

**APPENDIX I: LOSS AVOIDANCE STUDY: WISCONSIN PROPERTY
ACQUISITION AND STRUCTURE DEMOLITION, SEPTEMBER 2009**



Loss Avoidance Study

Wisconsin, Property Acquisition and
Structure Demolition

September 2009



FEMA

Federal Emergency Management Agency
U.S. Department of Homeland Security
500 C Street, Southwest
Washington, DC 20472

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URS Group, Inc.
200 Orchard Ridge Drive, Suite 101
Gaithersburg, MD 20878

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Federal Emergency Management Agency:

L. Gina White (FEMA, HQ) – Project Monitor
Lee Treager (FEMA, Region V) – Technical Monitor
Megan Savage (FEMA, Region V)
Joe Heinrich (FEMA, DAE)

State of Wisconsin:

Roxanne Gray, State Hazard Mitigation Officer

Local:

Donna Haugom, Director Jefferson County Emergency Management
John Meland, Chief Economics Development Planner, Southeast
Wisconsin Regional Planning Commission

URS:

Michael Proctor, PE, URS Group, Inc.
Jeanne Hudson, PE, URS Group, Inc.
Sherry Crouch, PE, URS Group, Inc.
Anna Nazarov, URS Group, Inc.
Michael Gayrard, URS Group, Inc.
Diana Burke, ELS, URS Group, Inc.

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Executive Summary:

Every year, Federal, State, and local agencies, as well as private entities, contribute funding to mitigation projects that will reduce or eliminate the long-term risks posed to people, the built environment, and the economy by natural hazards. The Department of Homeland Security's Federal Emergency Management Agency (FEMA) awards mitigation grants on the basis of whether the proposed mitigation projects are cost-effective.

Tools that have been used by FEMA in the past for determining the effectiveness of a project are based on the analysis of a probabilistic hazard event, completed prior to project funding and prior to project construction. With such significant investment in mitigation being made, policy makers have taken great interest in the effectiveness of mitigation during actual hazard events. In response, FEMA developed methodology using a quantitative approach to assess the performance of mitigation projects based on actual post-construction hazard events.

Since 1982, every county in Wisconsin has experienced at least one flood event, and 19 counties have experienced more than 20 flood events each (Wisconsin Emergency Management, 2009). In response to the flooding, local governments in Kenosha, Jefferson, and Crawford counties, with Federal and State assistance, acquired a total of 92 repetitive-loss properties from 1989 to 2008 at a cost of approximately \$11 million. FEMA partnered with the State of Wisconsin and used the quantitative approach to complete a loss avoidance study for the acquisition projects.

FEMA calculated the value of the losses that had been avoided by the implementation of the mitigation projects and compared the losses avoided with the acquisition costs. The aggregate losses avoided were valued at \$14.5 million, and the aggregate project cost was valued at approximately \$11 million (both values in 2009 dollars), resulting in a Return on Investment of 132%. The results of the study demonstrate the cost-effectiveness of the selected acquisitions.

This report provides detailed documentation of the methodology implemented during the Wisconsin study and can be used as guidance for the preparation of future loss avoidance studies specific to acquisition projects. Additionally, it describes considerations and recommended practices that were identified during the completion of the study.

Section One:

INTRODUCTION

Because of frequent flooding in Wisconsin, a number of flood mitigation projects, specifically acquisition/demolition and acquisition/relocation projects, have been implemented in recent years along the Rock, Fox, and Kickapoo rivers. To evaluate the mitigation projects for cost-effectiveness, FEMA partnered with the State of Wisconsin to conduct a loss avoidance study (LAS or study). The intent of the study was to compare the losses avoided in all floods since the implementation of the mitigation to the cost of the mitigation projects. This report contains the results of the study.

1.1 BACKGROUND

Mitigation is defined by the Department of Homeland Security's Federal Emergency Management Agency (FEMA) as any sustained action taken to reduce or eliminate long-term risk to people and property from hazards and their effects. Every year, FEMA provides States and communities with substantial financial assistance for projects that will reduce or eliminate risks from natural hazards through Hazard Mitigation Assistance grants, which include post-disaster grants under the Hazard Mitigation Grant Program (HMGP) and pre-disaster grants under the Pre-Disaster Mitigation Program, the Flood Mitigation Assistance Program, the Repetitive Flood Claims Program, and the Severe Repetitive Loss Program.

Mitigation refers to any sustained action taken to reduce or eliminate long-term risk from hazards and their effects.

With significant investment being made in mitigation, demonstrating cost-effectiveness is crucial for continued support. In order to evaluate the cost-effectiveness of mitigation projects, FEMA has developed a methodology for loss avoidance studies. The methodology is based on the analysis of actual natural hazard events that have occurred in the project study area since the completion of the mitigation project. The methodology provides a way to assess the benefits of a mitigation project in terms of its actual performance. Losses avoided are determined by comparing damage that would likely have been caused by the same storms without the project (Mitigation Project Absent [MP_A]) with damage that actually occurred with the project in place (Mitigation Project Complete [MP_C]).

The LAS methodology used for this study is consistent with the methodology described in *Loss Avoidance: Riverine Flood Methodology Report* (FEMA, in press[b]).

1.2 PURPOSE

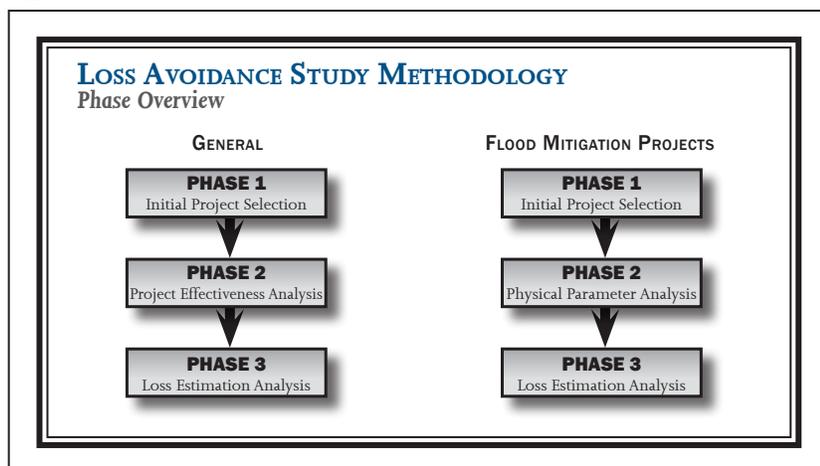
The purposes of the Wisconsin study are to verify the effectiveness of the acquisition projects that were analyzed and to document their economic performance. The study is intended to answer the question, “How much damage could have been caused by a storm event if the acquisition projects had not been completed?” Further, the study provides comprehensive documentation of the losses avoided (damages avoided or project benefits) that were determined utilizing quantitative methods.

1.3 METHODOLOGY OVERVIEW

Loss avoidance methodology can be applied to the mitigation of any type of natural hazard (e.g., flood, wildfire, seismic, wind). Flood hazard mitigation is divided into building modification and minor, localized flood reduction projects. Building modification projects mitigate damages by modifying a building to reduce its risk of flooding through acquisition/demolition, acquisition/relocation, elevation, and floodproofing. Acquisition/demolition projects are referred to as “acquisition projects,” and acquisition/relocation projects are referred to as “relocation projects.” Flood reduction projects mitigate damages by reducing the hazard itself and include stormwater drainage system improvements, channel modifications, flood walls/barriers, and other projects that reduce the severity of flooding. This study is focused on the performance of acquisition projects.

Loss avoidance studies are divided into three phases (see Figure 1.1). Although Phases 1 and 3 are similar regardless of the type of mitigation project, Phase 2 varies depending on the type of mitigation project. In flood-related studies, Phase 2 is called “Physical Parameter Analysis.”

Figure 1.1



Source: FEMA (2007)

This study focuses on the acquisition/demolition, and acquisition/relocation of buildings in Wisconsin. No damage is calculated for the MP_C condition for acquisition projects because the buildings have been demolished or relocated.

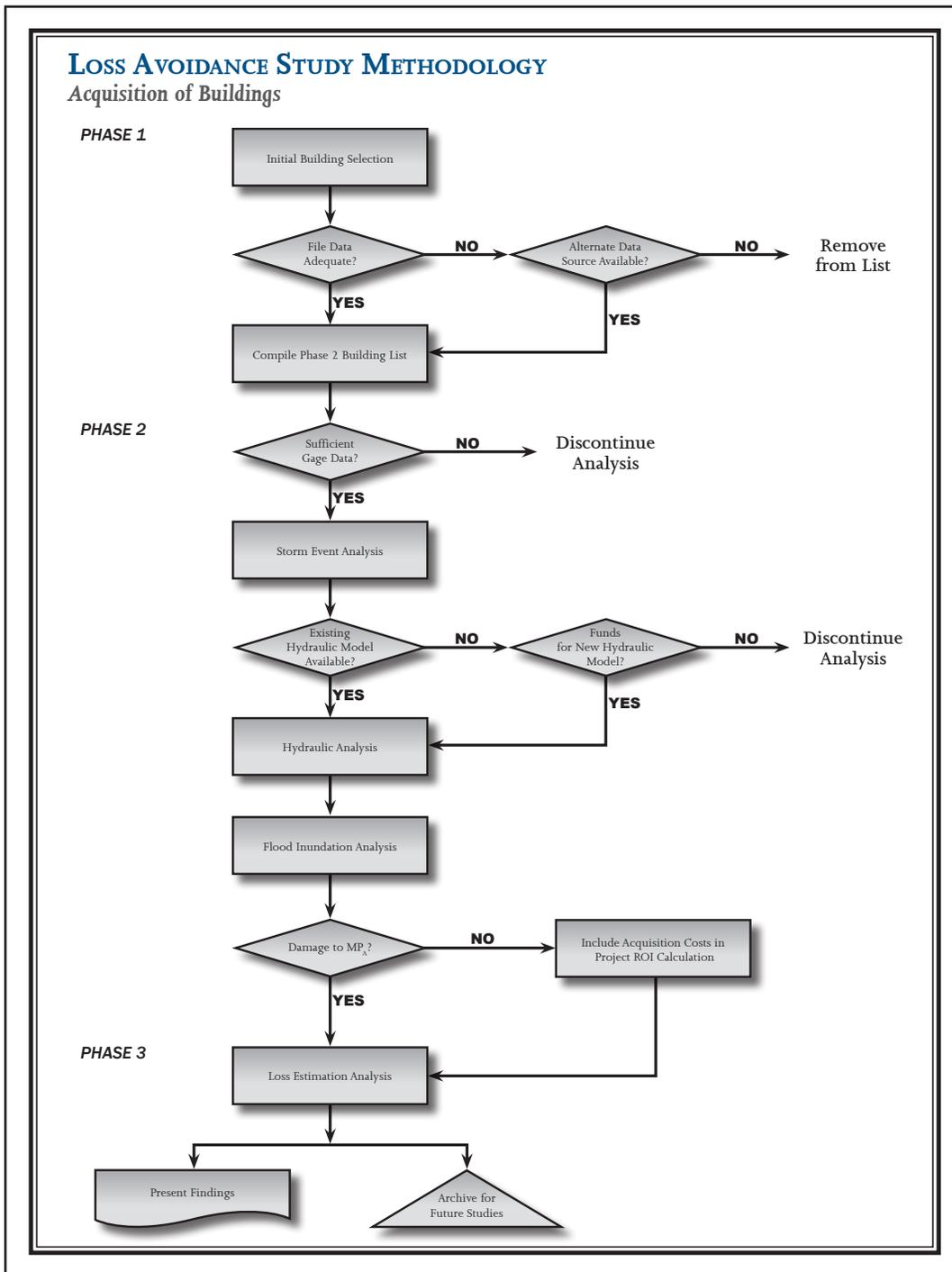
Phase 1 consists of the development of the initial project list. Projects are selected based on criteria determined by the sponsoring agency. For acquisition projects, the initial list of buildings in each project is screened based on the availability of data required for completion of all phases of the study. Buildings with adequate data advance to Phase 2 of the study.

Phase 2 is composed of three distinct analyses—Storm Event Analysis, Hydraulic Analysis, and Flood Inundation Analysis. A Storm Event Analysis is performed to determine whether any storm event occurred since the mitigation project was implemented that would have caused damages in the MP_A scenario. A Hydraulic Analysis is performed to determine the extent and depth of flooding in those events. A Flood Inundation Analysis uses the results of the Hydraulic Analysis and is conducted to determine the depth of flooding inside buildings within the project extents. If the depth or limit of inundation determined for the MP_A scenario indicates that damage would have occurred if the project had not been implemented, the building advances to Phase 3 for a Loss Estimation Analysis.

In Phase 3 for acquisition projects, damages are calculated for the MP_A conditions. Because no damages would have occurred for the MP_C condition, the MP_A damages are equivalent to the losses avoided. The Return on Investment (ROI) is calculated by comparing the losses avoided to the project investment. The definition of ROI used in this study is not the same as a financial ROI, which is a measure of net profit, expressed relative to the dollars invested. For the LAS, an ROI of greater than 100 percent indicates that project benefits have exceeded project costs, and the project is considered cost-effective.

The LAS methodology for building acquisitions is shown in Figure 1.2.

Figure 1.2



Section Two:

MITIGATION PROJECT INFORMATION

Because Wisconsin is highly susceptible to flooding, the State of Wisconsin has initiated a number of flood mitigation projects to reduce the need for costly emergency response and repairs. The mitigation projects include the acquisition, elevation, and relocation of flood-prone properties and have been funded by FEMA and other public agencies and by private sources.

This study is focused on 73 residential building acquisitions in Kenosha County, 18 residential building acquisitions in Jefferson County, and one public building acquisition and relocation in Crawford County between 1989 and 2008. The acquisitions occurred in the cities of Wheatland, Silver Lake, and Salem (Kenosha County); Fort Atkinson (Jefferson County); and Gays Mills (Crawford County), which are affected by flooding from the Fox, Rock, and Kickapoo rivers.

The study consisted of residential building acquisitions in Kenosha and Jefferson counties and one public building acquisition in Crawford County.

2.1 HISTORY

The State of Wisconsin has long been vulnerable to severe storms, tornadoes, and flooding. Each year, flooding causes residents, businesses, and taxpayers millions of dollars in damage even though not every flood is severe enough to be declared a disaster. Since 1982, every county in Wisconsin has experienced at least one flood event, and 19 counties have experienced more than 20 flood events each (Wisconsin Emergency Management, 2009). Table 2.1 shows the number of major disaster declarations and emergency declarations that have occurred in Wisconsin in recent decades.

Table 2.1

WISCONSIN DISASTER HISTORY		
DECLARATION TYPE	TIME PERIOD	DECLARATIONS
Major Disaster Declarations	1965 - 2008	32
Emergency Declarations	1976 - 2008	6

Source: FEMA, Wisconsin State Disaster History, 2009

Between 1990 and 2000, the two Wisconsin flood events that affected the most counties occurred in 1990 and 1993 (Wisconsin Emergency Management, 2004). The 1990 flood was accompanied by tornadoes and affected 17 counties across southern Wisconsin. Total damages exceeded \$21 million (Wisconsin Emergency Management, 2004).

The Great Flood of 1993 was the result of two to three times the normal amount of rainfall across the entire state following a winter with greater than average snowfall. In the summer, every major river in Wisconsin flooded, and 20 dams were overtopped, broken, or washed away. Crop and soil damages, residential damages, and business losses totaled at least \$877 million. More than half (46) of the state's 72 counties were designated in the declaration (Wisconsin Historical Society, 2009).

The flooding in southern Wisconsin in June 2008 was the most costly natural disaster in the state's recorded history (Wisconsin Emergency Management, 2009). Damages were estimated to exceed \$1.5 billion (Fitzpatrick et al., 2008). The June 2008 floods were aggravated by saturated soils persisting from a combination of record-breaking snowfalls in the winter of 2007/2008 and heavy rains in spring 2008 (Fitzpatrick et al., 2008). Extensive flooding along the Baraboo, Kickapoo, Crawfish, and Rock rivers caused particularly severe damages in surrounding communities. The Governor of Wisconsin declared a state of emergency in 30 counties.

2.2 FUNDING AND TIMELINE

Although building acquisitions have been occurring since long before 1993, the Great Flood of 1993 was the impetus behind a collaborative effort between the State of Wisconsin and FEMA to increase the acquisition of flood-prone properties. As of July 2008, more than 300 properties in Wisconsin had been acquired to prevent future flood damages (FEMA, 2008b).

In 1994, Kenosha County officials developed the Fox River Flood Mitigation Program in an effort to help residents move out of the 100-year floodplain of the Illinois Fox River. As of August 2008, the program had won grants totaling approximately \$7.4 million from sources including the HMGP, Wisconsin Emergency Management, Wisconsin Department of Natural Resources, and Community Development Block Grants from the Wisconsin Department of Commerce (FEMA, n.d.[b]). Approximately 75 buildings were acquired between 1995 and July 2008 (FEMA, n.d.[a]). In the first 10 years of the program, 56 buildings had been acquired, with FEMA contributing \$2.5 million in HMGP and Flood Mitigation Assistance grants and \$3 million from Community Development Block Grants sponsored by the Wisconsin Department of Commerce (FEMA, n.d.[c]).

Jefferson County developed the Flood Mitigation Buyout Program, a voluntary program aimed at reducing the costs associated with

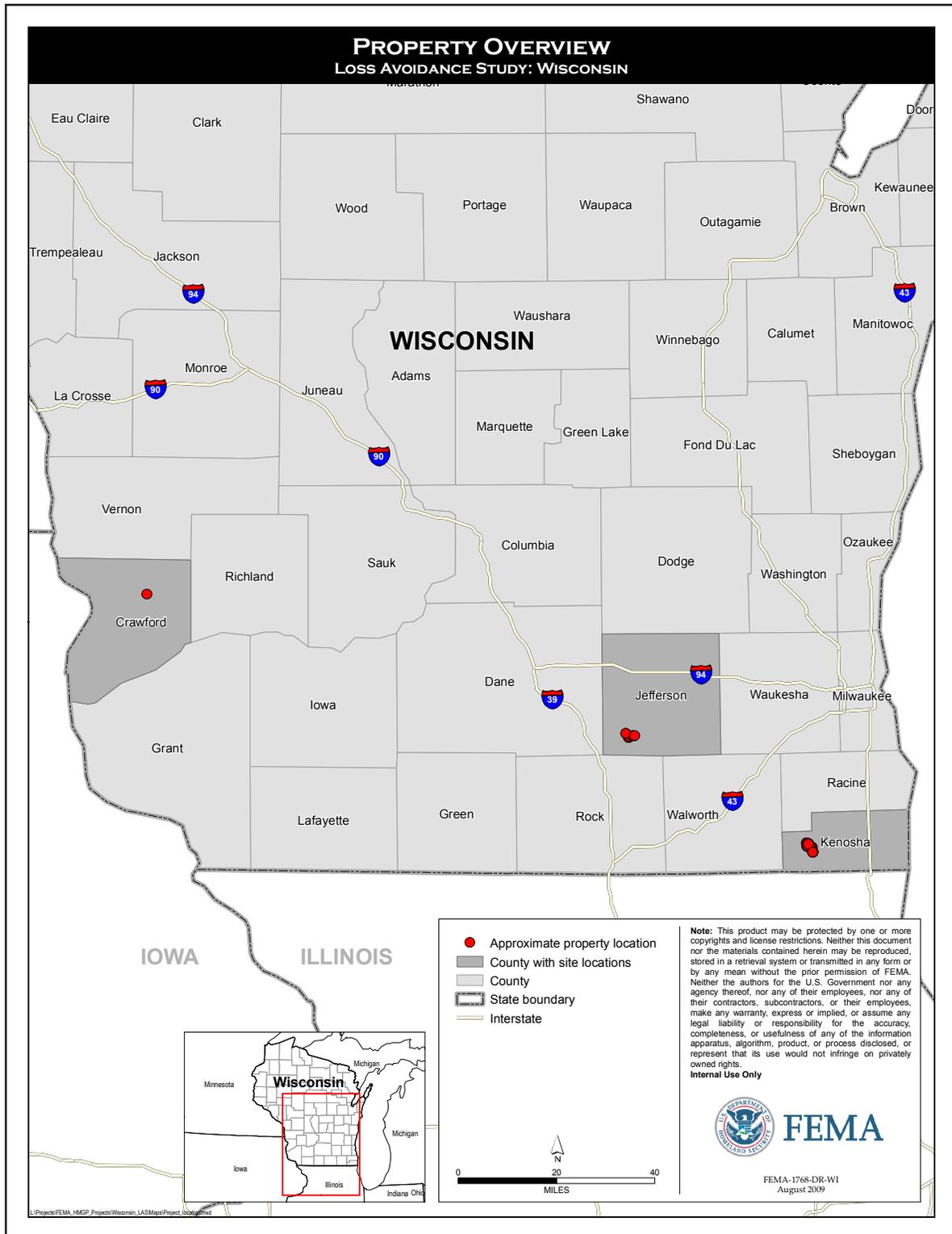
damage caused by severe weather events. Since 1995, Jefferson County has acquired 35 buildings with the assistance of the HMGP. The HMGP requires a 75/25% cost split for each project. FEMA funds 75%, the State of Wisconsin funds 12.5%, and Jefferson County funds the remaining 12.5%. Jefferson County has used multiple sources of funding, including a Lake Protection Grant from the Wisconsin Department of Natural Resources and a Community Development Block Grant from the Wisconsin Department of Commerce (Wisconsin Emergency Management, n.d.[a]). Since 1995, the Federal portion has totaled more than \$1.5 million (Wisconsin Emergency Management, n.d.[b]).

Crawford County has also initiated a number of flood mitigation projects, including floodproofing of buildings, acquisitions, and relocations. This study includes the acquisition and relocation of the Crawford County Highway Shop in the city of Gays Mills. The \$2.7 million project involved acquiring, demolishing, and clearing the property and rebuilding out of the floodplain. FEMA funded 75% of the cost, and the State and County funded the remaining 25% (FEMA, n.d.[d]).

2.3 LOCATION

The locations of the 92 acquisition projects assessed in the study are shown in Figure 2.1. The breakdown of the acquisition projects by county are as follows: 73 in Kenosha County, 18 in Jefferson County, and 1 in Crawford County. The Kenosha County acquisitions were affected primarily by flooding from the Fox River, the Jefferson County acquisitions by the Rock River, and the Crawford County acquisition by the Kickapoo River.

Figure 2.1



drainage system improvements, channel modifications, flood walls/barriers, and other projects that would reduce the severity of flooding (called flood reduction projects).

- **Study Baseline:** The study baseline for an LAS is the date the mitigation activity was completed. Only the storm events that occurred after the study baseline should be evaluated for a study. For an acquisition/demolition project, the study baseline is the date of demolition for each building. Consequently, it is more likely that losses avoided can be assessed for buildings with older demolition dates. A mitigation project, which may include the acquisition of multiple buildings, is not closed until after the acquisition and demolition of each building included in the project is complete. Therefore, using the demolition date instead of a closeout date is recommended, and each building should be evaluated individually.

For acquisition projects, once an initial list of projects has been selected, buildings in each project must be analyzed individually. Buildings should be removed from the analysis during Phase 1 if specific, necessary building data are not available or cannot be easily estimated. Buildings may also be eliminated based on the quality of the available data.

The data that are required to complete an LAS for acquisition projects are:

Data required for an acquisition project:

- Project cost
- Project completion date
- First floor elevation
- Building location information
- Building characteristics and replacement value

- Actual acquisition costs, including the fair market value of the building paid to the homeowner, demolition costs, legal fees, assessor's costs, and any other costs associated with the project.
- Demolition completion dates for each building.
- First floor elevations (FFE_s) for the MP_A scenario, preferably in the form of FEMA elevation certificates. FFE_s can be estimated in the absence of surveyed FFE_s.
- Building location information in the form of latitude/longitude data, address, and/or assessor parcel number.
- Building information, including building type (i.e., residential, commercial, industrial, or municipal), construction type (e.g., wood frame, manufactured), basement information (finished versus unfinished and square footage), number of floors, living square footage, foundation type, number of stories, garage type and square footage, and building replacement value (BRV).

FFE_s are important because they provide the basis for the damage calculations. Damages are calculated in Phase 3 based on the depth of flooding inside the building. Because of the sensitivity of the damage calculations, even an error of 0.5 foot in the FFE can affect the damage calculations significantly. Surveyed FFE_s are therefore preferred.

3.2 WISCONSIN STUDY: PHASE 1 SUMMARY

FEMA and the Wisconsin State Emergency Management Agency initiated the Wisconsin LAS. The two agencies worked together to develop a project list for the study based on the following criteria:

- **Area of Interest:** Projects located in Kenosha, Jefferson and Crawford counties.
- **Hazard Type:** Riverine flooding.
- **Project Type:** Residential building acquisition in Kenosha and Jefferson counties; public building acquisition in Crawford County.
- **Study Baseline:** Acquisitions were completed between November 11, 1989, and June 27, 2008.

Acquisitions were completed between November 11, 1989, and June 27, 2008.

