

# Summary of Municipal Survey Results

Flood Mitigation Planning Initiative

March 2007

Delaware River Basin Commission  
New Jersey Office of Emergency Management  
New Jersey Department of Environmental Protection

# Overview of Survey Results

- Municipalities Surveyed – 64
- Responding Municipalities – 36
- Response Rate – 56 Percent

# Basin-wide Flood History Incidence

<b>Flood Event</b>	<b>Number of Municipalities Affected (36 respondents)</b>
June 2006	16
April 2005	24
September 2004 (Ivan)	25
September 1999 (Floyd)	17
Other	13

# Basin-wide June 2006 Flood Event Identified Sources of Flood Water

Source of Flood Water	Number of Municipalities (36 respondents)
Delaware River	12
D&R Canal	2
Delaware River tributaries	9
Other	8

# Basin Wide June 2006 Flood Event Flood Structure Information

Structure Characteristic and Damage Extent	Number/Amount
Structures with basement damages	520
Structures with first floor damages	123
Average structure assessed value	\$237,738
Average structure age	58

# Basin-wide April 2005 Flood Event Identified Sources of Flood Water

Source of Flood Water	Number of Municipalities (36 respondents)
Delaware River	8
Delaware River Tributaries	15
D&R Canal	1
Other	6

# Basin-wide April 2005 Flood Event Flooded Structure Information

Structure Characteristic and Damage Extent	Number/Amount
Structures with basement damages	454
Structures with first floor damages	120
Average structure assessed value	\$220,000.
Average structure age	57

# Basin-wide 2004 Flood Event Identified Sources of Flood Water

Source of Flood Water	Number of Municipalities (36 Respondents)
Delaware River	9
Delaware River Tributaries	21
D&R Canal	2
Other	8

# Basin-wide September 2004 Flood Event Flooded Structure Information

Structure Characteristic and Damage Extent	Number/Amount
Structures with basement damages	557
Structures with first floor damages	126
Average structure assessed value	\$226,000.
Average structure age	54

# Basin-wide September 1999 Flood Event Identified Sources of Flood Water

Source of Flood Water	Number of Municipalities (36 respondents)
Delaware River	2
Delaware River Tributaries	11
D&R Canal	0
Other	4

# Basin-wide September 1999 Flood Event Flooded Structure Information

Structure Characteristic and Damage Extent	Number/Amount
Structures with basement damages	321
Structures with first flood damages	58
Average structure assessed value	\$252,000.
Average structure age	43

# Basin-wide Critical Facilities Affected

Flood Event	Number of Municipalities with Affected Critical Facilities
June 2006	9
April 2005	8
September 2004	12
September 1999	3

# Basin-wide

## Examples of Affected Critical Facilities

- Police, Fire and Rescue Squad locations
- Sewer and water plants and lift stations
- Nursing Homes
- Elementary schools
- Public Parking Garage

# Basin-wide

## Examples of Health and Safety Threats due to Flooding

- Inaccessible emergency equipment
- Loss of drinking water
- Hazardous materials from heating oil from basements and tanks washed downstream
- Road closures
- Power outages

# Participation in the National Flood Insurance Program (NFIP)

NFIP Feature	Number of Municipalities	
	Yes	No
Participate in NFIP	24	8
Aware that flood prevention ordinance enforcement a requirement for NFIP	24	4
Maintain an elevation certificate registry	9	20

# Community Rating System (CRS)

CRS Question	Yes	No
Municipality participate in CRS?	1	27
Would you like further information on CRS?	25	6

# Tenure of Local Floodplain Administrator

Tenure	Number of Municipalities
Less than one year	5
1-5 years	14
6-10 years	4
10-15 years	2
15-20 years	4
20+ years	0

# Role of Local Floodplain Administrator

Role	Number of Municipalities
Development Review	17
Enforcement	16
Building Permit Review	17
Planning Board Assistance	14
Emergency Management	10

# Formal Training for Local Floodplain Administrator

Question	Number of Municipalities	
	Yes	No
Completed formal training?	7	19
Aware of Certified Flood Manager Program (CFM)	11	20
Request for further information on CFM	21	9

# Status of Flood Mitigation Implementation

Question	Number of Municipalities	
	Yes	No
Any ongoing or completed structure elevations?	4	30
Any ongoing or completed structure acquisitions?	5	28
Interested property owners in structure elevations/acquisitions?	9	19
Any structural flood control measures in municipality?	11	22

# Status of Emergency Response

Question	Number of Municipalities	
	Yes	No
Community have Emergency Response Plan?	32	3
Community have published evacuation routes?	10	22
Community use reverse 9-1-1?	13	20

# Warren County Overview of Survey Results

- Municipalities Surveyed – 22
- Responding Municipalities – 16
- Response Rate – 73 Percent

# Warren County Flood History Incidence

<b>Flood Event</b>	<b>Number of Municipalities Affected (16 respondents)</b>
June 2006	6
April 2005	13
September 2004 (Ivan)	15
September 1999 (Floyd)	10
Other	13

# Warren County

## June 2006 Flood Event

### Identified Sources of Flood Water

Source of Flood Water	Number of Municipalities (16 respondents)
Delaware River	5
D&R Canal	0
Delaware River tributaries	4
Other	0

# Warren County

## June 2006 Flood Event

### Flood Structure Information

Structure Characteristic and Damage Extent	Number/Amount
Structures with basement damages	289
Structures with first floor damages	163
Average structure assessed value	\$176,533
Average structure age	78

# Warren County

## April 2005 Flood Event

### Identified Sources of Flood Water

Source of Flood Water	Number of Municipalities (16 respondents)
Delaware River	6
Delaware River Tributaries	9
D&R Canal	0
Other	3

# Warren County

## April 2005 Flood Event

### Flooded Structure Information

Structure Characteristic and Damage Extent	Number/Amount
Structures with basement damages	366
Structures with first floor damages	205
Average structure assessed value	\$192,400.
Average structure age	60

# Warren County

## September 2004 Flood Event

### Identified Sources of Flood Water

Source of Flood Water	Number of Municipalities (16 Respondents)
Delaware River	5
Delaware River Tributaries	13
D&R Canal	0
Other	6

# Warren County September 2004 Flood Event Flooded Structure Information

Structure Characteristic and Damage Extent	Number/Amount
Structures with basement damages	566
Structures with first floor damages	180
Average structure assessed value	\$210,700.
Average structure age	57

# Warren County

## September 1999 Flood Event

### Identified Sources of Flood Water

Source of Flood Water	Number of Municipalities (16 respondents)
Delaware River	0
Delaware River Tributaries	5
D&R Canal	0
Other	2

# Warren County September 1999 Flood Event Flooded Structure Information

Structure Characteristic and Damage Extent	Number/Amount
Structures with basement damages	151
Structures with first flood damages	42
Average structure assessed value	\$250,000.
Average structure age	34

# Warren County Critical Facilities Affected

Flood Event	Number of Municipalities with Affected Critical Facilities
June 2006	3
April 2005	4
September 2004	9
September 1999	2