

more than 130 losses. The total amount paid for building replacement and building contents for damages to these repetitive loss structures is approximately \$788,000. Table 5-17 describes the loss structures in terms of occupancy and jurisdiction.

**Table 5-17: Lake County Repetitive Loss Structures**

Jurisdiction	Occupancy Type	Number of Properties	Number of Losses	Total Paid
Griffith	2-4 Family	3	9	\$40,575.73
Highland	2-4 Family	2	4	\$5,517.41
Lake County	2-4 Family	1	3	\$14,574.50
Gary	Non-residential	1	4	\$22,137.42
Griffith	Non-residential	1	5	\$60,383.23
Merrillville	Non-residential	1	4	\$55,618.40
Dyer	Single-Family	5	11	\$35,737.91
Griffith	Single-Family	8	20	\$92,413.85
Hammond	Single-Family	4	8	21,183.39
Highland	Single-Family	4	10	\$68,860.10
Hobart	Single-Family	2	4	\$22,951.31
Lake County	Single-Family	8	22	\$156,192.90
Merrillville	Single-Family	5	19	\$136,526.20
Munster	Single-Family	1	5	\$55,251.42
<b>Totals</b>		<b>46</b>	<b>128</b>	<b>\$787,923.77</b>

### ***Geographic Location for Flooding***

Most river flooding occurs in early spring and is the result of excessive rainfall and/or the combination of rainfall and snowmelt. Severe thunderstorms may cause flooding during the summer or fall, but tend to be localized. The Lake County Hazard Analysis lists the primary sources of river flooding in the county as the Kankakee River and Little Calumet River.

Flash floods, brief heavy flows in small streams or normally dry creek beds, also occur within the county. Flash flooding is typically characterized by high-velocity water, often carrying large amounts of debris. Urban flooding involves the overflow of storm drain systems and is typically the result of inadequate drainage following heavy rainfall or rapid snowmelt.

IDNR recently prepared the paper FEMA Flood Insurance Rate Maps (FIRM). These digital files, although not official FIRMs, provided the boundary which was the basis for this analysis. The overbank flooding areas are depicted on the map in Appendix D. Flash flooding may occur countywide.

The National Oceanic and Atmospheric Administration (NOAA) Advanced Hydrologic Prediction Service provides information from gauge locations at points along various rivers across the United States. For Lake County, data is provided for two points: Little Calumet River at Munster and Kankakee River at Shelby. Appendix F lists information pulled from the NOAA website, which includes flood categories, historical crests, and details about anticipated impacts to agricultural lands, dams, levees, and other built structures at significant flood crest levels.

### ***Geographic Location for Dam and Levee Failure***

The National Inventory of Dams identified seven dams in Lake County; the county’s dams are illustrated in Appendix E. Table 5-18 summarizes the National Inventory of Dams information.

**Table 5-18: National Inventory of Dams**

<b>Dam Name</b>	<b>River</b>	<b>Hazard</b>	<b>EAP</b>
Lake of the Four Seasons Dam	Unnamed Tributary Stony Run	S	N
Lake George Dam	Deep River	H	N
Lake Dalecarlia Dam (East)	Cedar Creek	H	N
Lake Dalecarlia Dam (West)	Cedar Creek	H	N
Lakewood Estates Dam	Unnamed Tributary Cedar Creek	S	N
Doubletree Lake Estates Dam (North)	Unnamed Tributary Deep River	S	N
Doubletree Lake Estates Dam (West)	Unnamed Tributary Deep River	S	N
Lake Hills Dam	Lake Hills	N/A	N/A

A review of the Indiana Department of Natural Resource’s files identified eight levees, listed in Table 5-19. These levees are from historical IDNR data; their physical presence was not confirmed and some may no longer exist.

**Table 5-19: Lake County Levees**

<b>Name</b>	<b>Location</b>
George Meyers Levee	Grand Calumet River near Highland
Griffith Little Calumet Levee	Left bank of Little Calumet River in Griffith
Hammond Little Calumet Levee	Left bank of Little Calumet River in Hammond
Munster Little Calumet Levee	Left bank of Little Calumet River in Munster
Highland Little Calumet Levee	Left bank of Little Calumet River in Highland
Schererville Levee	Schererville
Wicker Park Levee	Little Calumet River Basin in Highland

*\* The dams and levees listed in this multi-hazard mitigation plan are recorded from historical IDNR data. Their physical presences were not confirmed; therefore, new or unrecorded structures may exist.*

### ***Hazard Extent for Flooding***

The HAZUS-MH flood model is designed to generate a flood depth grid and flood boundary polygon by deriving hydrologic and hydraulic information based on user-provided elevation data or by incorporating selected output from other flood models. HAZUS-MH also has the ability to clip a Digital Elevation Model (DEM) with a user-provided flood boundary, thus creating a flood depth grid. For Lake County, HAZUS-MH was used to extract flood depth by clipping the DEM with the IDNR FIRMs Base Flood Elevation (BFE) boundary. The BFE is defined as the area that has a 1% chance of flooding in any given year.

Flood hazard scenarios were modeled using GIS analysis and HAZUS-MH. The flood hazard modeling was based on historical occurrences and current threats. Existing IDNR flood maps were used to identify the areas of study. These digital files, although not official DFIRMs,