The data collection efforts for the study included:

- **Project Cost Data:** Project cost data were provided by the counties for each building. The total acquisition cost for each building was inflated to 2009 dollars.
- **Building Location Data:** Building location data can be difficult to obtain for acquisition projects because the buildings no longer exist. In this study, although the buildings had been demolished up to 20 years earlier, building address, latitude, and longitude data were available and provided by the Counties. Building locations were plotted using latitude and longitude Geographic Information System (GIS) data and then verified using a web mapping service. Buildings that did not have matching latitude/longitude and address data were replotted using geocoding technology, namely Batch Geocode (www.batchgeocode.com) and Geocode US (www.geocoder.us) in order to generate an accurate latitude and longitude. Forty-one building locations had matching latitude/longitude and address data or the latitudes generated by geocoding technology were within 0.001 decimal degrees of latitude and longitude provided by the Counties. Fifty building locations were determined using the Batch Geocode, and one location was determined using Geocode US.
- **Building Information:** Building information such as construction type, number of floors, square footage, FFE, BRV, and acquisition completion date was provided by the Counties.
- **Building Screening:** No buildings were removed from the analysis during Phase 1. All 92 buildings had sufficient data to proceed to Phase 2.

Section Four:

PHASE 2 – PHYSICAL PARAMETER ANALYSIS

This section contains a discussion of Phase 2 (Physical Parameter Analysis) for acquisition projects (see Figure 4.1). Phase 2 consists of a Storm Event Analysis, a Hydraulic Analysis, and a Flood Inundation Analysis.

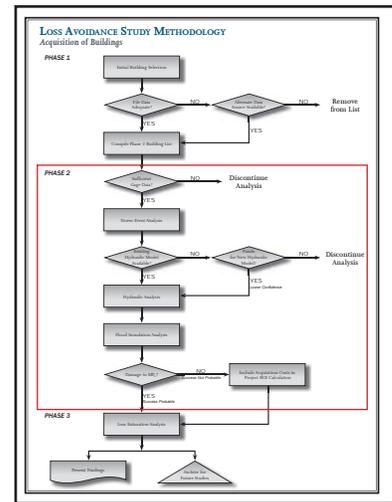
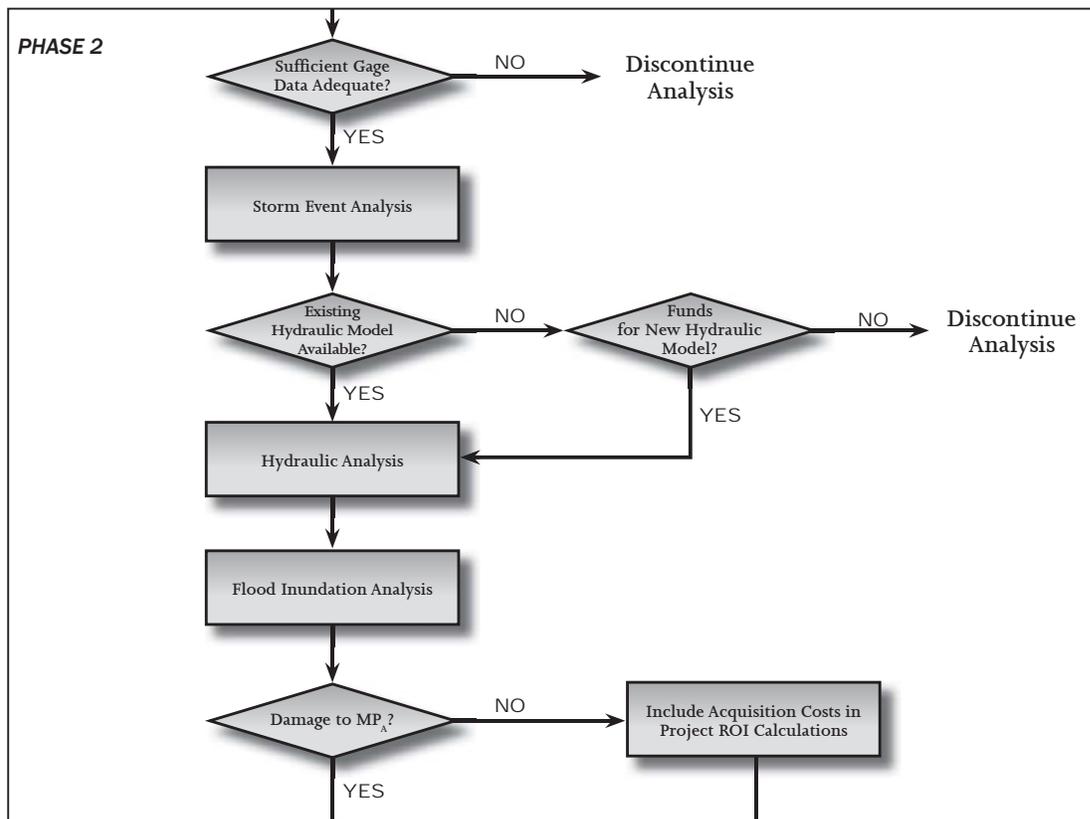


Figure 4.1



- **Storm Event Analysis:** A Storm Event Analysis is conducted to identify potentially damaging events that occurred since the study baseline and assess data availability. Data include high water marks (HWMs) or stream/precipitation gage readings.
- **Hydraulic Analysis:** A Hydraulic Analysis is used to determine how flows move through the project area and the water surface elevations (WSEs) from known storm events. For building modification projects, if a water surface profile from an existing model is available, or enough HWMs to create a digital

water surface were collected during the Storm Event Analysis, it may not be necessary to use hydraulic modeling software.

- **Flood Inundation Analysis:** The Flood Inundation Analysis is conducted to determine the depth of flooding that would have occurred during storm events since the study baseline at each building location in the MP_A scenario.

For a more information on the general methodology for Phase 2, see the Loss Avoidance: Riverine Flood Methodology Report (FEMA, 2009).

4.1 STORM EVENT ANALYSIS

An LAS for any flood-related project is dependent on the occurrence of an MP_A storm event after the study baseline that is severe enough to have caused damage in the MP_A scenario. For some projects, more than one storm event may have occurred during the project's lifetime that could have caused damages.

The purpose of the Storm Event Analysis is to determine which storm event data are available. Data for the Storm Event Analysis may be collected in the form of HWMs from floods, stream gage discharge data, stream gage stage data, or precipitation gage data. Figure 4.2 provides the usual order of preference for storm event data. If no HWMs were recorded, the availability of sufficient stream gage data should be determined because stream gage data are the next best source of data for the analysis. The stream gage should be in or near the study area and have a period of record covering the event(s) of interest. Stream gage data may include measurements of stage (WSE), discharge (flow rate), or both.

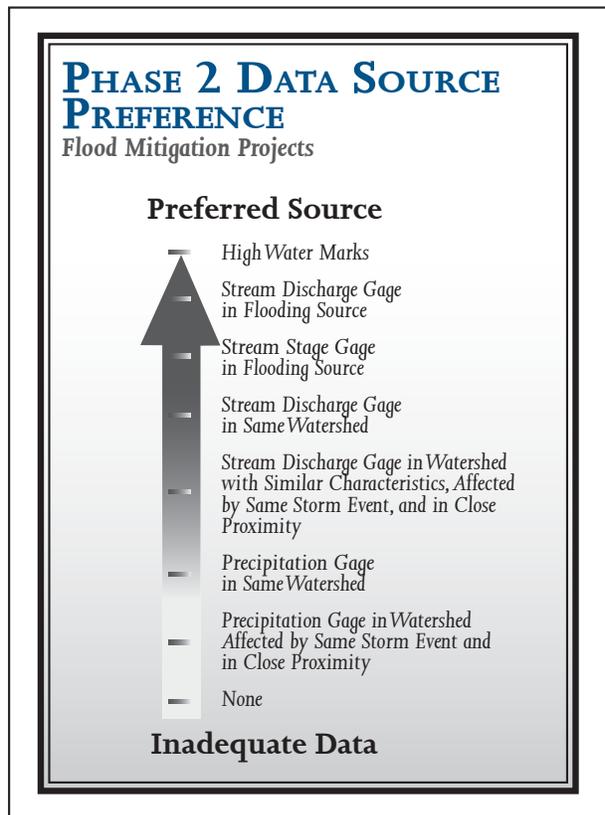
When no stream gages are available, precipitation gages must be located. If precipitation gages are used, a hydrologic analysis must be completed as part of the analysis to convert rainfall data to flow at the project site. If no storm event data are available, the buildings along that flooding source must be eliminated from evaluation. A list of peak events since the first building was demolished can be compiled from the gage data during this phase if the scope of the study calls for the analysis of more than one event.

4.1.1 WISCONSIN STUDY: STORM EVENT ANALYSIS

4.1.1.1 FOX RIVER

The earliest demolition completion date for the buildings in Kenosha County was July 21, 1995. An analysis of flow and stage data for the U.S. Geological Survey (USGS) gage (ID# 05545750) for the Fox River

Figure 4.2



near New Munster, Wisconsin, was performed to determine when damaging storms could have occurred along the Fox River after July 1995. The data available for the USGS gage at New Munster include instantaneous discharge (generally available every 15 minutes), daily mean discharge, annual peak stream flow, and annual peak gage height. The National Weather Service (NWS) also reports the top 10 peak gage heights as well as flood impacts corresponding to increasing water levels at the gage near New Munster.

Historical flooding information that had been summarized from application materials (such as for the HMGP) was available for a number of the buildings. Generally, this information provided only the month and/or year of flooding or indicated that the building experienced flooding every year. However, the USGS gage data and NWS information for the Fox River provided sufficient information regarding the potentially damaging floods. Table 4.1 lists the available peak water levels on the Fox River near New Munster and the flood impacts estimated by the NWS.

The daily and annual peak flow data and the dates of historical flooding are shown in Figure 4.3. A comparison of the peak flows and reported dates of historical flooding indicate that either the low

Table 4.1

PEAK WATER LEVELS AND CORRESPONDING FLOOD IMPACTS FOR THE FOX RIVER NEAR NEW MUNSTER, WISCONSIN		
DATE¹	REPORTED PEAK WATER LEVEL FOR FOX RIVER NEAR NEW MUNSTER (FEET, NGVD 29)²	FLOOD IMPACTS ESTIMATED BY THE NATIONAL WEATHER SERVICE
June 15, 2008	750.9	Above a water level of 750.4 feet, NGVD 29: There are 1 to 5 inches of water over Highway 50 near the Fox River. There is widespread flooding to homes adjacent to the river in the towns of Wheatland, Silver Lake and Salem. Some families evacuate their homes. Some county roads are closed.
August 24, 2007	750.7	
May 24, 2004	749.5	Above a water level of 749.2 feet, NGVD 29: There is widespread flooding to homes adjacent to the river in the towns of Wheatland, Silver Lake and Salem. Some families evacuate their homes. Some county roads are closed.
June 15, 1999	749.4	
April 12, 2008	748.9	Above a water level of 748.5 feet, NGVD 29: There is widespread flooding of homes in low lying areas adjacent to the river in the Wheatland, Silver Lake and Salem areas. Some families evacuate their homes. Some county roads are closed.
April 29, 2009	748.5	
June 2, 2000	748.5	
February 11, 2001	748.4	
February 22, 1997	748.3	Above a water level of 747.9 feet, NGVD 29: Water is into the lower levels of some homes in the Town of Salem and the Village of Silver Lake. Water is up to the floor levels of some homes in the Wheatland area.
June 13, 2001	748.0	
March 15, 2006	747.9	
June 19, 1996	747.9	
February 15, 2005	747.3	Above a water level of 747.3 feet, NGVD 29: Water surrounds a home near the intersection of Highway 50 and Highway W in the Wheatland area.
June 5, 2002	747.2	Above a water level of 747.2 feet, NGVD 29: Water in yards of some homes in the Salem, Silver Lake, and Wheatland areas.
April 10, 1998	746.1	Above a water level of 745.7 feet, NGVD 29: Water is near some homes along Highway W in the Silver Lake area of Kenosha County.
May 12, 2003	745.0	Above a water level of 744.7 feet, NGVD 29: There is minor...non-damaging lowland flooding in the New Munster area.

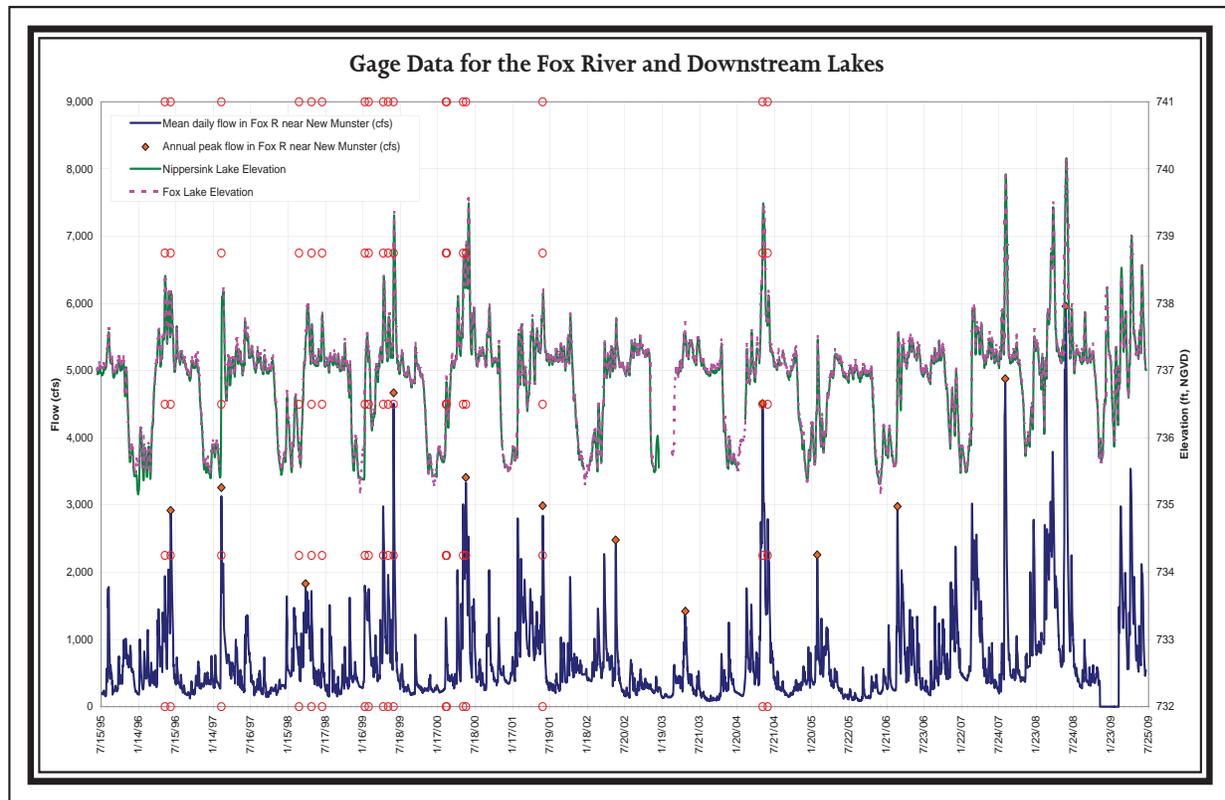
Sources: Annual peak stage from USGS (2009a); historical crests and flood impacts from NWS (2009).

1 Only events after the earliest acquisition date of July 21, 1995 are included.

2 Reported gage heights were converted to elevations relative to the NGVD 29 using the reported gage datum of 735.72 feet NGVD 29.

NGVD29 = National Geodetic Vertical Datum of 1929

Figure 4.3



flows occurring frequently were causing flooding, which would not be logical, or the flooding was the result of one of the following:

- An incorrect month or year was reported in the application.
- Flooding was from overland flow rather than the Fox River.
- Backwater effects from downstream lake levels were leading to increased elevations in the Fox River upstream.

Additional analysis was performed to determine whether backwater effects were likely to be increasing the water level in the Fox River in the vicinity of the buildings near Silver Lake, Salem, and Wheatland. The Fox River flows into Grass Lake in Lake County, Illinois, approximately 9 miles downstream of the buildings in Silver Lake. Flow from Grass Lake continues to Nippersink and Fox lakes, then to Pistakee Lake before continuing farther downstream as Fox River.

The USGS reports mean daily lake levels (and instantaneous lake levels every 15 minutes for the past 60 days) for Nippersink Lake (ID# 05548000) and Fox Lake (ID# 05547500). The locations of the USGS gages are shown in Figure 4.4. The mean daily lake levels were also compared to the flow in Fox River near New Munster, as shown in Figure 4.3. The data were used in the Hydraulic Analysis

(see Section 4.2.1) to determine how downstream lake levels would influence the Fox River levels upstream.

The Hydraulic Analysis and subsequent Flood Inundation Analysis indicated that multiple storm events occurring only weeks apart could potentially have caused damage. Because loss avoidance calculations are based on the assumption that sufficient time elapses between storm events to allow for repairs to be completed, it was necessary to limit the storm event analysis to a single storm within the selected time interval. A time interval of at least 180 days between storms, or approximately 6 months, was chosen to allow for the hypothetical repairs to be completed. The storm during this period that would have resulted in the most damage was selected.

A time interval of at least 180 days between storms was chosen to allow for the hypothetical repairs to be completed.

Note that this assumption could affect the loss avoidance calculations. For example, Figure 4.3 shows that the record flow occurring in June 2008 was preceded by a fairly large event in April 2008 (approximately 2 months earlier). For this study, only the larger event in June was used in the loss calculations. A total of 14 events were considered in Phase 3 of the LAS for the Fox River (one event a year between 1996 and 2009).

4.1.1.2 Rock River

According to the Jefferson County Flood Insurance Study (FIS), buildings studied along the Rock River are within the portion of the reach that is subject to backwater effects from Lake Koshkonong. USGS completed an HWM study for the June 2008 flood in southern Wisconsin (Fitzpatrick et al., 2008). The report confirms that HWMs along the Rock River between the lake and up to 2 miles upstream would correspond to the stage of the lake. The USGS Lake Koshkonong gage near Newville, Wisconsin (ID# 05427235), was used for the Storm Event Analysis (see Figure 4.5).

Buildings along Rock River are subject to backwater effects from Lake Koshkonong. Lake stages were therefore used for the analysis.

Daily stage data were compiled for the period between the earliest acquisition date of January 1, 1989, and June 30, 2009. The daily stages are shown in Figure 4.6. The solid horizontal line represents the lowest FFE (779.2 feet National Geodetic Vertical Datum of 1929 [NGVD29]) in the Jefferson County projects. The dashed horizontal line represents the elevation 2 feet below the lowest FFE because that is where damages will begin to be counted.

Using the same assumptions for Rock River that were used for the Fox River, a total of 8 storm events, with at least 6 months separating them, were identified to have been large enough to cause damage in the MP_A scenario. The storm events are listed in Table 4.2.

Figure 4.5

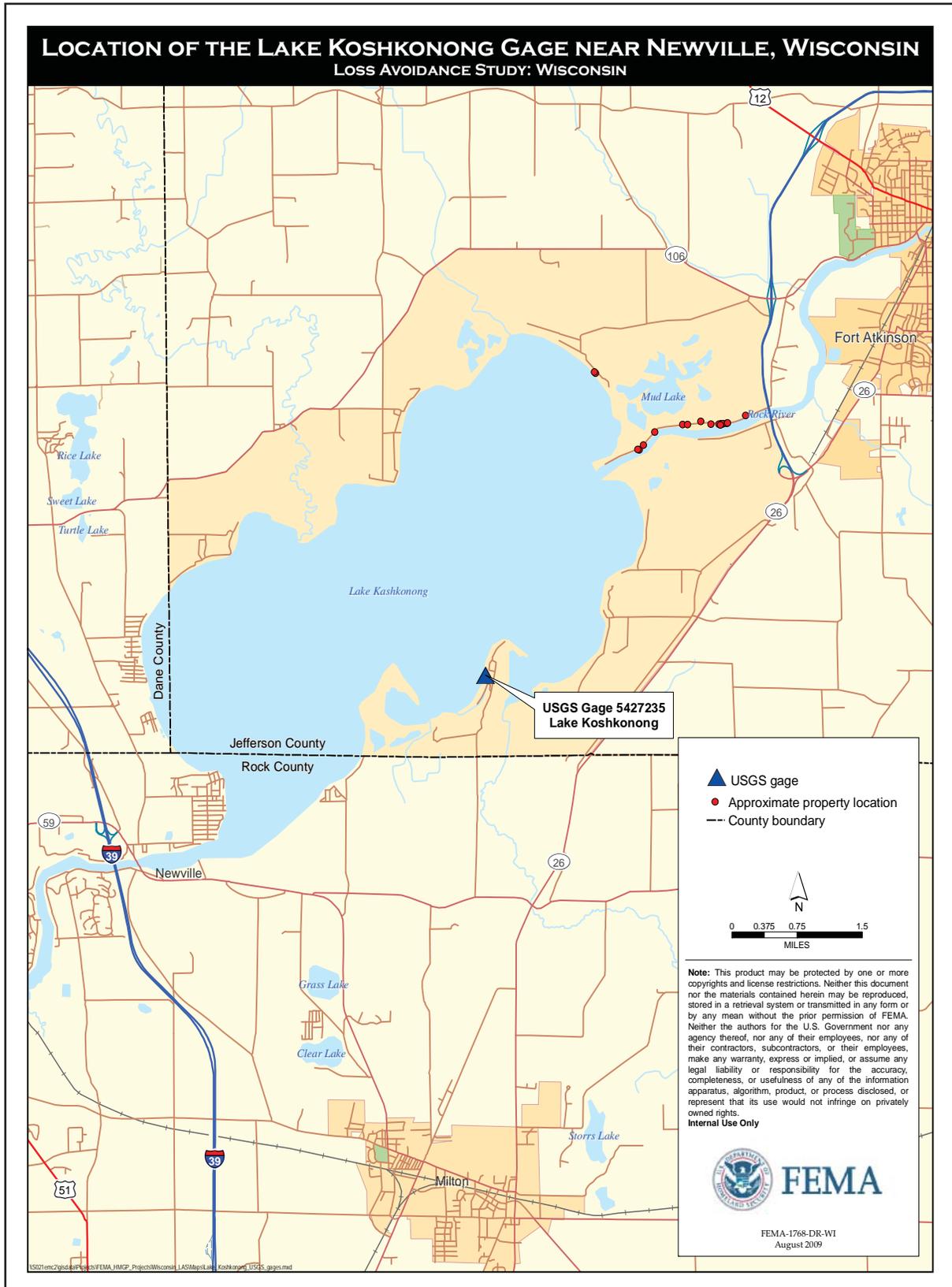


Figure 4.6

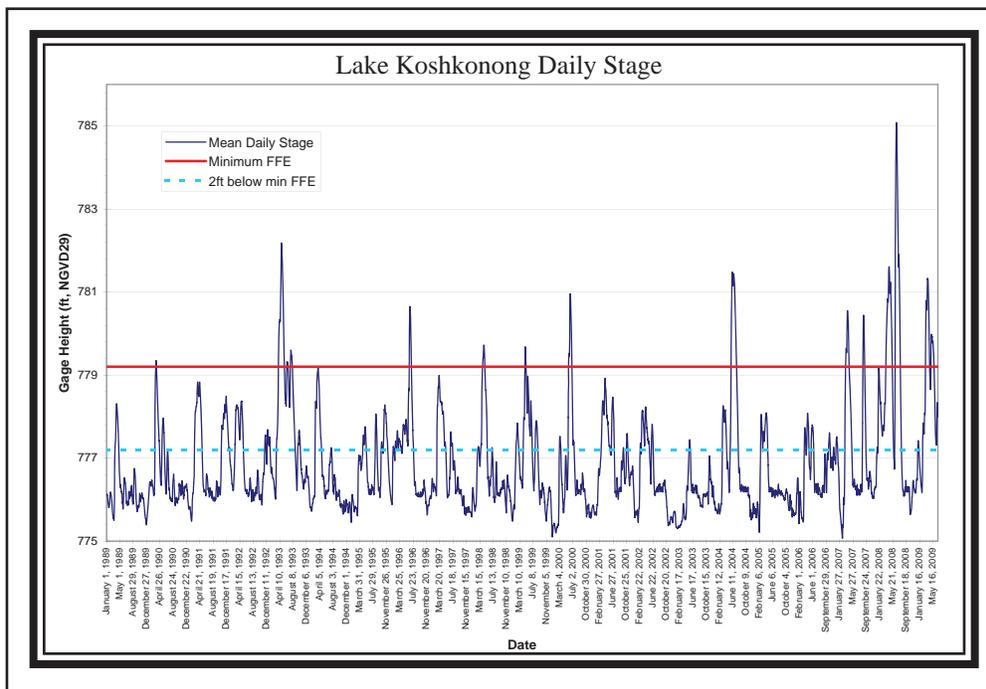


Table 4.2

PEAK WATER LEVELS ON LAKE KOSHKONONG USED IN ANALYSIS	
DATE OF STORMS	STAGE (FEET, NGVD29)
April 25, 1993	782.18
June 24, 1996	780.65
April 29, 1999	779.68
June 8, 2000	780.96
June 5, 2004	781.48
April 8, 2007	780.55
June 22, 2008	785.08
March 29, 2009	781.33

Source: USGS 2009b
 NGVD29 = National Geodetic Vertical Datum of 1929

4.1.1.3 KICKAPOO RIVER

The USGS Kickapoo River gage (ID# 05410000) at Gays Mills, Wisconsin, was inundated in a large event in 1977 and has not been reinstalled. Therefore, the gage did not have the period of record necessary to complete the analysis. However, the NWS's Advanced Hydrologic Prediction Center has archived the top 10 peak stages for the Kickapoo River in the same location (Gage ID GMIW3). The peak stages are listed in Table 4.3.

