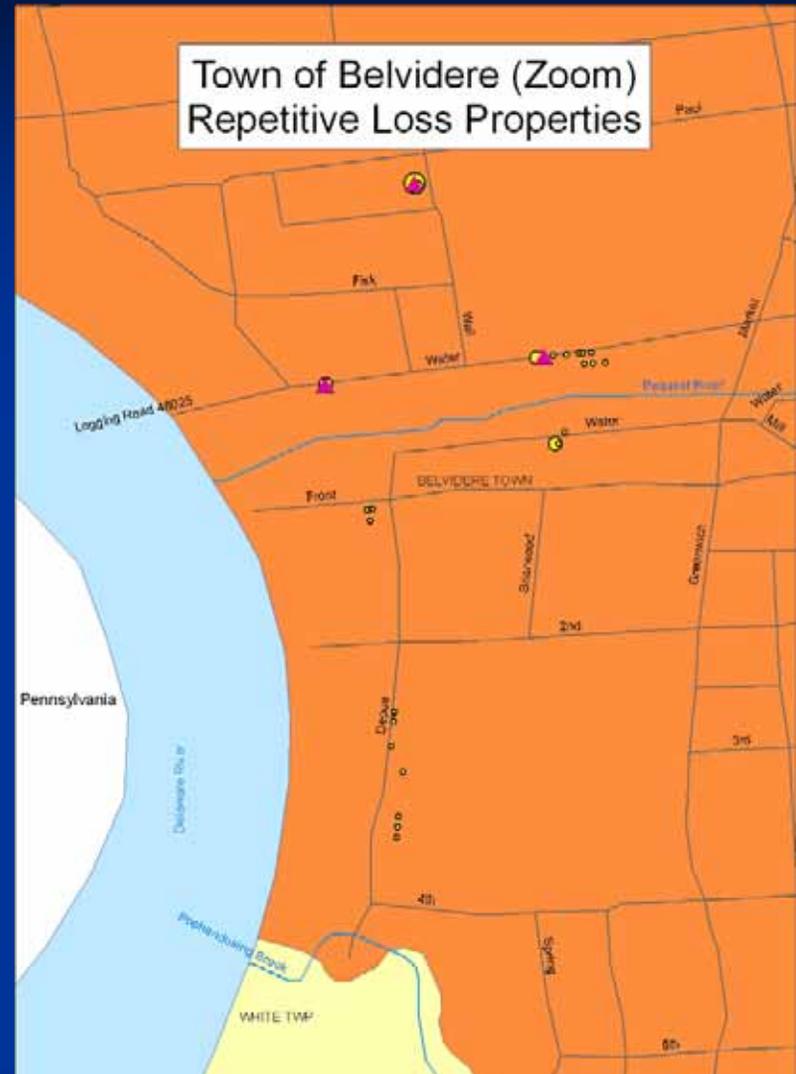
# Harmony Township Repetitive Loss Properties



### Town of Belvidere Repetitive Loss Properties



### Town of Belvidere (Zoom) Repetitive Loss Properties



# Importance of Local Participation:



Lambertville, NJ - April 2005

- Crucial for the successful development of a Flood Mitigation Plan that contains mitigation actions able to be implemented in the future.
- Participation by the counties and municipalities is also required by FEMA in order for them to be eligible to adopt the Plan.

# Local Municipalities

- Submit a Statement of Intent for your municipality
- Designate a local liaison for your municipality
- Attend county meetings and planning workshops
- Form a local flood mitigation planning committee
- Document your local planning process
- Complete the municipal questionnaire
- Publish notice of the municipality's intent to prepare a Flood Mitigation Plan to encourage public participation
- Distribute a prepared questionnaire to residents known to be in the flood prone areas

## Local Municipalities (cont.)

- Allow time for comment at two public meetings; once during the drafting stage and another prior to adopting the plan.
- Collect resident questionnaires and summarize public comments
- Create a list of flood mitigation goals for your community
- Compose a list of community goals and desired local mitigation actions
- Adopt the final plan locally by resolution

## Next Steps:

- Identify your local liaison and submit your community's Statement of Intent.
- Start to form your community's local flood mitigation planning committee.
- Begin to fill out the Municipal Questionnaire – They are due by January 26, 2007.
- Planning Workshops will be held late January/early February.

<b>Municipality</b>	<b>Program</b>	<b>Project</b>	<b>Federal</b>	<b>Non-Federal</b>
Harmony Township	Flood Mitigation Assistance Program (FMA)	Acquisition of 3 structures	\$ 674,640	\$ 224,880
Wayne Township	FMA	Acquisition	\$ 5,749,500	\$ 1,916,500
Little Falls Township	Repetitive Flood Claims Program	Acquisition of 5 structures	\$ 1,900,000	\$ -
Harmony Township	Hazard Mitigation Grant Program (HMGP)	Acquisition of 4 structures	\$ 858,900	\$ 286,300
Harmony Township	HMGP	Elevation of 8 structures	\$ 372,300	\$ 124,100
Pohatcong Township	HMGP	Acquisition of 2 structures	\$ 365,550	\$ 121,850
Fairfield Township	HMGP	Elevation of 6 structures	\$ 193,073	\$ 64,358
Carneys Point Township	Pre-Disaster Mitigation Grant Program (PDM)	Pump Station Upgrade	\$ 1,210,069	\$ 407,023