Table 4.3

PEAK WATER LEVELS ON KICKAPOO RIVER USED IN ANALYSIS	
DATE OF STORM	STAGE (FEET, NGVD 29)
<i>June 9, 2008</i>	705.44
<i>July 2, 1978</i>	704.80
<i>August 20, 2007</i>	704.79
<i>February 10, 1966</i>	701.75
<i>June 1, 2000</i>	701.50
<i>April 3, 1982</i>	701.10
<i>July 22, 1951</i>	701.00
<i>March 3, 1965</i>	700.80

Source: NWS (2009)
NGVD29 = National Geodetic Vertical Datum of 1929

Only two events occurred after the project completion date for the building in Crawford County.

Of the 10 highest stages shown in Table 4.3, only the August 2007 and June 2008 events occurred after the date the building in Gays Mills was demolished (January 2005). These two events were used in the analysis.

4.2 HYDRAULIC ANALYSIS

Hydraulic modeling is usually required to determine the WSE and depth of flooding at locations of interest. Hydraulic modeling uses peak flows determined in the Storm Event Analysis (see Section 4.1) as the discharges in the model. This is in conjunction with using detailed topographic data to estimate WSEs at a series of cross sections for the event(s) of interest. It may not be necessary to use a hydraulic model for each event if results of HWM studies or WSE profiles developed from existing hydraulic models are sufficient to determine the WSE and flood depths for the desired storm events.

If the flood source was studied in detail, for example for a FEMA Flood Insurance Rate Map (FIRM), obtaining a copy of the existing hydraulic model may be possible. Results from the existing model in the FIS may be used to interpolate actual storm events, or modifying the model may be possible simply by replacing the original flow data with the event of interest. However, only portions of the original model may be applicable for use, especially if the channel has migrated since the model was completed.

When an existing hydraulic model is not available, the parameters required to set up a new model include cross section elevation data, roughness coefficients, boundary conditions, discharge (from the Storm Event Analysis), and data for any hydraulic structures in the model area. A list of FEMA-acceptable hydraulic models is available at www.fema.gov. If creating a new hydraulic model is necessary, detailed topographic data for all river reaches of interest are necessary for channel cross sections to be created. Outlier buildings or buildings located where adequate topographic data are not available should be removed from the building list.

Buildings located on flooding sources with existing hydraulic modeling available or on flooding sources that can be modeled with appropriate methods will proceed to the Flood Inundation Analysis.

4.2.1 WISCONSIN STUDY: HYDRAULIC MODELING

4.2.1.1 FOX RIVER

The Fox River was studied in detail for the FEMA FIS and FIRMs in 1977 to aid in floodplain management decisions. The Kenosha County FIS contains flood profiles and discharge summaries for the 10-, 50-, 100-, and 500-year storm events. The hydraulic model of the Fox River that was used to create the flood profiles in the Kenosha County FIS was obtained from the Southeastern Wisconsin Regional Planning Commission (a scanned file of input and output from the U.S. Army Corps of Engineers [USACE] Hydrologic Engineering Center's [HEC's] water surface profile computer program, HEC-2, for the Fox River from Wilmot Dam to the Racine County Line) and from the Wisconsin Department of Natural Resources (a text file with the HEC-2 input for the Fox River in the incorporated area of Silver Lake).

Table 4.4

SUMMARY OF DISCHARGES ON FOX RIVER					
LOCATION	DRAINAGE AREA	PEAK DISCHARGES (CFS)			
		10-YEAR	50-YEAR	100-YEAR	500-YEAR
Above County Trunk Highway JB (approximately 40 feet upstream of the USGS gage near New Munster). This flow applies upstream of the Racine County boundary.	812.7 sq. mi.	4,500	6,950	8,200	11,400
Above County Trunk Highway F (approximately 8.5 miles downstream of the USGS gage near New Munster). This flow applies from the Racine County boundary to Highway F.	858.8 sq. mi.	4,550	7,100	8,350	11,500
Above County Trunk Highway C (approximately 11 miles downstream of the USGS gage near New Munster). This flow applies from Highway F to Highway C and downstream to the Illinois border.	868.0 sq. mi.	4,650	7,200	8,450	11,600

Source: FEMA (1996) cfs = cubic foot (feet) per second sq. mi. = square mile(s) USGS = U.S. Geological Survey

The flow change locations in the HEC-2 model were the same as the locations given in the summary of discharges table in the FIS for Kenosha County. The locations are listed in Table 4.4. Because the USGS gage for the Fox River near New Munster is about 40 feet downstream of the Racine County line and more than 3 miles upstream of the buildings that are part of the study, it is likely that the flow affecting the buildings would be higher than the flow measured at the USGS gage. The buildings in the study are all between the Racine County boundary and Highway F. For the hydraulic modeling, it was assumed that the flow measured at the USGS gage near New Munster would be equivalent to the HEC-2 flows applied upstream of the Racine County boundary. This assumption is consistent with a modeling approach that would apply the flow calculated at the downstream end of a particular reach of a river to the entire reach. It was assumed that this approach would be consistent with the way the flows were calculated along the Fox River and input to the existing HEC-2 model.

The amount to increase the downstream flows in the model was based on a combination of the measured flow at the USGS gage compared to the FIS flow for the same location (shown as “Above County Trunk Highway JB” in Table 4.4) and the difference in the FIS flows from upstream to downstream. Most of the measured flows were below the 10-year flow. For the flows that were between the 10- and 50-year flows, the downstream flows were interpolated. All flows were rounded to the nearest 10 cubic foot per second (cfs). The method is explained below and example calculations are shown in Table 4.5.

The June 2008 storm provides an example of the method used for flows that were between the 10- and 50-year flows. On June 15, 2008, the measured peak flow at the USGS gage was 5,960 cfs or a value about 60% between the FIS flows of 4,500 cfs and 6,950 cfs for the 10- and 50-year events.

From the Racine County boundary downstream to Highway F, the flow in the HEC-2 model is increased by 50 cfs for the 10-year event and 150 cfs for the 50-year event to account for the increased drainage area. The flow for the June 2008 event would therefore have been increased by a value of 60% between 50 cfs and 150 cfs, or 110 cfs. Adding 110 cfs to 5,960 cfs results in a flow of 6,070 cfs for the June 2008 event. From Highway F downstream to the Illinois border, the flow is increased by 100 cfs for both the 10- and the 50-year events. Therefore, for all the measured flows greater than the 10-year flow listed in the FIS, the flow was increased by 100 cfs downstream of Highway F. For the June 2008 event, the addition of 100 cfs to 6,070 cfs results in a downstream flow of 6,170 cfs.

Table 4.5

EXAMPLE CALCULATIONS FOR DETERMINING DISCHARGES IN HYDRAULIC MODEL								
LOCATION	DISCHARGES USED IN HYDRAULIC MODEL (CFS)				INCREASES IN MODEL FLOWS FROM UPSTREAM TO DOWNSTREAM (CFS)			
	MARCH 15, 2006, STORM EVENT FLOWS	10-YEAR FLOWS FROM FIS	JUNE 15, 2008, STORM EVENT FLOWS	50-YEAR FLOWS FROM FIS	MARCH 15, 2006, STORM EVENT FLOWS	10-YEAR FLOWS FROM FIS	JUNE 15, 2008, STORM EVENT FLOWS	50-YEAR FLOWS FROM FIS
Upstream of Racine County boundary	2,980	4,500	5,960	6,950	NA	NA	NA	NA
From Racine County boundary to Highway F	3,010	4,550	6,070	7,100	30 = (2,980/4,500)*50	50 = 4,550 - 4,500	110 = 50 + [(5,960 - 4,500) / (6,950 - 4,500)] * (150 - 50)	150 = 7,100 - 6,950
Downstream of Highway F to Illinois border	3,080	4,650	6,170	7,200	70 = (2,980/4,500)*100	100 = 4,650 - 4,550	100 = (100 + 100) / 2	100 = 7,200 - 7,100

cfs = cubic foot (feet) per second
 FIS = Flood Insurance Study for Kenosha County (FEMA, 1996)
 NA = Not applicable

For the measured flows that were below the FIS 10-year flow, the amount to increase the flows going downstream was based on using the ratio of the measured flow to the FIS 10-year flow and applying the ratio to the flow increases used in the FIS for the 10-year event. For example, on March 15, 2006, the measured peak flow at the USGS gage was 2,980 cfs. The flow increase from the Racine County boundary downstream to Highway F for the 10-year event is 50 cfs (from 4,500 cfs to 4,550 cfs, as shown in Table 4.5). Because 2,980 cfs is 66% of the 10-year flow of 4,500 cfs, the flow was increased by 66% of 50 cfs, which was rounded to 30 cfs, between the Racine County boundary and Highway F. The 10-year flow in the HEC-2 model increases by 100 cfs from Highway F downstream to the Illinois border. Therefore, the flow in this reach for the March 2006 event was increased by 66% of 100 cfs, which was rounded to 70 cfs. For the March 2006 event, this resulted in an upstream inflow of 2,980 cfs applied upstream of the Racine County boundary, 3,010 cfs applied from the Racine County boundary to Highway F, and 3,080 cfs applied downstream of Highway F.

The Storm Event Analysis (see Section 4.1.1) determined that the historical flooding of buildings was controlled by backwater effects. Subsequently, the FIS for Lake County, Illinois, and Kenosha County, Wisconsin, were reviewed for information about backwater effects. The Lake County FIS flood profiles for the Fox River are controlled by Grass Lake during the 10-, 50-, 100-, and 500-year events at a point approximately 0.8 mile downstream of the Illinois/Wisconsin boundary.

An existing HEC-2 model was imported into the HEC-RAS program for the analysis of the Fox River.

The HEC-2 model from the FIS was imported into the USACE hydraulic modeling program, Hydrologic Engineering Center River Analysis System (HEC-RAS). to model the water levels corresponding to measured flows in the Fox River. The downstream tailwater conditions in the HEC-2 model obtained from the Southeastern Wisconsin Regional Planning Commission were based on the effects of the Wilmot Dam, which has been removed. Therefore, it was necessary to estimate what the downstream water levels would be without the dam. The Kenosha County flood profile for the Fox River starts at the Illinois/Wisconsin boundary and continues upstream. The FIS profile upstream of the dam does not reflect current conditions because the modeling was performed in 1977 and the dam was removed in 1992. However, the FIS profile downstream of the dam still represents current conditions.

The 10-year FIS profile has a water surface slope of approximately 0.0002 from approximately 500 feet downstream of the removed Wilmot Dam to Grass Lake. The downstream water levels are controlled by Grass Lake. The downstream section from the

HEC-2 model was copied so that the downstream boundary of the HEC-RAS model would be at the same location approximately 500 feet downstream of the removed Wilmot Dam.

The daily water levels are very similar in the Fox and Nippersink lakes. Grass Lake is upstream of Fox Lake and Nippersink Lake (see Figure 4.4), but there is no water-level gage on Grass Lake. It was assumed that the water level in Grass Lake would be 0.5 foot higher than the level measured in Fox Lake or Nippersink Lake. The higher elevation of Fox Lake and Nippersink Lake was used. As shown in Figure 4.4, Fox Lake and Nippersink Lake are connected and are roughly the same distance downstream of Grass Lake. The combination of the level of Grass Lake and an assumed slope upstream from Grass Lake to the former location of Wilmot Dam was used to determine the downstream boundary condition for the HEC-RAS model for selected storm events. For a particular instantaneous flow rate, it was assumed that the downstream water level should be based on the mean daily water level for the same day as the flow event.

An initial water surface slope from Grass Lake of 0.0002 was used based on the FIS, but there were several events with reported historical flooding that were not modeled correctly, such that the WSE would not have caused damages at the buildings that were damaged. Hence, the model was calibrated based on the reported flooding. The assumption that Grass Lake would be 0.5 foot higher than the measured downstream lake levels became a part of the calibration because of its effect on water levels in combination with the water surface slope.

The slope used in the calibrated model was 0.0005 instead of the initial slope of 0.0002, although there were still a few events with reported historical flooding where the modeled water levels would not have been high enough to result in calculated damages. As discussed in the Storm Event Analysis in Section 4.1.1, it is possible that either the month or year of the reported flooding was wrong or the flooding may not have actually been caused by the Fox River.

After the HEC-RAS model was calibrated, the events that occurred no more frequently than every 180 days (180 days are allowed for repairing damages) and that resulted in the highest water surface profiles were selected for the Flood Inundation Analysis.

4.2.1.2 Rock River

As discussed in Section 4.1.1, the Storm Event Analysis for Rock River provided sufficient information for a Flood Inundation Analysis. The USGS HWM study of the June 2008 flood (Fitzpatrick

et al., 2008) confirmed that HWMs along the Rock River between Lake Koshkonong and 2 miles upstream of the lake correspond to the stage of the lake. WSEs recorded at the Lake Koshkonong gage for all other events were also assumed to be equivalent to the WSEs at each building along Lake Koshkonong and Rock River, consistent with the USGS HWM study for the June 2008 flood.

4.2.1.3 KICKAPOO RIVER

The USGS HWM study of the June 2008 flood (Fitzpatrick et al., 2008) confirmed that HWMs near the building in Gays Mills correspond to the peak stage measured at the gage in the Kickapoo River (Gage ID GMIW3). The June 2008 event had a measured WSE at the gage of 705.44 feet NGVD29. The two HWMs closest to the building in Gays Mills were determined to be 705.15 feet NGVD29 and 705.65 feet NGVD29 (using a conversion of 0.15 foot from the USGS Vertcon program to convert between North American Vertical Datum of 1988 [NAVD88] and NGVD29). The measured HWMs for June 2008 are higher and lower than the measured peak water surface at the gage, so it was reasonable to use the gage elevation as the WSE at the building. The WSE at the building in Gays Mills for the August 2007 event was also assumed to be equivalent to the peak elevation of 704.79 feet NGVD29 measured at the Kickapoo River gage.

4.3 FLOOD INUNDATION ANALYSIS

For acquisition projects, the Flood Inundation Analysis is the final step of Phase 2. WSEs are compared to the MP_A FFEs to determine whether buildings would have been affected by the peak storm event(s). Mapping the flood boundary is not required for acquisition projects because the flood depths are required only at the individual buildings.

Most Flood Inundation Analyses and mapping are conducted using GIS software. The cross sections from the hydraulic model are digitized and attributed with peak WSEs for the events of interest. Flood elevations are then interpolated and converted to a water surface layer to account for flood elevations in all areas between the cross sections. From this surface, a peak WSE at each building is exported in table format.

When MP_A FFE data are available for acquisition projects, extracting the WSE at the building from the flood elevation surface directly greatly reduces analysis time by eliminating the need to compare the ground elevation and flood elevation surfaces. To determine the

depth of flooding in the building for the MP_A scenario, the FFE is subtracted from the WSE at each building.

When the FFE is unknown, detailed topographic information is needed to calculate the flood depth between the ground and the WSE. The flood depth at each building is then calculated by subtracting an assumed height above grade, based on the building's foundation type or building photography, from the overall flood depth.

4.3.1 WISCONSIN STUDY: FLOOD INUNDATION ANALYSIS

The Flood Inundation Analysis was completed by comparing the WSE for the actual storm events directly to the FFE for each building. The MP_A FFEs were provided for each building by the Counties participating in the study. The vertical datum of each FFE was not provided. The reported FFEs were assumed to be relative to NGVD29 because FIRMs and FEMA elevation certificates are predominantly reported relative to NGVD29. This assumption could result in the calculation of slightly deeper flood depths if any of the FFEs were reported relative to NAVD88. Based on the conversion from NGVD29 to NAVD88 from the USGS Vertcon program, the difference between NGVD29 and NAVD88 is 0.25 foot in the Fox River area, 0.22 foot in the Rock River area, and 0.15 foot in the Kickapoo River area.

4.3.1.1 FOX RIVER

The locations of the lettered cross sections from the FIS (HEC-2) model of Fox River were digitized from the FIRMs for Kenosha County and the Flood Boundary and Floodway Map for Silver Lake using GIS software. The locations of intermediate cross sections in the model were digitized based on the downstream distance between the sections in the HEC-2 model. The cross sections upstream and downstream of each building were then identified. The WSE at each building was interpolated based on the WSE at the model cross sections upstream and downstream of the building and the distance between the two sections versus the approximate distance from the upstream section to the building.

To determine the flood depth for each building, the FFE was subtracted from the WSE (interpolated from the results of the HEC-RAS model) for each storm event analyzed. The flood depths at each building for the top three storms that resulted in the greatest losses avoided are shown in Appendix B, Figures B.1 through B.3. These figures show the flood depths at all the buildings in Kenosha County, regardless of whether the building had been demolished after the particular storm event.

4.3.1.2 ROCK RIVER

The FFE for each building was subtracted from the stage of Lake Koshkonong for each storm event on the Rock River. The flood depths for the top three storms that resulted in the greatest losses avoided are shown in Appendix C, Figures C.1 through C.3. These figures show the flood depths at all the buildings in Jefferson County, regardless of whether the building had been demolished after the particular storm event.

4.3.1.3 KICKAPOO RIVER

The FFE for the building in Gays Mills was subtracted from the measured river stage for each of the two storm events on the Kickapoo River. The flood depth for each storm is shown in Appendix D, Figure D.1.

Section Five:

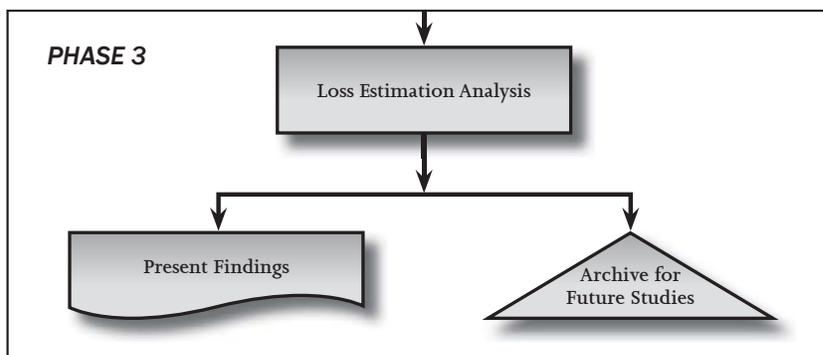
PHASE 3 – LOSS ESTIMATION ANALYSIS

The final phase of an LAS consists of estimating the losses avoided based on the effectiveness of the mitigation project during the MP_C storm events. This section provides a synopsis of Phase 3, the Loss Estimation Analysis, for an acquisition project. The methodology is illustrated in Figure 5.1.

The two major tasks in Phase 3 are:

- Calculating losses avoided
- Calculating the ROI

Figure 5.1



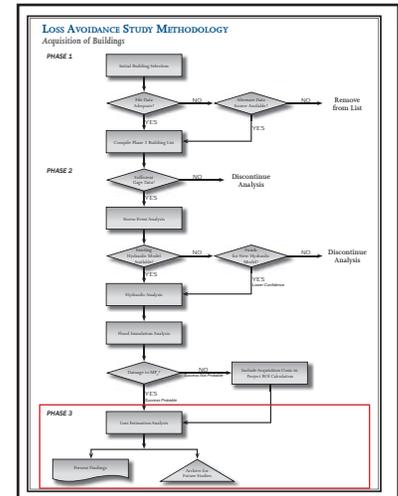
The approach used to estimate flood damages is based on the FEMA Benefit-Cost Analysis (BCA) Version 4 software (FEMA, 2008a) and technical guidance unless stated otherwise in the text. *What Is a Benefit?* (FEMA, 2001) also provides a basis for calculating losses. The values in the 2001 publication have been updated since 2001, but the methodology is still current.

For a more information on Phase 3, see *Loss Avoidance: Riverine Flood Methodology Report* (FEMA, in press[b]) and *Loss Avoidance: Nontraditional Benefits Methodology Report* (FEMA, in press[a]).

5.1 CALCULATING LOSSES AVOIDED

In Phases 1 and 2 of an acquisition study, the following information is determined:

- The storm events that have occurred since the study baseline that would have caused damages in the MP_A scenario.
- The number and type of buildings affected by the storm events being analyzed in the MP_A scenario.



- The flood depth at each building in the MP_A scenario, estimated from the Flood Inundation Analysis.

For Phase 3, the dollar value estimate of the losses (damages) is calculated for the MP_A scenario using the flood depth at each building for events occurring after the study baseline. The general method of calculating losses avoided (in dollars) would be to subtract MP_C damages from the MP_A damages, per the formula presented in Figure 5.2.

Figure 5.2

LOSS ESTIMATION ANALYSIS

$$MP_A - MP_C = LA$$

Where MP_A = Mitigation Project Absent
 Where MP_C = Mitigation Project Completed
 Where LA = Losses Avoided

However, for acquisition projects, there are no MP_C damages because the building no longer exists. Therefore, losses avoided are equal to MP_A damages.

When losses are calculated, all of the losses should be presented as present-day values. Therefore, if historical losses from similar events are used as estimates, they should be adjusted to present-day values.

5.1.1 LOSS CATEGORIES

Once the Flood Inundation Analysis is complete and the potentially affected buildings have been identified, flood damages must be evaluated. As shown in Table 5.1, potential damages are divided into loss categories. Loss categories generally include physical damage, loss of function, and emergency management costs, all of which contain multiple loss types. The calculation of the losses avoided for building modification projects, such as acquisition projects, differs from flood reduction projects in that only the loss types that apply to buildings can be used in calculating losses.

5.1.1.1 PHYSICAL DAMAGE

For an acquisition study, physical damage is limited to the direct damage to the building and its contents. Physical damages can be estimated using either:

Table 5.1

LOSS ESTIMATION CATEGORIES AND TYPES	
LOSS CATEGORY	LOSS TYPE
Physical Damage	Buildings*
	Contents*
	Roads and Bridges
	Infrastructure
	Landscaping
	Environmental Impacts
	Vehicles/Equipment
Loss of Function	Displacement Expense*
	Loss of Rental Income*
	Loss of Business Income*
	Lost Wages*
	Disruption Time for Residents*
	Loss of Public Services*
	Economic Impact of Utility Loss
Economic Impact of Road/Bridge Closure	
Emergency Management	Debris Cleanup
	Governmental Expense

Source: FEMA (2007)
* Applies to building acquisition projects

- FEMA BCA Version 4 software depth-damage functions
- Historical damages from events of similar size

When available, actual repair costs (or replacement costs if the building was substantially damaged) should be used to estimate losses if similar flood events have occurred in the past. However, it must first be verified that the hydraulic conditions of the river and the physical condition of the project site were substantially the same during the two events. For example, if the building has been altered since the historical event, or if sandbagging was used during the event, repair costs related to flood damage should not be used for the LAS.

Historical damage data may be obtained from various sources such as homeowner insurance claims, flood insurance claims, the National Flood Insurance Program BureauNet database, Small Business Administration loan application databases, local contractors, and homeowner interviews. The BCA that was performed for the funding application of the mitigation project may also contain historical damage data. Additionally, for events in which there was

Sources of Physical Damage Data

- Depth-damage curves obtained from HAZUS-MH
- Insurance information
- HMGP or FMA project files and BCAs
- Public Assistance program Project Worksheets
- Historical flood damage information

a disaster declaration, FEMA may have provided grant funds under the Public Assistance (PA) Program for repairs to buildings owned by public entities and certain private, non-profit organizations. Damage and repair information may be obtained from Damage Survey Reports (DSRs) or Project Worksheets (PWs) that FEMA prepared to document eligible costs under the PA Program. If this information is not available, the losses must be estimated.

Standardized damage curves relating depth of flooding to building and contents damage (calculated as a percentage of the BRV) are available from FEMA and the USACE.

5.1.1.2 Loss of Function

For an acquisition study, loss-of-function damages are the economic impacts to an individual or the community that occur because of the physical damage to the building. Loss-of-function damages can vary extensively depending on the type of building. For example, loss-of-function costs associated with damage to a residence could be costs associated with moving to and renting another residence while flooding subsides and repairs occur. Loss-of-function costs associated with damages to a business could be lost business, temporary relocation to another building, or lost wages for employees. Loss-of-function costs resulting from damages to public buildings could be the loss of critical public services, such as police and fire departments.

For acquisition studies, loss of function includes displacement expense, loss of rental income, loss of business income, lost wages, disruption time for residents, and loss of public service.

Loss-of-function costs are based on the amount of time a building is not functional after a flood because of the amount of destruction to the building and the value of the particular function. The amount of time a building cannot be used in its normal capacity increases with the severity of damage to the building.

As with physical depth-damage relationships, published relationships between flood depth and loss-of-function time can be used to calculate these costs. For example, the FEMA BCA Version 4 software contains methodologies and values that can be used to calculate loss of function. The Hazards U.S. – Multihazard (HAZUS-MH) Technical Manual (FEMA, 2006) contains methods similar to the FEMA BCA Version 4 software with regional adjustments to various loss-of-function methods.

Communities may also provide costs from past events that demonstrate the impact of the events. In these cases, local values

Sources of Loss-of-Function Data

- Factors used in HAZUS-MH for loss of function calculations
- FEMA BCA loss of function calculations
- Individual Assistance program documentation
- Public Assistance Program Project Worksheets or Damage Survey Reports
- Net income from business owners
- Annual operation budget from local agencies
- Population served by critical facilities and distance to next available facility
- Historical flood damage information

provide a more accurate representation of a project area than the national or regional values from tools such as the FEMA BCA Version 4 software or HAZUS-MH. Additionally, USACE publications on post-disaster impacts from flooding and FEMA DSRs or PWs contain information about loss of function from specific locations.

5.1.1.3 EMERGENCY MANAGEMENT COSTS

Emergency management costs are costs related to response and recovery activities conducted by local, State, and Federal government agencies as a result of a hazard event. For example, the community experiences costs for ensuring public safety. It is important to note that emergency management costs should be considered only for an LAS when a large group of adjacent buildings is acquired. The costs are obtained primarily from historical damage records, such as DSRs or PWs prepared by FEMA during declared disaster events under the PA Program. If actual costs from previous events are known, they should be used. If costs are to be estimated, the following steps can be used to calculate the impacts of emergency response measures:

- Local representatives can be interviewed to identify the types of services required and the level of effort required in delivering those services.
- The duration of the flood and the appropriate salary categories can be used to estimate the costs for first responders.
- The estimated flood recovery time and the appropriate salary categories can be used to estimate the impact to other municipal employees. The impact may include cleanup and costs associated with implementing repairs.

Sources of Emergency Management Data

- Public Assistance program Project Worksheets for emergency work
- Interviews with local public safety officials
- Historical flood damage information

5.1.2 WISCONSIN STUDY: CALCULATING LOSSES AVOIDED

The methodology described above was used to calculate MP_A damages for the three counties in this study. As explained previously, no MP_C damages exist because all building were demolished. Physical damages were limited to buildings and contents damage and were estimated based on the flood depth above FFE, calculated during the Flood Inundation Analysis. Because all buildings in Kenosha and Jefferson counties were residential, loss-of-function costs were limited to displacement and disruption. The losses for the public building in Gays Mills, however, included loss of public service based on the annual budget. Displacement was not counted due the industrial function of the building.

For all buildings, physical damages to the buildings and contents were estimated using present-day (2009) BRVs provided by the Counties for each building, and an appropriate building-to-content

ratio provided by the FEMA BCA Version 4 software for the value of contents. The damages were calculated using the appropriate depth-damage functions based on building type, provided by the FEMA BCA Version 4 software. All depth-damage functions used in this study can be found in Appendix A.

For the residential buildings in Kenosha and Jefferson counties, FEMA BCA Version 4 software guidance for residential displacement cost of \$1.44/square foot/month rental costs were used. For all buildings, the FEMA BCA Version 4 software damage function for displacement time was used to estimate the repair time in days.

Disruption costs were also estimated for the residential buildings in Kenosha and Jefferson counties. FEMA BCA Version 4 software guidance provides a national average wage of \$28.11 per hour per person. The time of disruption was calculated using the estimate that each adult occupant is disrupted 40 hours plus 8 hours for every 1% in building damage (FEMA, 2006). Assuming a conservative estimate of two adults per building, these standards were used to calculate the disruption time for residents.

For residential buildings, losses avoided were calculated using physical damages, and displacement and disruption costs.

To calculate the loss-of-function damages for the public building in Gays Mills, the total annual operating budget for the building was obtained. According to the 2001 Crawford County Budget, the total budget for the Highway Shop Operating was \$1,978,786. This value was inflated to 2009 dollars (\$2,506,667) and divided by 365 to determine a daily value of service. The FEMA BCA Version 4 software damage function for loss of function was used to estimate the days of loss for each event.

Emergency management costs are not expected to change and therefore are generally not included in LASs for acquisition projects. Acquisition of a single residential building, small groups of buildings, or groups in scattered locations is unlikely to reduce a community's emergency management costs because the area affected by a disaster is not decreased and the total population affected by disaster is not substantially decreased (FEMA, 2001). Therefore, emergency management costs should be considered only when a large group of adjacent buildings is acquired. The number of acquired buildings in each of the three Wisconsin counties was not large enough to significantly affect emergency response. Emergency management costs were therefore not estimated for this study.

5.2 CALCULATING RETURN ON INVESTMENT

Calculating the ROI is the final task in determining losses avoided. The results vary depending on the number of events evaluated for

each building and the resulting level of damage. Figure 5.3 provides an illustration of the formula used in calculating ROI.

The denominator, Project Investment (PI), is the total project investment for the project being evaluated, or in the case of acquisition projects, the fair market cost to acquire and demolish the building and restore the property. Project investment does not represent the Federal investment alone. Rather, it is the total investment for the project made by all parties involved. The investment total must be representative of the acquisition costs. Also, all of the losses avoided are calculated in present-day values; therefore, the actual costs to acquire each building should also be adjusted to present-day values.

Figure 5.3

RETURN ON MITIGATION INVESTMENT

$$\frac{\$ LA}{\$ PI} \times 100 = \%ROI$$

Where LA = Losses Avoided
Where PI = Project Investment
Where ROI = Return on Investment

The numerator, Losses Avoided (LA), represents the total losses avoided for the mitigation project being evaluated. The ROI may be calculated for one or many flood events occurring after the study baseline. If a storm event did not occur that was large enough to have caused damage in the MP_A scenario, the losses avoided are zero. If multiple events are being evaluated for each mitigation project, the LA would represent the total losses avoided for all the flood events. Therefore, the ROI would represent the cumulative ROI.

An ROI can be calculated for each individual building, for a mitigation project (which could include multiple buildings), by storm event, or for the whole study area (which could include multiple projects). If an ROI is calculated for multiple buildings, taking an average of the ROI for each building is not appropriate. The total losses avoided for all of the buildings should be added and divided by the total construction costs. This is referred to as aggregation.

5.2.1 WISCONSIN STUDY: CALCULATING RETURN ON INVESTMENT

The ROI is influenced by data quality, storm severity, and the relative costs of the building acquisitions. In general, buildings affected by a greater number of events yielded higher ROIs. ROI was calculated in four ways to provide a series of data:

- Within each county, an ROI was calculated for each individual building for each event analyzed (see Appendix B, Tables B.1 through B.14, for Kenosha County; Appendix C, Tables C.1 through C.8, for Jefferson County; and Appendix D, Table D.1, for Crawford County).
- An ROI was also calculated for each building based on the cumulative avoided loss for all of the events that would have affected the building had it not been acquired (see Appendix E, Table E.1).
- A total ROI was calculated for each event occurring within each of the three counties based on the cumulative avoided losses of all the buildings within the county that would have been affected and the total cost to acquire all the buildings with the county. These values are shown in Table 5.2 for Kenosha County, Table 5.3 for Jefferson County, and Table 5.4 for Crawford County.
- A total ROI was calculated for the study as a whole, based on the cumulative loss of all the buildings and all storm events and the total cost to acquire all of the buildings (see Appendix E, Table E.1).

For the individual buildings in the study, ROI ranged from 0% to 2,586%. The building with an ROI of 2,586% had an unusually low project cost of \$7,841 in current values, which was verified by Kenosha County.

The total losses avoided for the 73 buildings along the Fox River in Kenosha County were \$8,275,864 with an ROI of 102%. One of the properties along the Fox River was acquired after the building had burned down at a cost of \$1,348 in current values. No ROI was calculated because it was assumed that nothing would have been rebuilt so that there would be no damages avoided.

The total losses avoided for the 18 buildings along the Rock River in Jefferson County were \$2,345,726 with an ROI of 107%. The total losses avoided for the building along the Kickapoo River in Crawford County were \$3,929,449 with an ROI of 592%.

Appendix E, Table E.1, shows that the aggregate ROI for all three counties in the Wisconsin study was 132%, using the combined losses avoided of \$14,551,039 and a combined project investment of \$10,996,559. The ROI reflects all the losses avoided for events occurring after each building's demolition completion date, and it will increase as additional storm events occur. More detailed loss calculations for each building and each event are included in Appendices B through D.

Table 5.2

RETURN ON MITIGATION INVESTMENT AND LOSS ESTIMATION RESULTS FOR BUILDINGS IN KENOSHA COUNTY									
ANALYSIS INFORMATION			RESULTS BY LOSS CATEGORY				TOTAL LOSSES AVOIDED	PROJECT INVESTMENT ²	CURRENT ROI
EVENT DATE	NUMBER OF BUILDINGS INCLUDED IN ANALYSIS ¹	NUMBER OF BUILDINGS WITH LOSSES AVOIDED	BUILDING DAMAGE	CONTENTS DAMAGE	DISPLACEMENT COSTS	DISRUPTION COSTS			
June-1996	8	3	\$22,508	\$13,795	\$225	\$19,460	\$55,986	\$988,615	6%
February-1997	10	4	\$19,832	\$12,039	\$0	\$20,343	\$52,214	\$1,182,299	4%
April-1998	11	3	\$10,509	\$6,918	\$0	\$12,516	\$29,942	\$1,318,900	2%
June-1999	16	14	\$151,037	\$89,000	\$7,535	\$105,166	\$352,737	\$1,870,844	19%
June-2000	22	18	\$110,853	\$69,653	\$4,935	\$95,205	\$280,647	\$2,495,784	11%
June-2001	34	20	\$63,266	\$39,459	\$549	\$77,636	\$180,910	\$3,948,322	5%
June-2002	45	13	\$29,506	\$18,814	\$0	\$44,174	\$92,493	\$5,024,413	2%
May-2003	55	7	\$9,914	\$6,795	\$0	\$20,624	\$37,332	\$6,028,187	1%
May-2004	57	50	\$509,699	\$308,143	\$25,480	\$361,724	\$1,205,046	\$6,243,728	19%
February-2005	58	9	\$11,468	\$8,825	\$0	\$25,877	\$46,169	\$6,352,558	1%
March-2006	62	23	\$49,311	\$34,031	\$0	\$76,126	\$159,468	\$6,790,484	2%
August-2007	71	65	\$895,853	\$528,110	\$64,601	\$610,111	\$2,098,675	\$7,845,846	27%
June-2008	72	68	\$1,286,888	\$742,212	\$127,733	\$818,008	\$2,974,840	\$7,971,390	37%
April/ May-2009	73	51	\$268,570	\$167,736	\$8,246	\$264,851	\$709,403	\$8,141,177	9%
TOTAL			\$3,439,213	\$2,045,529	\$239,302	\$2,551,820	\$8,275,864	\$8,141,177	102%

1 Only buildings that were acquired prior to the event were included in the analysis.
2 Project investment costs for each event only include the project costs for the buildings that were included in the analysis for that event.

Table 5.3

RETURN ON MITIGATION INVESTMENT & LOSS ESTIMATION RESULTS FOR BUILDINGS IN JEFFERSON COUNTY									
ANALYSIS INFORMATION			RESULTS BY LOSS CATEGORY				TOTAL LOSSES AVOIDED	PROJECT INVESTMENT ²	CURRENT ROI
EVENT DATE	NUMBER OF BUILDINGS INCLUDED IN ANALYSIS ¹	NUMBER OF BUILDINGS WITH LOSSES AVOIDED	BUILDING DAMAGE	CONTENTS DAMAGE	DISPLACEMENT COSTS	DISRUPTION COSTS			
April-1993	1	1	\$14,367	\$8,269	\$1,190	\$11,749	\$35,574	\$162,919	22%
June-1996	5	4	\$8,372	\$7,227	\$-	\$13,538	\$29,137	\$584,328	5%
April-1999	10	1	\$476	\$457	\$-	\$2,564	\$3,497	\$1,087,395	0.3%
June-2000	12	8	\$21,885	\$18,435	\$-	\$29,501	\$69,821	\$1,345,334	5%
June-2004	15	13	\$92,162	\$59,103	\$2,151	\$84,422	\$237,839	\$1,676,168	14%
April-2007	17	12	\$57,344	\$38,029	\$3,488	\$57,952	\$156,813	\$1,903,128	8%
June-2008	18	18	\$680,052	\$340,856	\$111,508	\$344,988	\$1,477,403	\$2,191,601	67%
March-2009	18	16	\$136,167	\$84,116	\$8,485	\$106,874	\$335,643	\$2,191,601	15%
TOTAL			\$1,010,826	\$556,492	\$126,822	\$651,586	\$2,345,726	\$2,191,601	107%

1 Only buildings that were acquired prior to the event were included in the analysis.
2 Project investment costs for each event only include the project costs for the buildings that were included in the analysis for that event.

Table 5.4

RETURN ON MITIGATION INVESTMENT & LOSS ESTIMATION RESULTS FOR BUILDINGS IN CRAWFORD COUNTY									
ANALYSIS INFORMATION			RESULTS BY LOSS CATEGORY				TOTAL LOSSES AVOIDED	PROJECT INVESTMENT ²	CURRENT ROI
EVENT DATE	NUMBER OF BUILDINGS INCLUDED IN ANALYSIS ¹	NUMBER OF BUILDINGS WITH LOSSES AVOIDED	BUILDING DAMAGE	CONTENTS DAMAGE	DISPLACEMENT COSTS	LOSS OF FUNCTION COSTS			
August-2007	1	1	\$313,198	\$239,331	\$0	\$1,282,521	\$1,835,050	\$663,780	276%
June-2008	1	1	\$345,427	\$265,575	\$0	\$1,483,397	\$2,094,399	\$663,780	316%
TOTAL			\$658,624	\$504,906	\$0	\$2,765,918	\$3,929,449	\$663,780	592%

1 Only buildings that were acquired prior to the event were included in the analysis.
2 Project investment costs for each event only include the project costs for the buildings that were included in the analysis for that event.

Section Six:

CONSIDERATIONS AND RECOMMENDED PRACTICES

This study yielded findings of potential value to future loss avoidance studies. This section is a summary of the special considerations and recommended practices that have resulted from the study. The information is divided into data collection and availability and analysis methodology.

6.1 DATA COLLECTION AND AVAILABILITY

Backwater effects were considered for both Kenosha and Jefferson counties. The Fox River in Kenosha County flows into Grass Lake in Lake County, Illinois, approximately 9 miles downstream of the buildings in Silver Lake. Flow from Grass Lake continues to Nippersink and Fox lakes, then to Pistakee Lake before continuing farther downstream as Fox River. The Rock River in Jefferson County flows directly into Lake Koshkonong. Because of the backwater effects indicated on the FIS, stream gage flows and the normal method could not be used directly for the analysis of the Fox River. The downstream boundary for the Fox River model was calculated using a peak stage on Grass Lake and extrapolating upstream with a constant slope to the most downstream modeled cross section. Buildings along Rock River were completely within the backwater effect due to Lake Koshkonong, according to the FIS and the USGS HWM study for the June 2008 event (Fitzpatrick et al., 2008). Therefore, Lake Koshkonong stages were compared directly to FFEs for the Flood Inundation Analysis.

6.2 ANALYSIS METHODOLOGY

As discussed in Section 4.1 (Storm Event Analysis), the Hydraulic Analysis and subsequent Flood Inundation Analysis indicated that multiple storm events occurring only weeks apart could potentially have caused damages. Because the loss avoidance calculations are based on the assumption that sufficient time elapses between storm events to allow for repairs to be completed, it was necessary to limit the storm event analysis to a single storm within the selected time interval. For this analysis, a time interval of at least 180 days between storms, or approximately 6 months, was chosen to allow for the hypothetical repairs to be completed.

For future studies, this assumption could be modified to include a time interval that includes a consideration of the actual repair times for the area or uses a curve of theoretical repair times based on the flooding depth sustained.

Appendix A:

*Loss Avoidance Study: Wisconsin, Property Acquisition and Structure Demolition
Loss Calculation Table*

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Table A.1 FEMA BCA Version 4 Depth-Damage Functions.....A-3

Table A.1

FEMA BCA VERSION 4 DEPTH-DAMAGE FUNCTIONS																									
DAMAGE CURVE	SOURCE	TYPE	-3 FT	-2 FT	-1 FT	0 FT	1 FT	2 FT	3 FT	4 FT	5 FT	6 FT	7 FT	8 FT	9 FT	10 FT	11 FT	12 FT	13 FT	14 FT	15 FT	16 FT			
STRUCTURES	1	USACE Generic (BCA Default)	1 story no basement	0.0	0.0	2.5	13.4	23.3	32.1	40.1	47.1	53.2	58.6	63.2	67.2	70.5	73.5	75.4	77.2	78.5	79.5	80.2	80.7		
	2	USACE Generic (BCA Default)	1 story with basement	0.0	13.8	19.4	25.5	32.0	38.7	45.5	52.2	58.6	64.5	69.8	74.2	77.7	80.1	81.1	81.1	81.1	81.1	81.1	81.1	81.1	
	3	USACE Generic (BCA Default)	2 story no basement	0.0	0.0	3.0	9.3	15.2	20.9	26.3	31.4	36.2	40.7	44.9	48.8	52.4	55.7	58.7	61.4	63.8	65.9	67.7	69.2		
	4	USACE Generic (BCA Default)	2 story with basement	0.0	10.2	13.9	17.9	22.3	27.0	31.9	36.9	41.9	46.9	51.8	56.4	60.8	64.8	68.4	71.4	73.7	75.4	76.4	76.4	76.4	
	5	USACE Generic (BCA Default)	Split no basement	0.0	0.0	6.4	7.2	9.4	12.9	17.4	22.8	28.9	35.5	42.3	49.2	56.1	62.6	68.6	73.9	78.4	81.7	83.8	84.4	84.4	
	6	USACE Generic (BCA Default)	Split with basement	0.0	10.4	14.2	18.5	23.2	28.2	33.4	38.6	43.8	48.8	53.5	57.8	61.6	64.8	67.2	68.8	69.3	69.3	69.3	69.3	69.3	69.3
	7	BCA Default	Light Industrial	0.0	0.0	0.0	0.0	10.4	16.8	20.9	25.9	30.1	33.8	37.0	41.5	44.6	46.7	46.7	46.7	46.7	46.7	46.7	46.7	46.7	46.7
CONTENTS	1	USACE Generic (BCA Default)	1 story no basement	0.0	0.0	2.4	8.1	13.3	17.9	22.0	25.7	28.8	31.5	33.8	35.7	37.2	38.4	39.2	39.7	40.0	40.0	40.0	40.0	40.0	
	2	USACE Generic (BCA Default)	1 story with basement	0.0	10.5	13.2	16.0	18.9	21.8	24.7	27.4	30.0	32.4	34.5	36.3	37.7	38.6	39.1	39.1	39.1	39.1	39.1	39.1	39.1	39.1
	3	USACE Generic (BCA Default)	2 story no basement	0.0	0.0	1.0	5.0	8.7	12.2	15.5	18.5	21.3	23.9	26.3	28.4	30.3	32.0	33.4	34.7	35.6	36.4	36.9	37.2	37.2	
	4	USACE Generic (BCA Default)	2 story with basement	0.0	8.4	10.1	11.9	13.8	15.7	17.7	19.8	22.0	24.3	26.7	29.1	31.7	34.4	37.2	40.0	43.0	46.1	49.3	52.6	52.6	
	5	USACE Generic (BCA Default)	Split no basement	0.0	0.0	2.2	2.9	4.7	7.5	11.1	15.3	20.1	25.2	30.5	35.7	40.9	45.8	50.2	54.1	57.2	59.4	60.5	60.5	60.5	
	6	USACE Generic (BCA Default)	Split with basement	0.0	7.3	9.4	11.6	13.8	16.1	18.2	20.2	22.1	23.6	24.9	25.8	26.3	26.3	26.3	26.3	26.3	26.3	26.3	26.3	26.3	26.3
	7	BCA Default	Light Industrial	0.0	0.0	0.0	0.0	19.0	31.0	42.0	52.0	61.0	72.0	82.0	91.0	94.0	95.0	95.0	95.0	95.0	95.0	95.0	95.0	95.0	95.0
DISPLACEMENT	1	HAZUS/New BCA	Residential	0.0	0.0	0.0	0.0	45.0	90.0	135.0	180.0	225.0	270.0	315.0	360.0	405.0	450.0	495.0	540.0	585.0	630.0	675.0	720.0	720.0	
	2	HAZUS/New BCA	Non-residential	0.0	0.0	0.0	0.0	45.0	90.0	135.0	180.0	225.0	270.0	315.0	360.0	405.0	450.0	450.0	450.0	450.0	450.0	450.0	450.0	450.0	
LOSS OF FUNCTION	1	HAZUS/New BCA	Residential	0.0	0.0	0.0	0.0	45.0	90.0	135.0	180.0	225.0	270.0	315.0	360.0	405.0	450.0	495.0	540.0	585.0	630.0	675.0	720.0	720.0	
	2	HAZUS/New BCA	Non-residential	0.0	0.0	0.0	0.0	45.0	90.0	135.0	180.0	225.0	270.0	315.0	360.0	405.0	450.0	450.0	450.0	450.0	450.0	450.0	450.0	450.0	

Note: All non-residential structures assumed to be engineered structure types
 FEMA Content-to-BRV Ratios
 1. FEMA standard value for contents for Residential is 100% of the Building Replacement Value
 2. FEMA standard value for contents for Medical Office is 13% of the Building Replacement Value
 3. FEMA standard value for contents for Hotel is 15% of the Building Replacement Value
 4. FEMA standard value for contents for Office 1-Story is 12% of the Building Replacement Value

Appendix B:

*Summary of Losses Avoided and ROI Calculations
for Kenosha County*

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Table B.14	Losses Estimation and ROI Calculations for Kenosha, April/May 2009 Event.....	B-56

Figure B.1

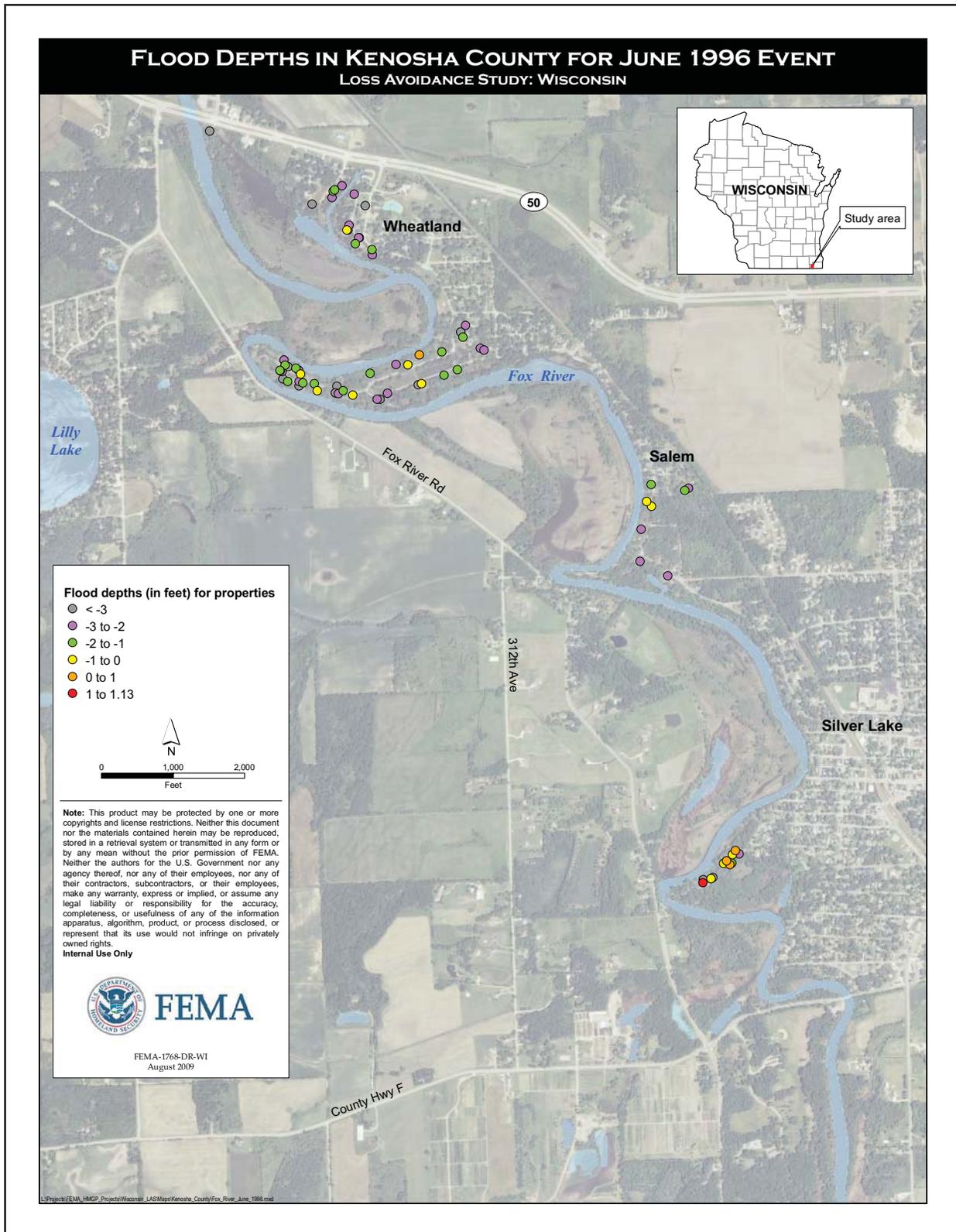


Table B.1 Part 1 of 2

LOSS ESTIMATION AND ROI CALCULATIONS FOR JUNE 1996 EVENT IN KENOSHA COUNTY												
BLDG NO.	ADDRESS	ACQUISITION COMPLETION DATE	FFE (FT, NGVD) ¹	2009 BRV ²	FLOOD DEPTH (FT)	BUILDING DAMAGE	CONTENTS DAMAGE	DISPLACEMENT COSTS	DISRUPTION COSTS	TOTAL LOSSES AVOIDED	PROJECT INVESTMENT ³	RETURN ON INVESTMENT
51	32139 77th Street	Jul-1995	747.0	\$ 134,820	-1.8	\$ 720	\$ 691	\$ -	\$ 2,489	\$ 3,901	\$ 135,493	3%
52	32129 77th Street	Jul-1995	747.9	\$ 95,760	-2.7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 121,895	0%
53	437 S. Riverside Drive	Jul-1995	744.0	\$ 85,680	0.1	\$ 12,577	\$ 7,515	\$ 225	\$ 8,851	\$ 29,167	\$ 121,453	24%
54	601 S. Riverside Drive	Jul-1995	749.0	\$ 107,835	-4.9	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 123,925	0%
55	8106 Shorewood Drive	Jul-1995	746.7	\$ 95,760	-2.2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 127,728	0%
56	31524 76th Street	Sep-1995	745.1	\$ 70,560	0.0	\$ 9,211	\$ 5,588	\$ -	\$ 8,120	\$ 22,919	\$ 116,379	20%
57	31217 77th Street	Feb-1996	747.0	\$ 75,600	-2.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 124,635	0%
58	32041 77th Street	Feb-1996	750.7	\$ 87,360	-5.5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 117,107	0%
60	419 S. Riverside Drive	Oct-1996	745.0	\$ 78,750	-0.9	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 7,841	0%
59	32104 77th Street	Nov-1996	748.0	\$ 176,190	-2.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 185,843	0%
61	32028 77th Street	Apr-1997	747.0	\$ 89,880	-1.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 136,601	0%
62	31628 76th Street	Dec-1998	747.7	\$ 106,680	-2.7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 137,189	0%
63	32029 77th Street	Dec-1998	746.6	\$ 79,800	-1.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 100,017	0%
64	32018 77th Street	Dec-1998	747.5	\$ 82,320	-2.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 116,767	0%
65	31710 77th Street	Jan-1999	746.4	\$ 107,100	-1.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 139,792	0%
66	32143 77th Street	Mar-1999	747.0	\$ 145,530	-1.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 58,179	0%
11	32132 77th Street	Dec-1999	747.0	\$ 84,000	-1.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 90,458	0%
44	31422 76th Street	Dec-1999	746.8	\$ 94,500	-1.7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 117,619	0%
45	32034 77th Street	Dec-1999	745.5	\$ 121,800	-0.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 133,352	0%
12	31823 77th Street	Dec-1999	749.0	\$ 102,900	-4.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 116,432	0%
68	32015 77th Street	Dec-1999	748.5	\$ 121,590	-3.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 136,982	0%
67	31917 77th Street	Jan-2000	746.1	\$ 68,355	-1.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 30,097	0%
8	31805 71st Street	Jun-2000	748.0	\$ 133,980	-2.5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 203,279	0%
16	31811 71st Street	Jun-2000	746.5	\$ 63,000	-1.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 93,912	0%
17	31519 77th Street	Jun-2000	745.8	\$ 58,800	-0.9	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 105,167	0%
18	6929 319th Avenue	Jun-2000	747.5	\$ 73,500	-2.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 98,058	0%
69	6921 319th Avenue	Jun-2000	748.0	\$ 103,320	-2.5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 108,859	0%
73	441 S. Riverside Drive	Jun-2000	745.0	\$ 105,840	-0.9	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 131,060	0%
10	31638 76th Street	Jul-2000	747.6	\$ 150,570	-2.7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 166,468	0%
14	8153 Shorewood Drive	Jul-2000	746.5	\$ 78,750	-2.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 115,113	0%
70	31214 77th Street	Sep-2000	747.0	\$ 98,280	-2.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 75,177	0%
1	6712 Wheatland Road	Dec-2000	750.5	\$ 64,680	-4.9	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 122,709	0%
71	6905 319th Avenue	Dec-2000	748.0	\$ 138,915	-2.5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 136,356	0%
72	31705 71st Street	Jan-2001	747.0	\$ 78,960	-1.5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 96,381	0%
29	31822 71st Street	Sep-2001	748.0	\$ 139,125	-2.5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 146,597	0%
2	31809 77th Street	Oct-2001	748.0	\$ 81,480	-3.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 34,954	0%
4	31733 77th Street	Oct-2001	746.0	\$ 98,070	-1.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 35,951	0%
5	31826 77th Street	Oct-2001	748.5	\$ 97,860	-3.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 99,666	0%
7	31911 77th Street	Oct-2001	746.5	\$ 75,810	-1.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 83,304	0%
9	32114 77th Street	Oct-2001	749.5	\$ 75,600	-4.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 103,368	0%
28	31711 71st Street	Oct-2001	748.0	\$ 60,060	-2.5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 113,134	0%

Table B.1 Part 2 of 2

LOSS ESTIMATION AND ROI CALCULATIONS FOR JUNE 1996 EVENT IN KENOSHA COUNTY																	
BLDG NO.	ADDRESS	ACQUISITION COMPLETION DATE	FFE (FT, NGVD) ¹	2009 BRV ²	FLOOD DEPTH (FT)	BUILDING DAMAGE	CONTENTS DAMAGE	DISPLACEMENT COSTS	DISRUPTION COSTS	TOTAL LOSSES AVOIDED	PROJECT INVESTMENT ³	RETURN ON INVESTMENT					
23	6940 317th Avenue	Feb-2002	750.0	\$ 58,800	-4.5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 130,769	0%					
15	8200 No. Riverside Drive	Sep-2002	746.8	\$ 63,000	-2.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 130,863	0%					
3	31417 77th Street	Oct-2002	746.0	\$ 104,160	-1.2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 114,648	0%					
13	32005 77th Street	Oct-2002	746.5	\$ 75,600	-1.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 119,677	0%					
19	8032 Shorewood Drive	Oct-2002	745.0	\$ 95,760	-0.5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 133,702	0%					
24	31701 77th Street	Oct-2002	748.7	\$ 79,800	-3.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 82,325	0%					
25	6912 318th Avenue	Oct-2002	748.0	\$ 58,800	-2.5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 87,774	0%					
20	31533 77th Street	Oct-2002	748.5	\$ 56,070	-3.6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 42,029	0%					
32	31709 77th Street	Jan-2003	747.6	\$ 67,200	-2.7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 80,759	0%					
34	7956 Shorewood Drive	Jan-2003	746.0	\$ 63,525	-1.5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 111,428	0%					
22	445 So. Riverside Drive	Feb-2003	746.2	\$ 98,280	-2.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 100,568	0%					
30	31715 71st Street	May-2003	748.1	\$ 58,800	-2.6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 86,360	0%					
31	501 So. Riverside Drive	Oct-2003	745.4	\$ 168,000	-1.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 129,181	0%					
21	607 So. Riverside Drive	Sep-2004	748.3	\$ 74,970	-4.2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 108,830	0%					
47	31627 71st Street	Aug-2005	747.0	\$ 104,160	-1.5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 140,789	0%					
48	31315 77th Street	Aug-2005	746.0	\$ 95,760	-1.2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 153,438	0%					
38	6913 319th Avenue	Dec-2005	747.0	\$ 71,400	-1.5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,348	0%					
49	31602 76th Street	Dec-2005	746.1	\$ 104,160	-1.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 142,351	0%					
26	30522 80th Street	Jun-2006	746.0	\$ 61,740	-1.5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 110,106	0%					
35	7536 313th Avenue	Jun-2006	748.0	\$ 74,130	-2.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 129,190	0%					
36	511 S. Riverside Drive	Jun-2006	743.7	\$ 51,660	0.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 59,472	0%					
37	606 Wisconsin Avenue	Jun-2006	743.0	\$ 37,800	1.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 114,398	0%					
40	30510 80th Street	Jun-2006	747.5	\$ 65,100	-3.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 119,470	0%					
39	7600 313th Street	Aug-2006	747.0	\$ 64,680	-1.9	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 96,803	0%					
33	31901 71st Street	Jan-2007	750.8	\$ 58,800	-5.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 121,564	0%					
41	7962 Shorewood Drive	Mar-2007	745.0	\$ 65,520	-0.5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 140,801	0%					
42	31613 71st Street	Mar-2007	748.0	\$ 107,730	-2.5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 163,558	0%					
50	415 S. Riverside Drive	Feb-2008	744.0	\$ 63,525	0.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 125,544	0%					
43	7522 313th Avenue	Jun-2008	749.0	\$ 130,620	-3.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 169,787	0%					
TOTAL					\$	22,508	\$	13,795	\$	225	\$	19,460	\$	55,986	\$	988,615	6%

¹ Vertical datum information was not provided with the first floor elevation (FFE) information supplied by the county. Elevations were assumed to be relative to the National Geodetic Vertical Datum of 1929 (NGVD).

² Building replacement value (BRV) based on unit cost per square foot of living space for the county.

³ Project investment costs for each event only include the project costs for the buildings that were included in the analysis for that event.

Not included in the calculations - the acquisition was not completed before the event.

It was assumed there would not be damages because the building had burned down prior to the acquisition.

Figure B.2

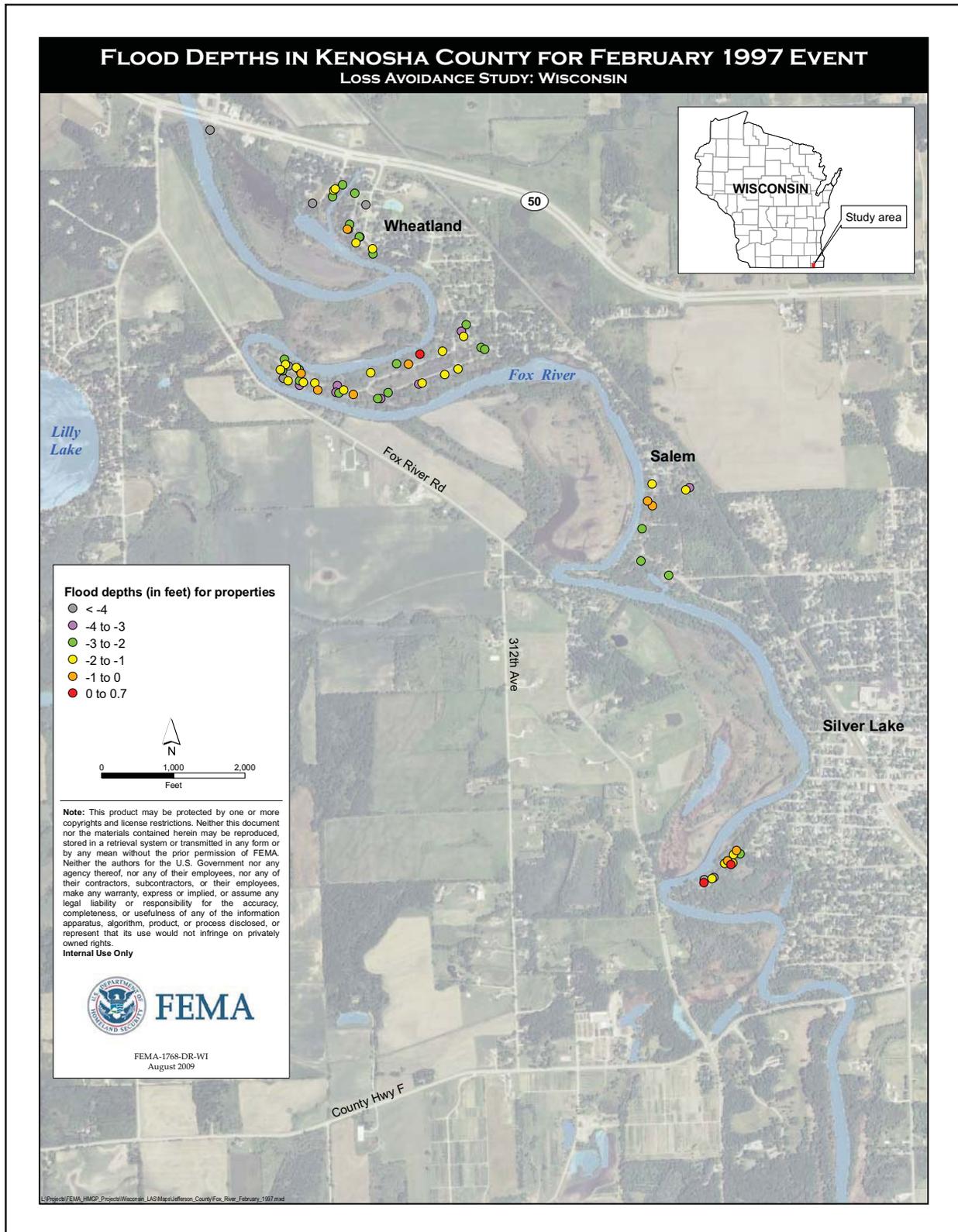


Table B.2 Part 1 of 2

LOSS ESTIMATION AND ROI CALCULATIONS FOR FEBRUARY 1997 EVENT IN KENOSHA COUNTY												
BLDG NO.	ADDRESS	ACQUISITION COMPLETION DATE	FFE (FT, NGVD) ¹	2009 BRV ²	FLOOD DEPTH (FT)	BUILDING DAMAGE	CONTENTS DAMAGE	DISPLACEMENT COSTS	DISRUPTION COSTS	TOTAL LOSSES AVOIDED	PROJECT INVESTMENT ³	RETURN ON INVESTMENT
51	32139 77th Street	Jul-1995	747.0	\$ 134,820	-1.8	\$ 645	\$ 619	\$ -	\$ 2,464	\$ 3,728	\$ 135,493	3%
52	32129 77th Street	Jul-1995	747.9	\$ 95,760	-2.7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 121,895	0%
53	437 S. Riverside Drive	Jul-1995	744.0	\$ 85,680	-0.3	\$ 8,759	\$ 5,517	\$ -	\$ 6,847	\$ 21,123	\$ 121,453	17%
54	601 S. Riverside Drive	Jul-1995	749.0	\$ 107,835	-5.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 123,925	0%
55	8106 Shorewood Drive	Jul-1995	746.7	\$ 95,760	-2.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 127,728	0%
56	31524 76th Street	Sep-1995	745.1	\$ 70,560	-0.1	\$ 8,736	\$ 5,339	\$ -	\$ 7,817	\$ 21,893	\$ 116,379	19%
57	31217 77th Street	Feb-1996	747.0	\$ 75,600	-2.2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 124,635	0%
58	32041 77th Street	Feb-1996	750.7	\$ 87,360	-5.6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 117,107	0%
60	419 S. Riverside Drive	Oct-1996	745.0	\$ 78,750	-1.3	\$ 1,691	\$ 564	\$ -	\$ 3,215	\$ 5,470	\$ 7,841	70%
59	32104 77th Street	Nov-1996	748.0	\$ 176,190	-2.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 185,843	0%
61	32028 77th Street	Apr-1997	747.0	\$ 89,880	-1.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 136,601	0%
62	31628 76th Street	Dec-1998	747.7	\$ 106,680	-2.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 137,189	0%
63	32029 77th Street	Dec-1998	746.6	\$ 79,800	-1.5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 100,017	0%
64	32018 77th Street	Dec-1998	747.5	\$ 82,320	-2.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 116,767	0%
65	31710 77th Street	Jan-1999	746.4	\$ 107,100	-1.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 139,792	0%
66	32143 77th Street	Mar-1999	747.0	\$ 145,530	-1.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 58,179	0%
11	32132 77th Street	Dec-1999	747.0	\$ 84,000	-1.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 90,458	0%
44	31422 76th Street	Dec-1999	746.8	\$ 94,500	-1.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 117,619	0%
45	32034 77th Street	Dec-1999	745.5	\$ 121,800	-0.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 133,352	0%
12	31823 77th Street	Dec-1999	749.0	\$ 102,900	-4.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 116,432	0%
68	32015 77th Street	Dec-1999	748.5	\$ 121,590	-3.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 136,982	0%
67	31917 77th Street	Jan-2000	746.1	\$ 68,355	-1.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 30,097	0%
8	31805 71st Street	Jun-2000	748.0	\$ 133,980	-2.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 203,279	0%
16	31811 71st Street	Jun-2000	746.5	\$ 63,000	-0.9	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 93,912	0%
17	31519 77th Street	Jun-2000	745.8	\$ 58,800	-1.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 105,167	0%
18	6929 319th Avenue	Jun-2000	747.5	\$ 73,500	-1.9	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 98,058	0%
69	6921 319th Avenue	Jun-2000	748.0	\$ 103,320	-2.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 108,859	0%
73	441 S. Riverside Drive	Jun-2000	745.0	\$ 105,840	-1.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 131,060	0%
10	31638 76th Street	Jul-2000	747.6	\$ 150,570	-2.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 166,468	0%
14	8153 Shorewood Drive	Jul-2000	746.5	\$ 78,750	-2.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 115,113	0%
70	31214 77th Street	Sep-2000	747.0	\$ 98,280	-2.2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 75,177	0%
1	6712 Wheatland Road	Dec-2000	750.5	\$ 64,680	-4.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 122,709	0%
71	6905 319th Avenue	Dec-2000	748.0	\$ 138,915	-2.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 136,356	0%
72	31705 71st Street	Jan-2001	747.0	\$ 78,960	-1.5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 96,381	0%
29	31822 71st Street	Sep-2001	748.0	\$ 139,125	-2.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 146,597	0%
2	31809 77th Street	Oct-2001	748.0	\$ 81,480	-3.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 34,954	0%
4	31733 77th Street	Oct-2001	746.0	\$ 98,070	-1.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 35,951	0%
5	31826 77th Street	Oct-2001	748.5	\$ 97,860	-3.5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 99,666	0%
7	31911 77th Street	Oct-2001	746.5	\$ 75,810	-1.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 83,304	0%
9	32114 77th Street	Oct-2001	749.5	\$ 75,600	-4.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 103,368	0%
28	31711 71st Street	Oct-2001	748.0	\$ 60,060	-2.5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 113,134	0%

Table B.2 Part 2 of 2

LOSS ESTIMATION AND ROI CALCULATIONS FOR FEBRUARY 1997 EVENT IN KENOSHA COUNTY												
BLDG NO.	ADDRESS	ACQUISITION COMPLETION DATE	FFE (FT, NGVD) ¹	2009 BRV ²	FLOOD DEPTH (FT)	BUILDING DAMAGE	CONTENTS DAMAGE	DISPLACEMENT COSTS	DISRUPTION COSTS	TOTAL LOSSES AVOIDED	PROJECT INVESTMENT ³	RETURN ON INVESTMENT
23	6940 317th Avenue	Feb-2002	750.0	\$ 58,800	-4.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 130,769	0%
15	8200 No. Riverside Drive	Sep-2002	746.8	\$ 63,000	-2.7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 130,863	0%
3	31417 77th Street	Oct-2002	746.0	\$ 104,160	-1.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 114,648	0%
13	32005 77th Street	Oct-2002	746.5	\$ 75,600	-1.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 119,677	0%
19	8032 Shorewood Drive	Oct-2002	745.0	\$ 95,760	-0.7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 133,702	0%
24	31701 77th Street	Oct-2002	748.7	\$ 79,800	-3.9	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 82,325	0%
25	6912 318th Avenue	Oct-2002	748.0	\$ 58,800	-2.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 87,774	0%
20	31533 77th Street	Oct-2002	748.5	\$ 56,070	-3.7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 42,029	0%
32	31709 77th Street	Jan-2003	747.6	\$ 67,200	-2.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 80,759	0%
34	7956 Shorewood Drive	Jan-2003	746.0	\$ 63,525	-1.7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 111,428	0%
22	445 So. Riverside Drive	Feb-2003	746.2	\$ 98,280	-2.5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 100,568	0%
30	31715 71st Street	May-2003	748.1	\$ 58,800	-2.6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 86,360	0%
31	501 So. Riverside Drive	Oct-2003	745.4	\$ 168,000	-1.7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 129,181	0%
21	607 So. Riverside Drive	Sep-2004	748.3	\$ 74,970	-4.6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 108,830	0%
47	31627 71st Street	Aug-2005	747.0	\$ 104,160	-1.5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 140,789	0%
48	31315 77th Street	Aug-2005	746.0	\$ 95,760	-1.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 153,438	0%
38	6913 319th Avenue	Dec-2005	747.0	\$ 71,400	-1.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,348	0%
49	31602 76th Street	Dec-2005	746.1	\$ 104,160	-1.2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 142,351	0%
26	30522 80th Street	Jun-2006	746.0	\$ 61,740	-1.7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 110,106	0%
35	7536 313th Avenue	Jun-2006	748.0	\$ 74,130	-2.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 129,190	0%
36	511 S. Riverside Drive	Jun-2006	743.7	\$ 51,660	0.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 59,472	0%
37	606 Wisconsin Avenue	Jun-2006	743.0	\$ 37,800	0.7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 114,398	0%
40	30510 80th Street	Jun-2006	747.5	\$ 65,100	-3.2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 119,470	0%
39	7600 313th Street	Aug-2006	747.0	\$ 64,680	-1.9	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 96,803	0%
33	31901 71st Street	Jan-2007	750.8	\$ 58,800	-5.2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 121,564	0%
41	7962 Shorewood Drive	Mar-2007	745.0	\$ 65,520	-0.7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 140,801	0%
42	31613 71st Street	Mar-2007	748.0	\$ 107,730	-2.5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 163,558	0%
50	415 S. Riverside Drive	Feb-2008	744.0	\$ 63,525	-0.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 125,544	0%
43	7522 313th Avenue	Jun-2008	749.0	\$ 130,620	-3.9	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 169,787	0%
TOTAL					\$ 19,832	\$ 12,039	\$ -	\$ 20,343	\$ 52,214	\$ 1,182,299	4%	

¹ Vertical datum information was not provided with the first floor elevation (FFE) information supplied by the county. Elevations were assumed to be relative to the National Geodetic Vertical Datum of 1929 (NGVD).

² Building replacement value (BRV) based on unit cost per square foot of living space for the county.

³ Project investment costs for each event only include the project costs for the buildings that were included in the analysis for that event.

Not included in the calculations - the acquisition was not completed before the event.

It was assumed there would not be damages because the building had burned down prior to the acquisition.

Figure B.3

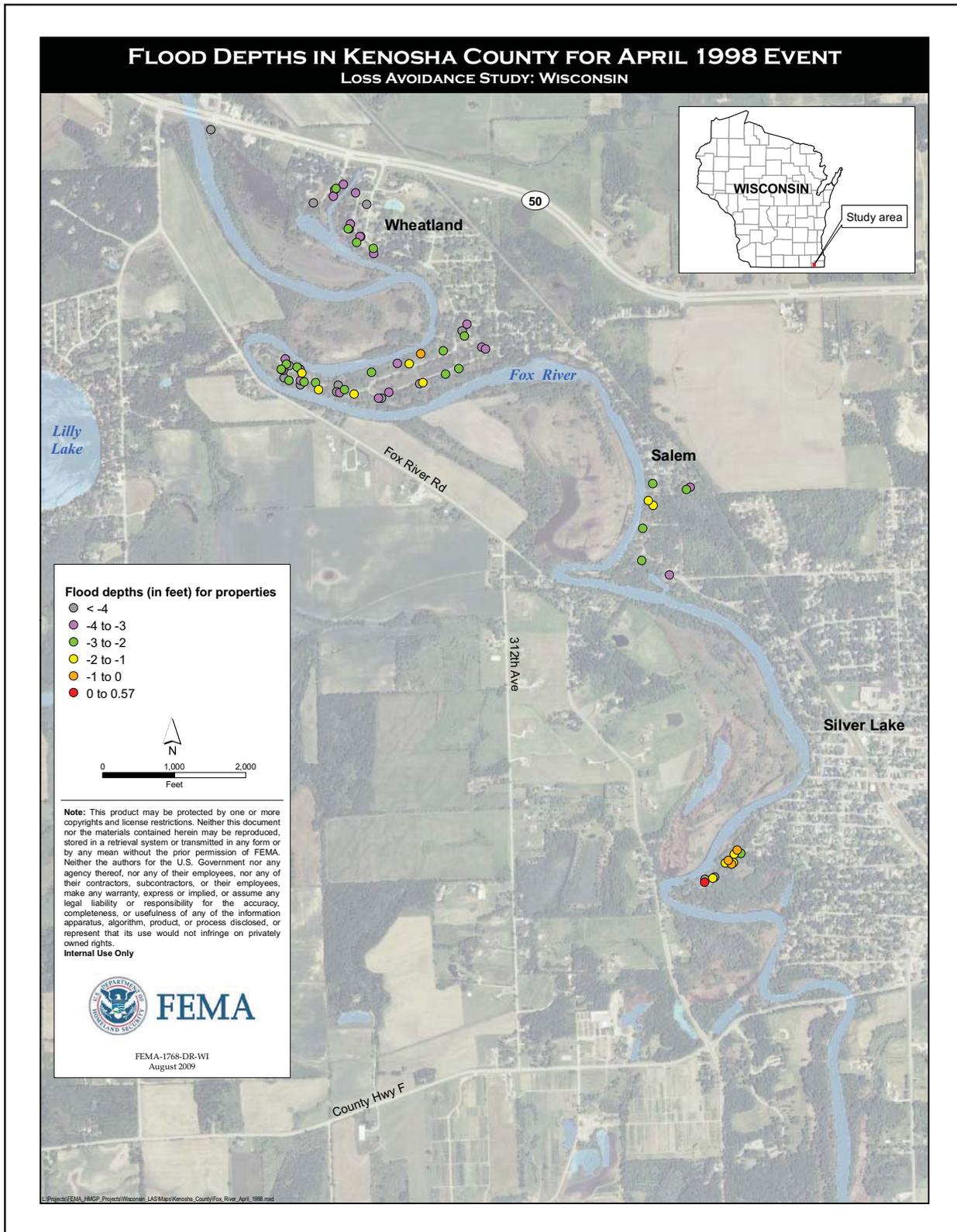


Table B.3 Part 1 of 2

Loss Estimation and ROI Calculations for April 1998 Event in Kenosha County												
BLDG NO.	ADDRESS	ACQUISITION COMPLETION DATE	FFE (FT, NGVD) ¹	2009 BRV ²	FLOOD DEPTH (FT)	BUILDING DAMAGE	CONTENTS DAMAGE	DISPLACEMENT COSTS	DISRUPTION COSTS	TOTAL LOSSES AVOIDED	PROJECT INVESTMENT ³	RETURN ON INVESTMENT
51	32139 77th Street	Jul-1995	747.0	\$ 134,820	-2.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 135,493	0%
52	32129 77th Street	Jul-1995	747.9	\$ 95,760	-3.7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 121,895	0%
53	437 S. Riverside Drive	Jul-1995	744.0	\$ 85,680	-0.4	\$ 7,461	\$ 4,838	\$ -	\$ 6,165	\$ 18,465	\$ 121,453	15%
54	601 S. Riverside Drive	Jul-1995	749.0	\$ 107,835	-5.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 123,925	0%
55	8106 Shorewood Drive	Jul-1995	746.7	\$ 95,760	-3.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 127,728	0%
56	31524 76th Street	Sep-1995	745.1	\$ 70,560	-1.0	\$ 1,698	\$ 1,630	\$ -	\$ 3,331	\$ 6,659	\$ 116,379	6%
57	31217 77th Street	Feb-1996	747.0	\$ 75,600	-3.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 124,635	0%
58	32041 77th Street	Feb-1996	750.7	\$ 87,360	-6.6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 117,107	0%
60	419 S. Riverside Drive	Oct-1996	745.0	\$ 78,750	-1.4	\$ 1,349	\$ 450	\$ -	\$ 3,019	\$ 4,819	\$ 7,841	61%
59	32104 77th Street	Nov-1996	748.0	\$ 176,190	-3.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 185,843	0%
61	32028 77th Street	Apr-1997	747.0	\$ 89,880	-2.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 136,601	0%
62	31628 76th Street	Dec-1998	747.7	\$ 106,680	-3.7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 137,189	0%
63	32029 77th Street	Dec-1998	746.6	\$ 79,800	-2.5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 100,017	0%
64	32018 77th Street	Dec-1998	747.5	\$ 82,320	-3.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 116,767	0%
65	31710 77th Street	Jan-1999	746.4	\$ 107,100	-2.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 139,792	0%
66	32143 77th Street	Mar-1999	747.0	\$ 145,530	-2.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 58,179	0%
11	32132 77th Street	Dec-1999	747.0	\$ 84,000	-2.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 90,458	0%
44	31422 76th Street	Dec-1999	746.8	\$ 94,500	-2.7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 117,619	0%
45	32034 77th Street	Dec-1999	745.5	\$ 121,800	-1.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 133,352	0%
12	31823 77th Street	Dec-1999	749.0	\$ 102,900	-5.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 116,432	0%
68	32015 77th Street	Dec-1999	748.5	\$ 121,590	-4.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 136,982	0%
67	31917 77th Street	Jan-2000	746.1	\$ 68,355	-2.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 30,097	0%
8	31805 71st Street	Jun-2000	748.0	\$ 133,980	-3.6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 203,279	0%
16	31811 71st Street	Jun-2000	746.5	\$ 63,000	-2.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 93,912	0%
17	31519 77th Street	Jun-2000	745.8	\$ 58,800	-1.9	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 105,167	0%
18	6929 319th Avenue	Jun-2000	747.5	\$ 73,500	-3.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 98,058	0%
69	6921 319th Avenue	Jun-2000	748.0	\$ 103,320	-3.6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 108,859	0%
73	441 S. Riverside Drive	Jun-2000	745.0	\$ 105,840	-1.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 131,060	0%
10	31638 76th Street	Jul-2000	747.6	\$ 150,570	-3.6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 166,468	0%
14	8153 Shorewood Drive	Jul-2000	746.5	\$ 78,750	-2.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 115,113	0%
70	31214 77th Street	Sep-2000	747.0	\$ 98,280	-3.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 75,177	0%
1	6712 Wheatland Road	Dec-2000	750.5	\$ 64,680	-6.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 122,709	0%
71	6905 319th Avenue	Dec-2000	748.0	\$ 138,915	-3.6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 136,356	0%
72	31705 71st Street	Jan-2001	747.0	\$ 78,960	-2.6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 96,381	0%
29	31822 71st Street	Sep-2001	748.0	\$ 139,125	-3.6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 146,597	0%
2	31809 77th Street	Oct-2001	748.0	\$ 81,480	-4.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 34,954	0%
4	31733 77th Street	Oct-2001	746.0	\$ 98,070	-2.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 35,951	0%
5	31826 77th Street	Oct-2001	748.5	\$ 97,860	-4.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 99,666	0%
7	31911 77th Street	Oct-2001	746.5	\$ 75,810	-2.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 83,304	0%
9	32114 77th Street	Oct-2001	749.5	\$ 75,600	-5.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 103,368	0%
28	31711 71st Street	Oct-2001	748.0	\$ 60,060	-3.6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 113,134	0%

Table B.3 Part 2 of 2

LOSS ESTIMATION AND ROI CALCULATIONS FOR APRIL 1998 EVENT IN KENOSHA COUNTY												
BLDG NO.	ADDRESS	ACQUISITION COMPLETION DATE	FFE (FT, NGVD) ¹	2009 BRV ²	FLOOD DEPTH (FT)	BUILDING DAMAGE	CONTENTS DAMAGE	DISPLACEMENT COSTS	DISRUPTION COSTS	TOTAL LOSSES AVOIDED	PROJECT INVESTMENT ³	RETURN ON INVESTMENT
23	6940 317th Avenue	Feb-2002	750.0	\$ 58,800	-5.6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 130,769	0%
15	8200 No. Riverside Drive	Sep-2002	746.8	\$ 63,000	-3.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 130,863	0%
3	31417 77th Street	Oct-2002	746.0	\$ 104,160	-2.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 114,648	0%
13	32005 77th Street	Oct-2002	746.5	\$ 75,600	-2.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 119,677	0%
19	8032 Shorewood Drive	Oct-2002	745.0	\$ 95,760	-1.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 133,702	0%
24	31701 77th Street	Oct-2002	748.7	\$ 79,800	-4.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 82,325	0%
25	6912 318th Avenue	Oct-2002	748.0	\$ 58,800	-3.6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 87,774	0%
20	31533 77th Street	Oct-2002	748.5	\$ 56,070	-4.6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 42,029	0%
32	31709 77th Street	Jan-2003	747.6	\$ 67,200	-3.7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 80,759	0%
34	7956 Shorewood Drive	Jan-2003	746.0	\$ 63,525	-2.2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 111,428	0%
22	445 So. Riverside Drive	Feb-2003	746.2	\$ 98,280	-2.6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 100,568	0%
30	31715 71st Street	May-2003	748.1	\$ 58,800	-3.7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 86,360	0%
31	501 So. Riverside Drive	Oct-2003	745.4	\$ 168,000	-1.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 129,181	0%
21	607 So. Riverside Drive	Sep-2004	748.3	\$ 74,970	-4.7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 108,830	0%
47	31627 71st Street	Aug-2005	747.0	\$ 104,160	-2.7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 140,789	0%
48	31315 77th Street	Aug-2005	746.0	\$ 95,760	-2.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 153,438	0%
38	6913 319th Avenue	Dec-2005	747.0	\$ 71,400	-2.6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,348	0%
49	31602 76th Street	Dec-2005	746.1	\$ 104,160	-2.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 142,351	0%
26	30522 80th Street	Jun-2006	746.0	\$ 61,740	-2.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 110,106	0%
35	7536 313th Avenue	Jun-2006	748.0	\$ 74,130	-3.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 129,190	0%
36	511 S. Riverside Drive	Jun-2006	743.7	\$ 51,660	-0.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 59,472	0%
37	606 Wisconsin Avenue	Jun-2006	743.0	\$ 37,800	0.6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 114,398	0%
40	30510 80th Street	Jun-2006	747.5	\$ 65,100	-3.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 119,470	0%
39	7600 313th Street	Aug-2006	747.0	\$ 64,680	-2.9	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 96,803	0%
33	31901 71st Street	Jan-2007	750.8	\$ 58,800	-6.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 121,564	0%
41	7962 Shorewood Drive	Mar-2007	745.0	\$ 65,520	-1.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 140,801	0%
42	31613 71st Street	Mar-2007	748.0	\$ 107,730	-3.7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 163,558	0%
50	415 S. Riverside Drive	Feb-2008	744.0	\$ 63,525	-0.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 125,544	0%
43	7522 313th Avenue	Jun-2008	749.0	\$ 130,620	-4.9	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 169,787	0%
					TOTAL	\$ 10,509	\$ 6,918	\$ -	\$ 12,516	\$ 29,942	\$ 1,318,900	2%

¹ Vertical datum information was not provided with the first floor elevation (FFE) information supplied by the county. Elevations were assumed to be relative to the National Geodetic Vertical Datum of 1929 (NGVD).

² Building replacement value (BRV) based on unit cost per square foot of living space for the county.

³ Project investment costs for each event only include the project costs for the buildings that were included in the analysis for that event.

Not included in the calculations - the acquisition was not completed before the event.

It was assumed there would not be damages because the building had burned down prior to the acquisition.

Figure B.4

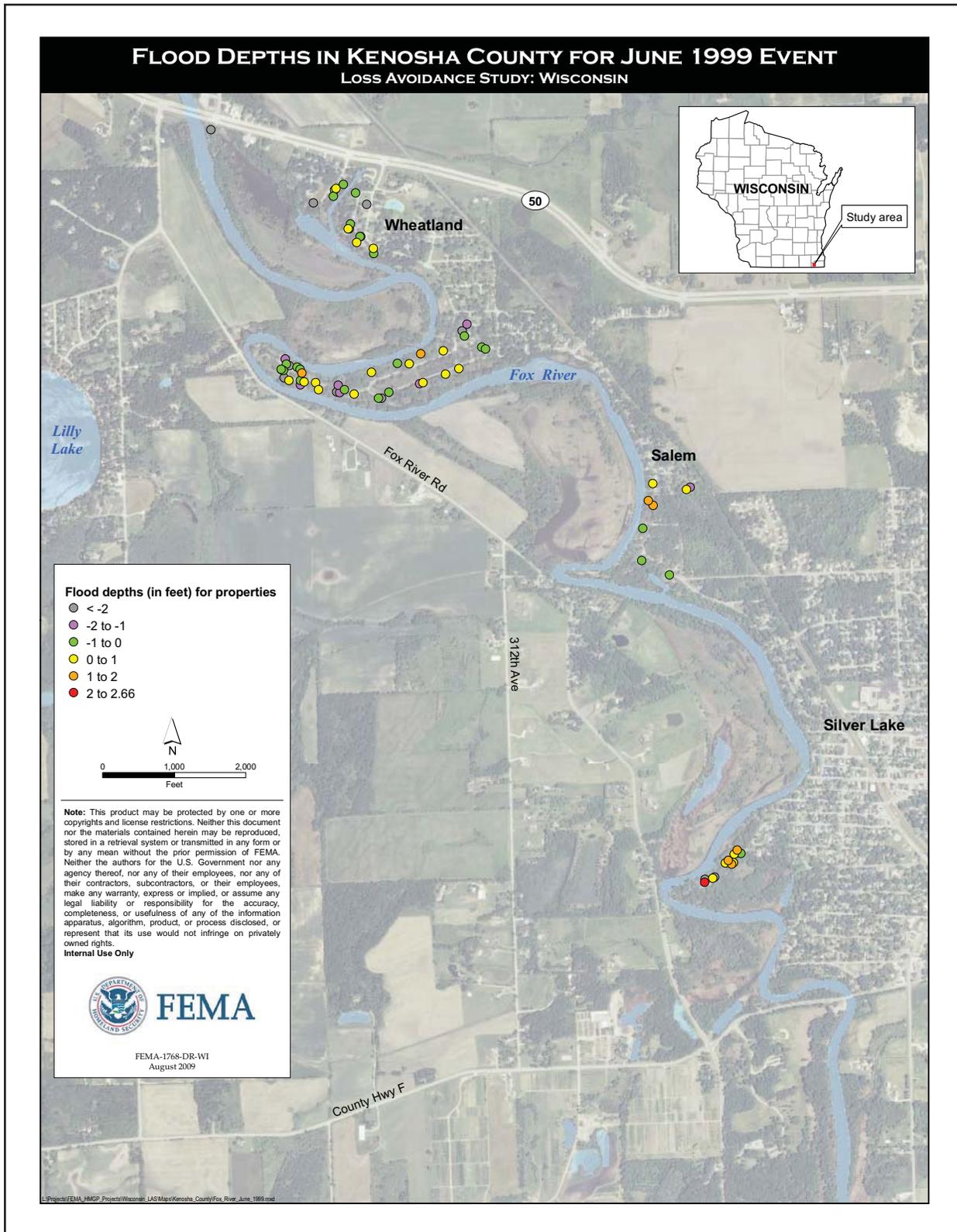


Table B.4 Part 1 of 2

LOSS ESTIMATION AND ROI CALCULATIONS FOR JUNE 1999 EVENT IN KENOSHA COUNTY												
BLDG NO.	ADDRESS	ACQUISITION COMPLETION DATE	FFE (FT, NGVD) ¹	2009 BRV ²	FLOOD DEPTH (FT)	BUILDING DAMAGE	CONTENTS DAMAGE	DISPLACEMENT COSTS	DISRUPTION COSTS	TOTAL LOSSES AVOIDED	PROJECT INVESTMENT ³	RETURN ON INVESTMENT
51	32139 77th Street	Jul-1995	747.0	\$ 134,820	-0.1	\$ 16,394	\$ 10,046	\$ -	\$ 7,718	\$ 34,158	\$ 135,493	25%
52	32129 77th Street	Jul-1995	747.9	\$ 95,760	-1.0	\$ 2,339	\$ 2,246	\$ -	\$ 3,347	\$ 7,932	\$ 121,895	7%
53	437 S. Riverside Drive	Jul-1995	744.0	\$ 85,680	1.7	\$ 25,005	\$ 14,031	\$ 2,901	\$ 15,375	\$ 57,312	\$ 121,453	47%
54	601 S. Riverside Drive	Jul-1995	749.0	\$ 107,835	-3.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 123,925	0%
55	8106 Shorewood Drive	Jul-1995	746.7	\$ 95,760	-0.5	\$ 7,486	\$ 4,961	\$ -	\$ 5,765	\$ 18,211	\$ 127,728	14%
56	31524 76th Street	Sep-1995	745.1	\$ 70,560	1.7	\$ 20,608	\$ 11,563	\$ 2,392	\$ 15,384	\$ 49,947	\$ 116,379	43%
57	31217 77th Street	Feb-1996	747.0	\$ 75,600	-0.3	\$ 7,401	\$ 4,696	\$ -	\$ 6,652	\$ 18,750	\$ 124,635	15%
58	32041 77th Street	Feb-1996	750.7	\$ 87,360	-3.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 117,107	0%
60	419 S. Riverside Drive	Oct-1996	745.0	\$ 78,750	0.7	\$ 10,459	\$ 5,903	\$ 1,078	\$ 8,222	\$ 25,662	\$ 7,841	327%
59	32104 77th Street	Nov-1996	748.0	\$ 176,190	-1.1	\$ 4,790	\$ 1,597	\$ -	\$ 3,471	\$ 9,858	\$ 185,843	5%
61	32028 77th Street	Apr-1997	747.0	\$ 89,880	-0.1	\$ 10,859	\$ 6,661	\$ -	\$ 7,683	\$ 25,202	\$ 136,601	18%
62	31628 76th Street	Dec-1998	747.7	\$ 106,680	-1.0	\$ 3,045	\$ 2,758	\$ -	\$ 3,533	\$ 9,336	\$ 137,189	7%
63	32029 77th Street	Dec-1998	746.6	\$ 79,800	0.2	\$ 12,616	\$ 7,474	\$ 394	\$ 9,359	\$ 29,842	\$ 100,017	30%
64	32018 77th Street	Dec-1998	747.5	\$ 82,320	-0.6	\$ 5,374	\$ 3,710	\$ -	\$ 5,185	\$ 14,268	\$ 116,767	12%
65	31710 77th Street	Jan-1999	746.4	\$ 107,100	0.4	\$ 12,197	\$ 6,758	\$ 769	\$ 7,371	\$ 27,095	\$ 139,792	19%
66	32143 77th Street	Mar-1999	747.0	\$ 145,530	-0.1	\$ 12,465	\$ 6,598	\$ -	\$ 6,101	\$ 25,164	\$ 58,179	43%
11	32132 77th Street	Dec-1999	747.0	\$ 84,000	-0.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 90,458	0%
44	31422 76th Street	Dec-1999	746.8	\$ 94,500	0.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 117,619	0%
45	32034 77th Street	Dec-1999	745.5	\$ 121,800	1.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 133,352	0%
12	31823 77th Street	Dec-1999	749.0	\$ 102,900	-2.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 116,432	0%
68	32015 77th Street	Dec-1999	748.5	\$ 121,590	-1.7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 136,982	0%
67	31917 77th Street	Jan-2000	746.1	\$ 68,355	0.7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 30,097	0%
8	31805 71st Street	Jun-2000	748.0	\$ 133,980	-0.9	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 203,279	0%
16	31811 71st Street	Jun-2000	746.5	\$ 63,000	0.6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 93,912	0%
17	31519 77th Street	Jun-2000	745.8	\$ 58,800	0.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 105,167	0%
18	6929 319th Avenue	Jun-2000	747.5	\$ 73,500	-0.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 98,058	0%
69	6921 319th Avenue	Jun-2000	748.0	\$ 103,320	-0.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 108,859	0%
73	441 S. Riverside Drive	Jun-2000	745.0	\$ 105,840	0.7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 131,060	0%
10	31638 76th Street	Jul-2000	747.6	\$ 150,570	-1.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 166,468	0%
14	8153 Shorewood Drive	Jul-2000	746.5	\$ 78,750	-0.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 115,113	0%
70	31214 77th Street	Sep-2000	747.0	\$ 98,280	-0.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 75,177	0%
1	6712 Wheatland Road	Dec-2000	750.5	\$ 64,680	-3.2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 122,709	0%
71	6905 319th Avenue	Dec-2000	748.0	\$ 138,915	-0.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 136,356	0%
72	31705 71st Street	Jan-2001	747.0	\$ 78,960	0.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 96,381	0%
29	31822 71st Street	Sep-2001	748.0	\$ 139,125	-0.9	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 146,597	0%
2	31809 77th Street	Oct-2001	748.0	\$ 81,480	-1.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 34,954	0%
4	31733 77th Street	Oct-2001	746.0	\$ 98,070	0.7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 35,951	0%
5	31826 77th Street	Oct-2001	748.5	\$ 97,860	-1.7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 99,666	0%
7	31911 77th Street	Oct-2001	746.5	\$ 75,810	0.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 83,304	0%
9	32114 77th Street	Oct-2001	749.5	\$ 75,600	-2.6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 103,368	0%
28	31711 71st Street	Oct-2001	748.0	\$ 60,060	-0.9	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 113,134	0%

Table B.4 Part 2 of 2

LOSS ESTIMATION AND ROI CALCULATIONS FOR JUNE 1999 EVENT IN KENOSHA COUNTY												
BLDG NO.	ADDRESS	ACQUISITION COMPLETION DATE	FFE (FT, NGVD) ¹	2009 BRV ²	FLOOD DEPTH (FT)	BUILDING DAMAGE	CONTENTS DAMAGE	DISPLACEMENT COSTS	DISRUPTION COSTS	TOTAL LOSSES AVOIDED	PROJECT INVESTMENT ³	RETURN ON INVESTMENT
23	6940 317th Avenue	Feb-2002	750.0	\$ 58,800	-2.9	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 130,769	0%
15	8200 No. Riverside Drive	Sep-2002	746.8	\$ 63,000	-0.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 130,863	0%
3	31417 77th Street	Oct-2002	746.0	\$ 104,160	0.6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 114,648	0%
13	32005 77th Street	Oct-2002	746.5	\$ 75,600	0.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 119,677	0%
19	8032 Shorewood Drive	Oct-2002	745.0	\$ 95,760	1.2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 133,702	0%
24	31701 77th Street	Oct-2002	748.7	\$ 79,800	-2.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 82,325	0%
25	6912 318th Avenue	Oct-2002	748.0	\$ 58,800	-0.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 87,774	0%
20	31533 77th Street	Oct-2002	748.5	\$ 56,070	-1.9	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 42,029	0%
32	31709 77th Street	Jan-2003	747.6	\$ 67,200	-1.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 80,759	0%
34	7956 Shorewood Drive	Jan-2003	746.0	\$ 63,525	0.2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 111,428	0%
22	445 So. Riverside Drive	Feb-2003	746.2	\$ 98,280	-0.5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 100,568	0%
30	31715 71st Street	May-2003	748.1	\$ 58,800	-1.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 86,360	0%
31	501 So. Riverside Drive	Oct-2003	745.4	\$ 168,000	0.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 129,181	0%
21	607 So. Riverside Drive	Sep-2004	748.3	\$ 74,970	-2.7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 108,830	0%
47	31627 71st Street	Aug-2005	747.0	\$ 104,160	0.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 140,789	0%
48	31315 77th Street	Aug-2005	746.0	\$ 95,760	0.6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 153,438	0%
38	6913 319th Avenue	Dec-2005	747.0	\$ 71,400	0.2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,348	0%
49	31602 76th Street	Dec-2005	746.1	\$ 104,160	0.6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 142,351	0%
26	30522 80th Street	Jun-2006	746.0	\$ 61,740	0.2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 110,106	0%
35	7536 313th Avenue	Jun-2006	748.0	\$ 74,130	-1.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 129,190	0%
36	511 S. Riverside Drive	Jun-2006	743.7	\$ 51,660	2.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 59,472	0%
37	606 Wisconsin Avenue	Jun-2006	743.0	\$ 37,800	2.6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 114,398	0%
40	30510 80th Street	Jun-2006	747.5	\$ 65,100	-1.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 119,470	0%
39	7600 313th Street	Aug-2006	747.0	\$ 64,680	-0.2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 96,803	0%
33	31901 71st Street	Jan-2007	750.8	\$ 58,800	-3.6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 121,564	0%
41	7962 Shorewood Drive	Mar-2007	745.0	\$ 65,520	1.2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 140,801	0%
42	31613 71st Street	Mar-2007	748.0	\$ 107,730	-0.9	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 163,558	0%
50	415 S. Riverside Drive	Feb-2008	744.0	\$ 63,525	1.7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 125,544	0%
43	7522 313th Avenue	Jun-2008	749.0	\$ 130,620	-2.2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 169,787	0%
TOTAL						\$ 151,037	\$ 89,000	\$ 7,535	\$ 105,166	\$ 352,737	\$ 1,870,844	19%

¹ Vertical datum information was not provided with the first floor elevation (FFE) information supplied by the county. Elevations were assumed to be relative to the National Geodetic Vertical Datum of 1929 (NGVD).

² Building replacement value (BRV) based on unit cost per square foot of living space for the county.

³ Project investment costs for each event only include the project costs for the buildings that were included in the analysis for that event.

Figure B.5

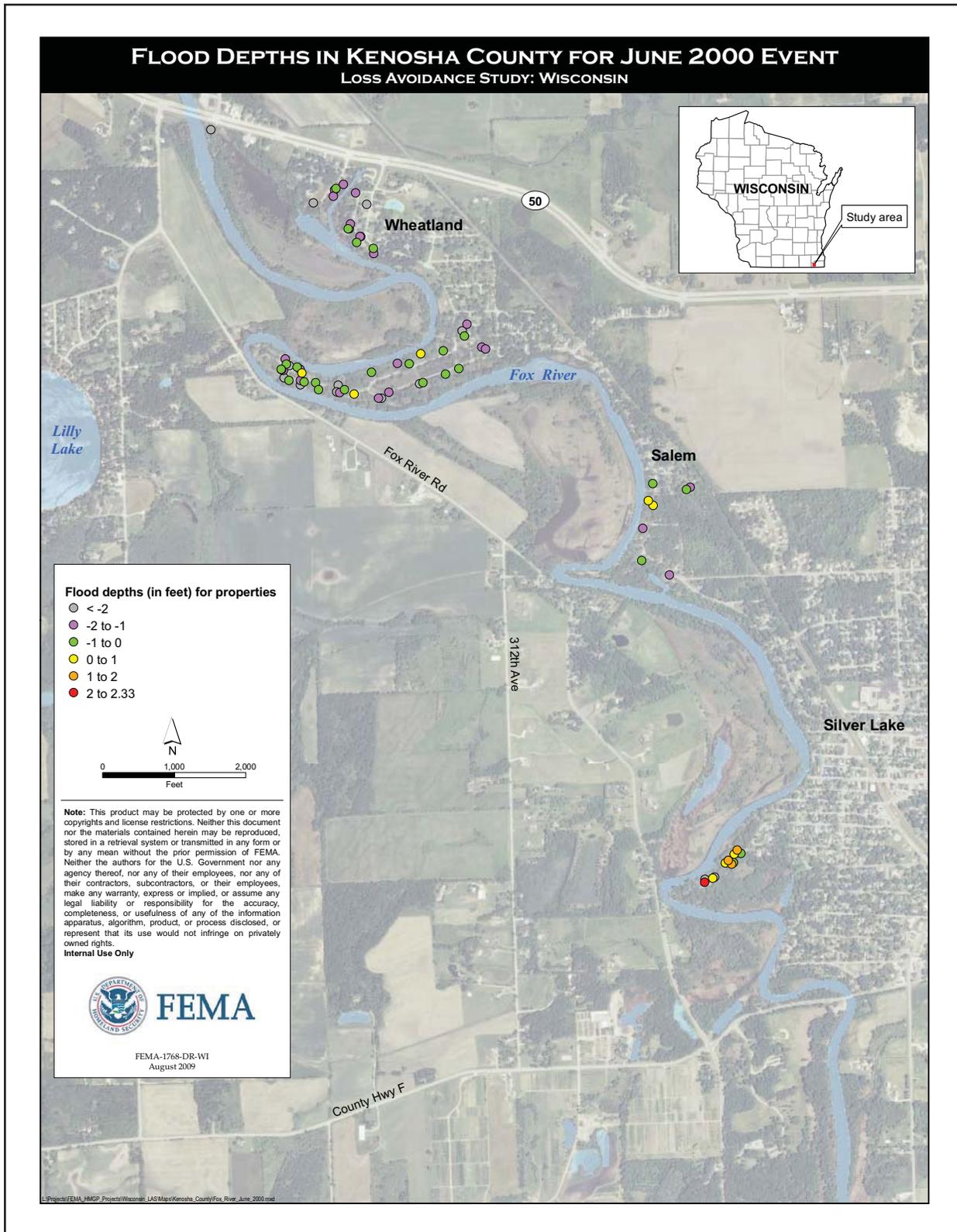


Table B.5 Part 1 of 2

LOSS ESTIMATION AND ROI CALCULATIONS FOR JUNE 2000 EVENT IN KENOSHA COUNTY												
BLDG NO.	ADDRESS	ACQUISITION COMPLETION DATE	FFE (FT, NGVD) ¹	2009 BRV ²	FLOOD DEPTH (FT)	BUILDING DAMAGE	CONTENTS DAMAGE	DISPLACEMENT COSTS	DISRUPTION COSTS	TOTAL LOSSES AVOIDED	PROJECT INVESTMENT ³	RETURN ON INVESTMENT
51	32139 77th Street	Jul-1995	747.0	\$ 134,820	-1.1	\$ 3,200	\$ 3,072	\$ -	\$ 3,316	\$ 9,589	\$ 135,493	7%
52	32129 77th Street	Jul-1995	747.9	\$ 95,760	-2.0	\$ 97	\$ 93	\$ -	\$ 2,294	\$ 2,485	\$ 121,895	2%
53	437 S. Riverside Drive	Jul-1995	744.0	\$ 85,680	1.3	\$ 22,448	\$ 12,694	\$ 2,311	\$ 14,033	\$ 51,487	\$ 121,453	42%
54	601 S. Riverside Drive	Jul-1995	749.0	\$ 107,835	-3.7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 123,925	0%
55	8106 Shorewood Drive	Jul-1995	746.7	\$ 95,760	-1.2	\$ 1,948	\$ 1,871	\$ -	\$ 3,164	\$ 6,983	\$ 127,728	5%
56	31524 76th Street	Sep-1995	745.1	\$ 70,560	0.7	\$ 14,606	\$ 8,421	\$ 1,056	\$ 11,559	\$ 35,642	\$ 116,379	31%
57	31217 77th Street	Feb-1996	747.0	\$ 75,600	-1.3	\$ 1,394	\$ 1,339	\$ -	\$ 3,078	\$ 5,811	\$ 124,635	5%
58	32041 77th Street	Feb-1996	750.7	\$ 87,360	-4.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 117,107	0%
60	419 S. Riverside Drive	Oct-1996	745.0	\$ 78,750	0.3	\$ 8,862	\$ 4,902	\$ 529	\$ 7,310	\$ 21,604	\$ 7,841	276%
59	32104 77th Street	Nov-1996	748.0	\$ 176,190	-2.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 185,843	0%
61	32028 77th Street	Apr-1997	747.0	\$ 89,880	-1.1	\$ 2,118	\$ 2,033	\$ -	\$ 3,309	\$ 7,459	\$ 136,601	5%
62	31628 76th Street	Dec-1998	747.7	\$ 106,680	-1.9	\$ 266	\$ 256	\$ -	\$ 2,361	\$ 2,883	\$ 137,189	2%
63	32029 77th Street	Dec-1998	746.6	\$ 79,800	-0.7	\$ 4,672	\$ 3,315	\$ -	\$ 4,882	\$ 12,868	\$ 100,017	13%
64	32018 77th Street	Dec-1998	747.5	\$ 82,320	-1.6	\$ 892	\$ 856	\$ -	\$ 2,736	\$ 4,483	\$ 116,767	4%
65	31710 77th Street	Jan-1999	746.4	\$ 107,100	-0.6	\$ 6,052	\$ 2,873	\$ -	\$ 4,790	\$ 13,715	\$ 139,792	10%
66	32143 77th Street	Mar-1999	747.0	\$ 145,530	-1.1	\$ 4,133	\$ 1,378	\$ -	\$ 3,526	\$ 9,037	\$ 58,179	16%
11	32132 77th Street	Dec-1999	747.0	\$ 84,000	-1.0	\$ 2,006	\$ 1,926	\$ -	\$ 3,323	\$ 7,254	\$ 90,458	8%
44	31422 76th Street	Dec-1999	746.8	\$ 94,500	-0.9	\$ 2,900	\$ 2,549	\$ -	\$ 3,629	\$ 9,079	\$ 117,619	8%
45	32034 77th Street	Dec-1999	745.5	\$ 121,800	0.4	\$ 21,392	\$ 12,529	\$ 1,039	\$ 10,148	\$ 45,108	\$ 133,352	34%
12	31823 77th Street	Dec-1999	749.0	\$ 102,900	-3.2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 116,432	0%
68	32015 77th Street	Dec-1999	748.5	\$ 121,590	-2.6	\$ 6,507	\$ 4,951	\$ -	\$ 4,656	\$ 16,114	\$ 136,982	12%
67	31917 77th Street	Jan-2000	746.1	\$ 68,355	-0.2	\$ 7,359	\$ 4,595	\$ -	\$ 7,091	\$ 19,044	\$ 30,097	63%
8	31805 71st Street	Jun-2000	748.0	\$ 133,980	-1.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 203,279	0%
16	31811 71st Street	Jun-2000	746.5	\$ 63,000	-0.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 93,912	0%
17	31519 77th Street	Jun-2000	745.8	\$ 58,800	-0.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 105,167	0%
18	6929 319th Avenue	Jun-2000	747.5	\$ 73,500	-1.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 98,058	0%
69	6921 319th Avenue	Jun-2000	748.0	\$ 103,320	-1.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 108,859	0%
73	441 S. Riverside Drive	Jun-2000	745.0	\$ 105,840	0.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 131,060	0%
10	31638 76th Street	Jul-2000	747.6	\$ 150,570	-1.9	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 166,468	0%
14	8153 Shorewood Drive	Jul-2000	746.5	\$ 78,750	-1.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 115,113	0%
70	31214 77th Street	Sep-2000	747.0	\$ 98,280	-1.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 75,177	0%
1	6712 Wheatland Road	Dec-2000	750.5	\$ 64,680	-4.2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 122,709	0%
71	6905 319th Avenue	Dec-2000	748.0	\$ 138,915	-1.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 136,356	0%
72	31705 71st Street	Jan-2001	747.0	\$ 78,960	-0.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 96,381	0%
29	31822 71st Street	Sep-2001	748.0	\$ 139,125	-1.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 146,597	0%
2	31809 77th Street	Oct-2001	748.0	\$ 81,480	-2.2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 34,954	0%
4	31733 77th Street	Oct-2001	746.0	\$ 98,070	-0.2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 35,951	0%
5	31826 77th Street	Oct-2001	748.5	\$ 97,860	-2.7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 99,666	0%
7	31911 77th Street	Oct-2001	746.5	\$ 75,810	-0.6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 83,304	0%
9	32114 77th Street	Oct-2001	749.5	\$ 75,600	-3.6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 103,368	0%
28	31711 71st Street	Oct-2001	748.0	\$ 60,060	-1.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 113,134	0%

Table B.5 Part 2 of 2

LOSS ESTIMATION AND ROI CALCULATIONS FOR JUNE 2000 EVENT IN KENOSHA COUNTY												
BLDG NO.	ADDRESS	ACQUISITION COMPLETION DATE	FFE (FT, NGVD) ¹	2009 BRV ²	FLOOD DEPTH (FT)	BUILDING DAMAGE	CONTENTS DAMAGE	DISPLACEMENT COSTS	DISRUPTION COSTS	TOTAL LOSSES AVOIDED	PROJECT INVESTMENT ³	RETURN ON INVESTMENT
23	6940 317th Avenue	Feb-2002	750.0	\$ 58,800	-3.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 130,769	0%
15	8200 No. Riverside Drive	Sep-2002	746.8	\$ 63,000	-1.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 130,863	0%
3	31417 77th Street	Oct-2002	746.0	\$ 104,160	-0.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 114,648	0%
13	32005 77th Street	Oct-2002	746.5	\$ 75,600	-0.6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 119,677	0%
19	8032 Shorewood Drive	Oct-2002	745.0	\$ 95,760	0.5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 133,702	0%
24	31701 77th Street	Oct-2002	748.7	\$ 79,800	-3.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 82,325	0%
25	6912 318th Avenue	Oct-2002	748.0	\$ 58,800	-1.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 87,774	0%
20	31533 77th Street	Oct-2002	748.5	\$ 56,070	-2.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 42,029	0%
32	31709 77th Street	Jan-2003	747.6	\$ 67,200	-1.9	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 80,759	0%
34	7956 Shorewood Drive	Jan-2003	746.0	\$ 63,525	-0.5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 111,428	0%
22	445 So. Riverside Drive	Feb-2003	746.2	\$ 98,280	-0.9	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 100,568	0%
30	31715 71st Street	May-2003	748.1	\$ 58,800	-1.9	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 86,360	0%
31	501 So. Riverside Drive	Oct-2003	745.4	\$ 168,000	-0.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 129,181	0%
21	607 So. Riverside Drive	Sep-2004	748.3	\$ 74,970	-3.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 108,830	0%
47	31627 71st Street	Aug-2005	747.0	\$ 104,160	-0.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 140,789	0%
48	31315 77th Street	Aug-2005	746.0	\$ 95,760	-0.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 153,438	0%
38	6913 319th Avenue	Dec-2005	747.0	\$ 71,400	-0.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,348	0%
49	31602 76th Street	Dec-2005	746.1	\$ 104,160	-0.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 142,351	0%
26	30522 80th Street	Jun-2006	746.0	\$ 61,740	-0.5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 110,106	0%
35	7536 313th Avenue	Jun-2006	748.0	\$ 74,130	-2.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 129,190	0%
36	511 S. Riverside Drive	Jun-2006	743.7	\$ 51,660	1.6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 59,472	0%
37	606 Wisconsin Avenue	Jun-2006	743.0	\$ 37,800	2.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 114,398	0%
40	30510 80th Street	Jun-2006	747.5	\$ 65,100	-2.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 119,470	0%
39	7600 313th Street	Aug-2006	747.0	\$ 64,680	-1.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 96,803	0%
33	31901 71st Street	Jan-2007	750.8	\$ 58,800	-4.6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 121,564	0%
41	7962 Shorewood Drive	Mar-2007	745.0	\$ 65,520	0.5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 140,801	0%
42	31613 71st Street	Mar-2007	748.0	\$ 107,730	-1.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 163,558	0%
50	415 S. Riverside Drive	Feb-2008	744.0	\$ 63,525	1.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 125,544	0%
43	7522 313th Avenue	Jun-2008	749.0	\$ 130,620	-3.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 169,787	0%
TOTAL						\$ 110,853	\$ 69,653	\$ 4,935	\$ 95,205	\$ 280,647	\$ 2,495,784	11%

¹ Vertical datum information was not provided with the first floor elevation (FFE) information supplied by the county. Elevations were assumed to be relative to the National Geodetic Vertical Datum of 1929 (NGVD).

² Building replacement value (BRV) based on unit cost per square foot of living space for the county.

³ Project investment costs for each event only include the project costs for the buildings that were included in the analysis for that event.

Figure B.6

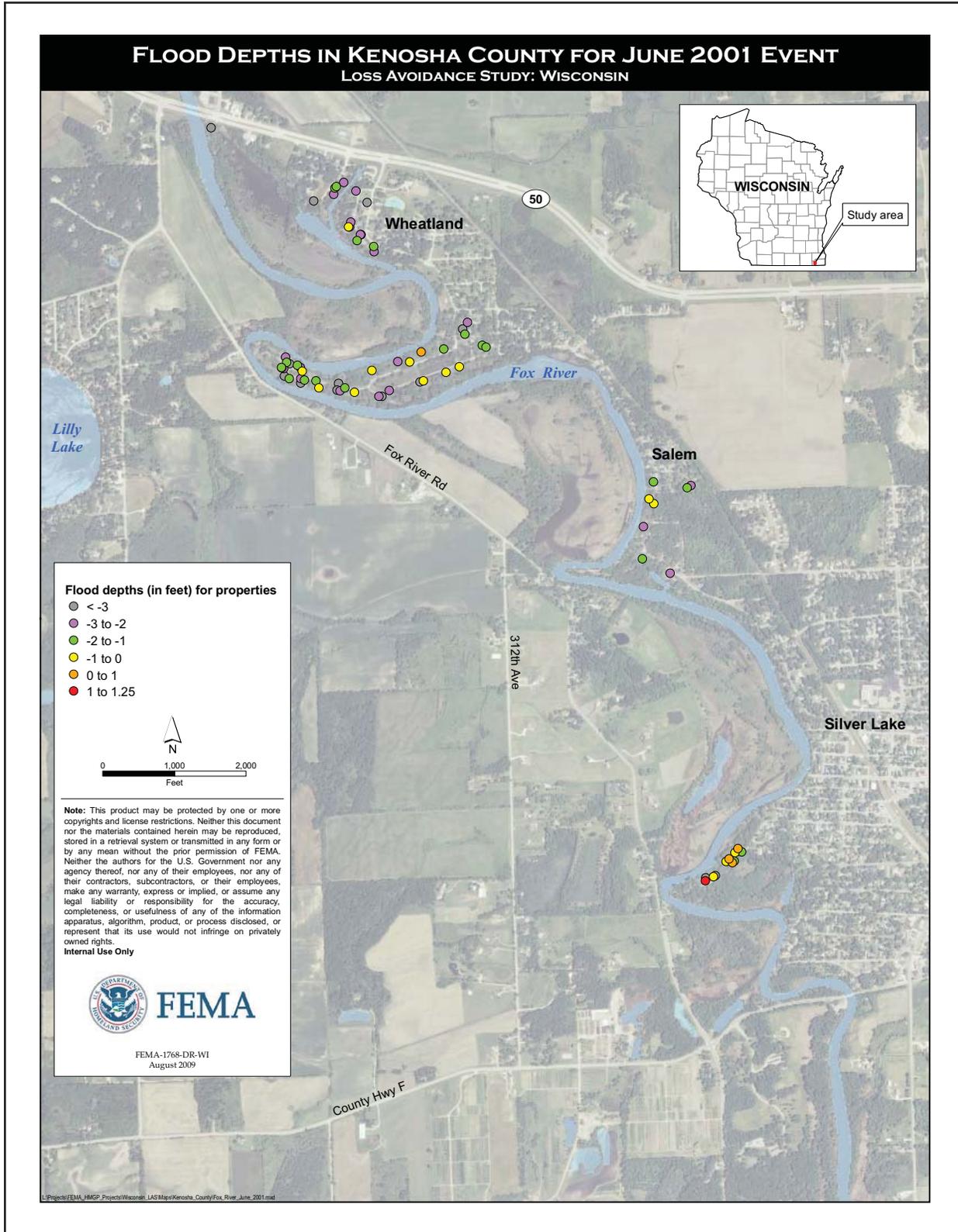


Table B.6 Part 1 of 2

LOSS ESTIMATION AND ROI CALCULATIONS FOR JUNE 2001 EVENT IN KENOSHA COUNTY												
BLDG NO.	ADDRESS	ACQUISITION COMPLETION DATE	FFE (FT, NGVD) ¹	2009 BRV ²	FLOOD DEPTH (FT)	BUILDING DAMAGE	CONTENTS DAMAGE	DISPLACEMENT COSTS	DISRUPTION COSTS	TOTAL LOSSES AVOIDED	PROJECT INVESTMENT ³	RETURN ON INVESTMENT
51	32139 77th Street	Jul-1995	747.0	\$ 134,820	-1.7	\$ 1,079	\$ 1,036	\$ -	\$ 2,609	\$ 4,724	\$ 135,493	3%
52	32129 77th Street	Jul-1995	747.9	\$ 95,760	-2.6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 121,895	0%
53	437 S. Riverside Drive	Jul-1995	744.0	\$ 85,680	0.2	\$ 13,593	\$ 8,049	\$ 433	\$ 9,384	\$ 31,460	\$ 121,453	26%
54	601 S. Riverside Drive	Jul-1995	749.0	\$ 107,835	-4.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 123,925	0%
55	8106 Shorewood Drive	Jul-1995	746.7	\$ 95,760	-2.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 127,728	0%
56	31524 76th Street	Sep-1995	745.1	\$ 70,560	0.1	\$ 10,020	\$ 6,012	\$ 116	\$ 8,636	\$ 24,783	\$ 116,379	21%
57	31217 77th Street	Feb-1996	747.0	\$ 75,600	-1.9	\$ 108	\$ 103	\$ -	\$ 2,313	\$ 2,524	\$ 124,635	2%
58	32041 77th Street	Feb-1996	750.7	\$ 87,360	-5.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 117,107	0%
60	419 S. Riverside Drive	Oct-1996	745.0	\$ 78,750	-0.7	\$ 3,620	\$ 1,586	\$ -	\$ 4,316	\$ 9,523	\$ 7,841	121%
59	32104 77th Street	Nov-1996	748.0	\$ 176,190	-2.7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 185,843	0%
61	32028 77th Street	Apr-1997	747.0	\$ 89,880	-1.7	\$ 700	\$ 672	\$ -	\$ 2,599	\$ 3,971	\$ 136,601	3%
62	31628 76th Street	Dec-1998	747.7	\$ 106,680	-2.6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 137,189	0%
63	32029 77th Street	Dec-1998	746.6	\$ 79,800	-1.3	\$ 1,333	\$ 1,280	\$ -	\$ 3,000	\$ 5,613	\$ 100,017	6%
64	32018 77th Street	Dec-1998	747.5	\$ 82,320	-2.2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 116,767	0%
65	31710 77th Street	Jan-1999	746.4	\$ 107,100	-1.2	\$ 2,442	\$ 814	\$ -	\$ 3,274	\$ 6,530	\$ 139,792	5%
66	32143 77th Street	Mar-1999	747.0	\$ 145,530	-1.7	\$ 1,383	\$ 461	\$ -	\$ 2,676	\$ 4,520	\$ 58,179	8%
11	32132 77th Street	Dec-1999	747.0	\$ 84,000	-1.7	\$ 687	\$ 660	\$ -	\$ 2,617	\$ 3,964	\$ 90,458	4%
44	31422 76th Street	Dec-1999	746.8	\$ 94,500	-1.6	\$ 943	\$ 905	\$ -	\$ 2,698	\$ 4,546	\$ 117,619	4%
45	32034 77th Street	Dec-1999	745.5	\$ 121,800	-0.2	\$ 13,455	\$ 8,367	\$ -	\$ 7,217	\$ 29,040	\$ 133,352	22%
12	31823 77th Street	Dec-1999	749.0	\$ 102,900	-3.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 116,432	0%
68	32015 77th Street	Dec-1999	748.5	\$ 121,590	-3.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 136,982	0%
67	31917 77th Street	Jan-2000	746.1	\$ 68,355	-0.9	\$ 2,505	\$ 2,057	\$ -	\$ 3,897	\$ 8,458	\$ 30,097	28%
8	31805 71st Street	Jun-2000	748.0	\$ 133,980	-2.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 203,279	0%
16	31811 71st Street	Jun-2000	746.5	\$ 63,000	-0.9	\$ 2,277	\$ 1,879	\$ -	\$ 3,874	\$ 8,030	\$ 93,912	9%
17	31519 77th Street	Jun-2000	745.8	\$ 58,800	-0.8	\$ 2,717	\$ 2,063	\$ -	\$ 4,327	\$ 9,108	\$ 105,167	9%
18	6929 319th Avenue	Jun-2000	747.5	\$ 73,500	-1.9	\$ 217	\$ 209	\$ -	\$ 2,382	\$ 2,808	\$ 98,058	3%
69	6921 319th Avenue	Jun-2000	748.0	\$ 103,320	-2.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 108,859	0%
73	441 S. Riverside Drive	Jun-2000	745.0	\$ 105,840	-0.8	\$ 4,818	\$ 2,101	\$ -	\$ 4,296	\$ 11,216	\$ 131,060	9%
10	31638 76th Street	Jul-2000	747.6	\$ 150,570	-2.6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 166,468	0%
14	8153 Shorewood Drive	Jul-2000	746.5	\$ 78,750	-1.9	\$ 175	\$ 58	\$ -	\$ 2,349	\$ 2,581	\$ 115,113	2%
70	31214 77th Street	Sep-2000	747.0	\$ 98,280	-2.0	\$ 49	\$ 47	\$ -	\$ 2,271	\$ 2,367	\$ 75,177	3%
1	6712 Wheatland Road	Dec-2000	750.5	\$ 64,680	-4.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 122,709	0%
71	6905 319th Avenue	Dec-2000	748.0	\$ 138,915	-2.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 136,356	0%
72	31705 71st Street	Jan-2001	747.0	\$ 78,960	-1.4	\$ 1,144	\$ 1,099	\$ -	\$ 2,901	\$ 5,144	\$ 96,381	5%
29	31822 71st Street	Sep-2001	748.0	\$ 139,125	-2.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 146,597	0%
2	31809 77th Street	Oct-2001	748.0	\$ 81,480	-2.9	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 34,954	0%
4	31733 77th Street	Oct-2001	746.0	\$ 98,070	-0.9	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 35,951	0%
5	31826 77th Street	Oct-2001	748.5	\$ 97,860	-3.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 99,666	0%
7	31911 77th Street	Oct-2001	746.5	\$ 75,810	-1.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 83,304	0%
9	32114 77th Street	Oct-2001	749.5	\$ 75,600	-4.2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 103,368	0%
28	31711 71st Street	Oct-2001	748.0	\$ 60,060	-2.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 113,134	0%

Table B.6 Part 2 of 2

LOSS ESTIMATION AND ROI CALCULATIONS FOR JUNE 2001 EVENT IN KENOSHA COUNTY												
BLDG NO.	ADDRESS	ACQUISITION COMPLETION DATE	FFE (FT, NGVD) ¹	2009 BRV ²	FLOOD DEPTH (FT)	BUILDING DAMAGE	CONTENTS DAMAGE	DISPLACEMENT COSTS	DISRUPTION COSTS	TOTAL LOSSES AVOIDED	PROJECT INVESTMENT ³	RETURN ON INVESTMENT
23	6940 317th Avenue	Feb-2002	750.0	\$ 58,800	-4.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 130,769	0%
15	8200 No. Riverside Drive	Sep-2002	746.8	\$ 63,000	-2.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 130,863	0%
3	31417 77th Street	Oct-2002	746.0	\$ 104,160	-1.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 114,648	0%
13	32005 77th Street	Oct-2002	746.5	\$ 75,600	-1.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 119,677	0%
19	8032 Shorewood Drive	Oct-2002	745.0	\$ 95,760	-0.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 133,702	0%
24	31701 77th Street	Oct-2002	748.7	\$ 79,800	-3.7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 82,325	0%
25	6912 318th Avenue	Oct-2002	748.0	\$ 58,800	-2.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 87,774	0%
20	31533 77th Street	Oct-2002	748.5	\$ 56,070	-3.5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 42,029	0%
32	31709 77th Street	Jan-2003	747.6	\$ 67,200	-2.6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 80,759	0%
34	7956 Shorewood Drive	Jan-2003	746.0	\$ 63,525	-1.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 111,428	0%
22	445 So. Riverside Drive	Feb-2003	746.2	\$ 98,280	-1.9	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 100,568	0%
30	31715 71st Street	May-2003	748.1	\$ 58,800	-2.5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 86,360	0%
31	501 So. Riverside Drive	Oct-2003	745.4	\$ 168,000	-1.2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 129,181	0%
21	607 So. Riverside Drive	Sep-2004	748.3	\$ 74,970	-4.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 108,830	0%
47	31627 71st Street	Aug-2005	747.0	\$ 104,160	-1.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 140,789	0%
48	31315 77th Street	Aug-2005	746.0	\$ 95,760	-1.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 153,438	0%
38	6913 319th Avenue	Dec-2005	747.0	\$ 71,400	-1.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,348	0%
49	31602 76th Street	Dec-2005	746.1	\$ 104,160	-1.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 142,351	0%
26	30522 80th Street	Jun-2006	746.0	\$ 61,740	-1.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 110,106	0%
35	7536 313th Avenue	Jun-2006	748.0	\$ 74,130	-2.7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 129,190	0%
36	511 S. Riverside Drive	Jun-2006	743.7	\$ 51,660	0.5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 59,472	0%
37	606 Wisconsin Avenue	Jun-2006	743.0	\$ 37,800	1.2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 114,398	0%
40	30510 80th Street	Jun-2006	747.5	\$ 65,100	-2.9	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 119,470	0%
39	7600 313th Street	Aug-2006	747.0	\$ 64,680	-1.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 96,803	0%
33	31901 71st Street	Jan-2007	750.8	\$ 58,800	-5.2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 121,564	0%
41	7962 Shorewood Drive	Mar-2007	745.0	\$ 65,520	-0.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 140,801	0%
42	31613 71st Street	Mar-2007	748.0	\$ 107,730	-2.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 163,558	0%
50	415 S. Riverside Drive	Feb-2008	744.0	\$ 63,525	0.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 125,544	0%
43	7522 313th Avenue	Jun-2008	749.0	\$ 130,620	-3.7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 169,787	0%
TOTAL						\$ 63,266	\$ 39,459	\$ 549	\$ 77,636	\$ 180,910	\$ 3,948,322	5%

¹ Vertical datum information was not provided with the first floor elevation (FFE) information supplied by the county. Elevations were assumed to be relative to the National Geodetic Vertical Datum of 1929 (NGVD).

² Building replacement value (BRV) based on unit cost per square foot of living space for the county.

³ Project investment costs for each event only include the project costs for the buildings that were included in the analysis for that event.

Figure B.7

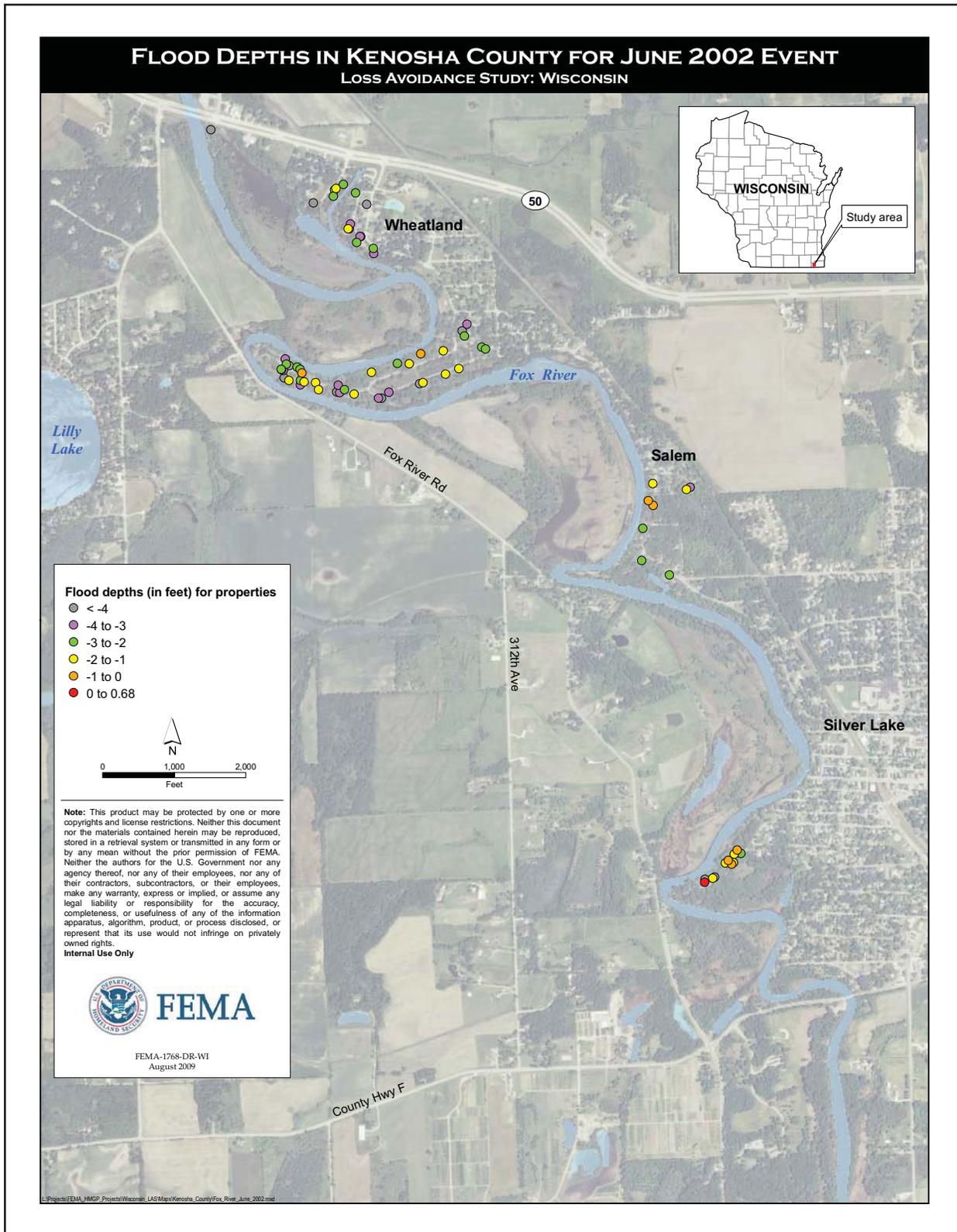


Table B.7 Part 1 of 2

LOSS ESTIMATION AND ROI CALCULATIONS FOR JUNE 2002 EVENT IN KENOSHA COUNTY												
BLDG NO.	ADDRESS	ACQUISITION COMPLETION DATE	FFE (FT, NGVD) ¹	2009 BRV ²	FLOOD DEPTH (FT)	BUILDING DAMAGE	CONTENTS DAMAGE	DISPLACEMENT COSTS	DISRUPTION COSTS	TOTAL LOSSES AVOIDED	PROJECT INVESTMENT ³	RETURN ON INVESTMENT
51	32139 77th Street	Jul-1995	747.0	\$ 134,820	-2.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 135,493	0%
52	32129 77th Street	Jul-1995	747.9	\$ 95,760	-3.2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 121,895	0%
53	437 S. Riverside Drive	Jul-1995	744.0	\$ 85,680	-0.3	\$ 8,485	\$ 5,373	\$ -	\$ 6,703	\$ 20,560	\$ 121,453	17%
54	601 S. Riverside Drive	Jul-1995	749.0	\$ 107,835	-5.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 123,925	0%
55	8106 Shorewood Drive	Jul-1995	746.7	\$ 95,760	-2.7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 127,728	0%
56	31524 76th Street	Sep-1995	745.1	\$ 70,560	-0.6	\$ 5,192	\$ 3,486	\$ -	\$ 5,558	\$ 14,236	\$ 116,379	12%
57	31217 77th Street	Feb-1996	747.0	\$ 75,600	-2.6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 124,635	0%
58	32041 77th Street	Feb-1996	750.7	\$ 87,360	-6.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 117,107	0%
60	419 S. Riverside Drive	Oct-1996	745.0	\$ 78,750	-1.3	\$ 1,615	\$ 538	\$ -	\$ 3,171	\$ 5,324	\$ 7,841	68%
59	32104 77th Street	Nov-1996	748.0	\$ 176,190	-3.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 185,843	0%
61	32028 77th Street	Apr-1997	747.0	\$ 89,880	-2.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 136,601	0%
62	31628 76th Street	Dec-1998	747.7	\$ 106,680	-3.2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 137,189	0%
63	32029 77th Street	Dec-1998	746.6	\$ 79,800	-2.0	\$ 81	\$ 78	\$ -	\$ 2,295	\$ 2,454	\$ 100,017	2%
64	32018 77th Street	Dec-1998	747.5	\$ 82,320	-2.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 116,767	0%
65	31710 77th Street	Jan-1999	746.4	\$ 107,100	-1.9	\$ 396	\$ 132	\$ -	\$ 2,415	\$ 2,942	\$ 139,792	2%
66	32143 77th Street	Mar-1999	747.0	\$ 145,530	-2.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 58,179	0%
11	32132 77th Street	Dec-1999	747.0	\$ 84,000	-2.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 90,458	0%
44	31422 76th Street	Dec-1999	746.8	\$ 94,500	-2.2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 117,619	0%
45	32034 77th Street	Dec-1999	745.5	\$ 121,800	-0.8	\$ 5,142	\$ 4,020	\$ -	\$ 4,148	\$ 13,310	\$ 133,352	10%
12	31823 77th Street	Dec-1999	749.0	\$ 102,900	-4.5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 116,432	0%
68	32015 77th Street	Dec-1999	748.5	\$ 121,590	-3.9	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 136,982	0%
67	31917 77th Street	Jan-2000	746.1	\$ 68,355	-1.5	\$ 810	\$ 777	\$ -	\$ 2,782	\$ 4,369	\$ 30,097	15%
8	31805 71st Street	Jun-2000	748.0	\$ 133,980	-3.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 203,279	0%
16	31811 71st Street	Jun-2000	746.5	\$ 63,000	-1.5	\$ 790	\$ 758	\$ -	\$ 2,813	\$ 4,361	\$ 93,912	5%
17	31519 77th Street	Jun-2000	745.8	\$ 58,800	-1.5	\$ 804	\$ 772	\$ -	\$ 2,864	\$ 4,440	\$ 105,167	4%
18	6929 319th Avenue	Jun-2000	747.5	\$ 73,500	-2.5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 98,058	0%
69	6921 319th Avenue	Jun-2000	748.0	\$ 103,320	-3.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 108,859	0%
73	441 S. Riverside Drive	Jun-2000	745.0	\$ 105,840	-1.3	\$ 2,149	\$ 716	\$ -	\$ 3,162	\$ 6,028	\$ 131,060	5%
10	31638 76th Street	Jul-2000	747.6	\$ 150,570	-3.2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 166,468	0%
14	8153 Shorewood Drive	Jul-2000	746.5	\$ 78,750	-2.5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 115,113	0%
70	31214 77th Street	Sep-2000	747.0	\$ 98,280	-2.6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 75,177	0%
1	6712 Wheatland Road	Dec-2000	750.5	\$ 64,680	-5.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 122,709	0%
71	6905 319th Avenue	Dec-2000	748.0	\$ 138,915	-3.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 136,356	0%
72	31705 71st Street	Jan-2001	747.0	\$ 78,960	-2.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 96,381	0%
29	31822 71st Street	Sep-2001	748.0	\$ 139,125	-3.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 146,597	0%
2	31809 77th Street	Oct-2001	748.0	\$ 81,480	-3.5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 34,954	0%
4	31733 77th Street	Oct-2001	746.0	\$ 98,070	-1.5	\$ 1,117	\$ 1,073	\$ -	\$ 2,761	\$ 4,951	\$ 35,951	14%
5	31826 77th Street	Oct-2001	748.5	\$ 97,860	-4.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 99,666	0%
7	31911 77th Street	Oct-2001	746.5	\$ 75,810	-1.9	\$ 183	\$ 176	\$ -	\$ 2,358	\$ 2,717	\$ 83,304	3%
9	32114 77th Street	Oct-2001	749.5	\$ 75,600	-4.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 103,368	0%
28	31711 71st Street	Oct-2001	748.0	\$ 60,060	-3.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 113,134	0%

Table B.7 Part 2 of 2

LOSS ESTIMATION AND ROI CALCULATIONS FOR JUNE 2002 EVENT IN KENOSHA COUNTY												
BLDG NO.	ADDRESS	ACQUISITION COMPLETION DATE	FFE (FT, NGVD) ¹	2009 BRV ²	FLOOD DEPTH (FT)	BUILDING DAMAGE	CONTENTS DAMAGE	DISPLACEMENT COSTS	DISRUPTION COSTS	TOTAL LOSSES AVOIDED	PROJECT INVESTMENT ³	RETURN ON INVESTMENT
23	6940 317th Avenue	Feb-2002	750.0	\$ 58,800	-5.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 130,769	0%
15	8200 No. Riverside Drive	Sep-2002	746.8	\$ 63,000	-2.9	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 130,863	0%
3	31417 77th Street	Oct-2002	746.0	\$ 104,160	-1.7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 114,648	0%
13	32005 77th Street	Oct-2002	746.5	\$ 75,600	-1.9	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 119,677	0%
19	8032 Shorewood Drive	Oct-2002	745.0	\$ 95,760	-1.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 133,702	0%
24	31701 77th Street	Oct-2002	748.7	\$ 79,800	-4.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 82,325	0%
25	6912 318th Avenue	Oct-2002	748.0	\$ 58,800	-3.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 87,774	0%
20	31533 77th Street	Oct-2002	748.5	\$ 56,070	-4.2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 42,029	0%
32	31709 77th Street	Jan-2003	747.6	\$ 67,200	-3.2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 80,759	0%
34	7956 Shorewood Drive	Jan-2003	746.0	\$ 63,525	-2.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 111,428	0%
22	445 So. Riverside Drive	Feb-2003	746.2	\$ 98,280	-2.5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 100,568	0%
30	31715 71st Street	May-2003	748.1	\$ 58,800	-3.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 86,360	0%
31	501 So. Riverside Drive	Oct-2003	745.4	\$ 168,000	-1.7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 129,181	0%
21	607 So. Riverside Drive	Sep-2004	748.3	\$ 74,970	-4.6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 108,830	0%
47	31627 71st Street	Aug-2005	747.0	\$ 104,160	-2.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 140,789	0%
48	31315 77th Street	Aug-2005	746.0	\$ 95,760	-1.7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 153,438	0%
38	6913 319th Avenue	Dec-2005	747.0	\$ 71,400	-2.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,348	0%
49	31602 76th Street	Dec-2005	746.1	\$ 104,160	-1.6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 142,351	0%
26	30522 80th Street	Jun-2006	746.0	\$ 61,740	-2.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 110,106	0%
35	7536 313th Avenue	Jun-2006	748.0	\$ 74,130	-3.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 129,190	0%
36	511 S. Riverside Drive	Jun-2006	743.7	\$ 51,660	0.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 59,472	0%
37	606 Wisconsin Avenue	Jun-2006	743.0	\$ 37,800	0.7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 114,398	0%
40	30510 80th Street	Jun-2006	747.5	\$ 65,100	-3.5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 119,470	0%
39	7600 313th Street	Aug-2006	747.0	\$ 64,680	-2.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 96,803	0%
33	31901 71st Street	Jan-2007	750.8	\$ 58,800	-5.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 121,564	0%
41	7962 Shorewood Drive	Mar-2007	745.0	\$ 65,520	-1.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 140,801	0%
42	31613 71st Street	Mar-2007	748.0	\$ 107,730	-3.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 163,558	0%
50	415 S. Riverside Drive	Feb-2008	744.0	\$ 63,525	-0.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 125,544	0%
43	7522 313th Avenue	Jun-2008	749.0	\$ 130,620	-4.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 169,787	0%
TOTAL					\$ 29,506	\$ 18,814	\$ -	\$ 44,174	\$ 92,493	\$ 5,024,413	2%	

¹ Vertical datum information was not provided with the first floor elevation (FFE) information supplied by the county. Elevations were assumed to be relative to the National Geodetic Vertical Datum of 1929 (NGVD).

² Building replacement value (BRV) based on unit cost per square foot of living space for the county.

³ Project investment costs for each event only include the project costs for the buildings that were included in the analysis for that event.

Figure B.8

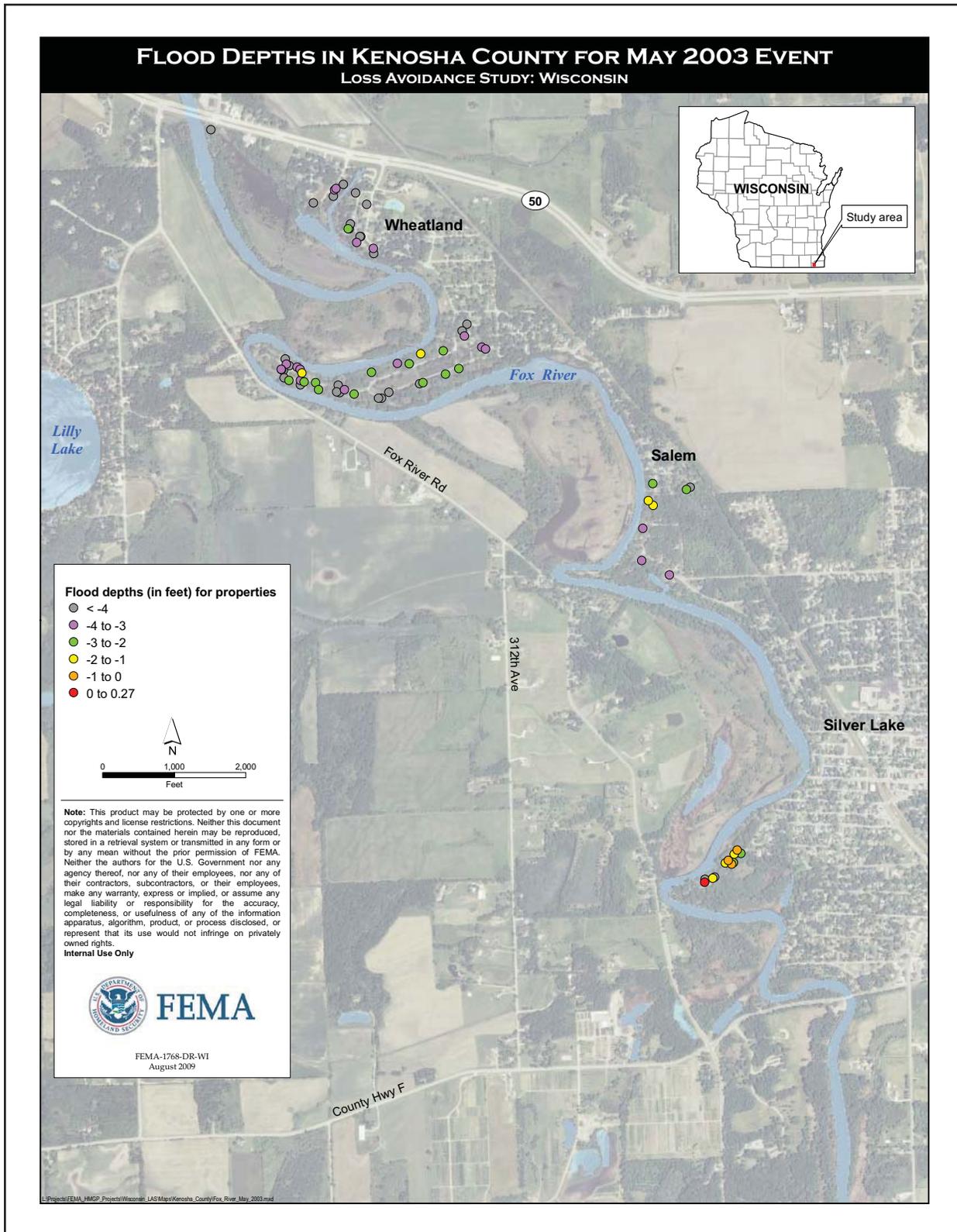


Table B.8 Part 1 of 2

LOSS ESTIMATION AND ROI CALCULATIONS FOR MAY 2003 EVENT IN KENOSHA COUNTY												
BLDG NO.	ADDRESS	ACQUISITION COMPLETION DATE	FFE (FT, NGVD) ¹	2009 BRV ²	FLOOD DEPTH (FT)	BUILDING DAMAGE	CONTENTS DAMAGE	DISPLACEMENT COSTS	DISRUPTION COSTS	TOTAL LOSSES AVOIDED	PROJECT INVESTMENT ³	RETURN ON INVESTMENT
51	32139 77th Street	Jul-1995	747.0	\$ 134,820	-3.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 135,493	0%
52	32129 77th Street	Jul-1995	747.9	\$ 95,760	-4.2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 121,895	0%
53	437 S. Riverside Drive	Jul-1995	744.0	\$ 85,680	-0.7	\$ 4,661	\$ 3,374	\$ -	\$ 4,695	\$ 12,730	\$ 121,453	10%
54	601 S. Riverside Drive	Jul-1995	749.0	\$ 107,835	-5.7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 123,925	0%
55	8106 Shorewood Drive	Jul-1995	746.7	\$ 95,760	-3.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 127,728	0%
56	31524 76th Street	Sep-1995	745.1	\$ 70,560	-1.4	\$ 995	\$ 955	\$ -	\$ 2,883	\$ 4,833	\$ 116,379	4%
57	31217 77th Street	Feb-1996	747.0	\$ 75,600	-3.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 124,635	0%
58	32041 77th Street	Feb-1996	750.7	\$ 87,360	-7.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 117,107	0%
60	419 S. Riverside Drive	Oct-1996	745.0	\$ 78,750	-1.7	\$ 641	\$ 214	\$ -	\$ 2,615	\$ 3,469	\$ 7,841	44%
59	32104 77th Street	Nov-1996	748.0	\$ 176,190	-4.2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 185,843	0%
61	32028 77th Street	Apr-1997	747.0	\$ 89,880	-3.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 136,601	0%
62	31628 76th Street	Dec-1998	747.7	\$ 106,680	-4.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 137,189	0%
63	32029 77th Street	Dec-1998	746.6	\$ 79,800	-2.9	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 100,017	0%
64	32018 77th Street	Dec-1998	747.5	\$ 82,320	-3.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 116,767	0%
65	31710 77th Street	Jan-1999	746.4	\$ 107,100	-2.7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 139,792	0%
66	32143 77th Street	Mar-1999	747.0	\$ 145,530	-3.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 58,179	0%
11	32132 77th Street	Dec-1999	747.0	\$ 84,000	-3.2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 90,458	0%
44	31422 76th Street	Dec-1999	746.8	\$ 94,500	-3.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 117,619	0%
45	32034 77th Street	Dec-1999	745.5	\$ 121,800	-1.8	\$ 691	\$ 663	\$ -	\$ 2,504	\$ 3,858	\$ 133,352	3%
12	31823 77th Street	Dec-1999	749.0	\$ 102,900	-5.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 116,432	0%
68	32015 77th Street	Dec-1999	748.5	\$ 121,590	-4.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 136,982	0%
67	31917 77th Street	Jan-2000	746.1	\$ 68,355	-2.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 30,097	0%
8	31805 71st Street	Jun-2000	748.0	\$ 133,980	-4.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 203,279	0%
16	31811 71st Street	Jun-2000	746.5	\$ 63,000	-2.6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 93,912	0%
17	31519 77th Street	Jun-2000	745.8	\$ 58,800	-2.2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 105,167	0%
18	6929 319th Avenue	Jun-2000	747.5	\$ 73,500	-3.6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 98,058	0%
69	6921 319th Avenue	Jun-2000	748.0	\$ 103,320	-4.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 108,859	0%
73	441 S. Riverside Drive	Jun-2000	745.0	\$ 105,840	-1.7	\$ 854	\$ 285	\$ -	\$ 2,612	\$ 3,750	\$ 131,060	3%
10	31638 76th Street	Jul-2000	747.6	\$ 150,570	-4.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 166,468	0%
14	8153 Shorewood Drive	Jul-2000	746.5	\$ 78,750	-3.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 115,113	0%
70	31214 77th Street	Sep-2000	747.0	\$ 98,280	-3.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 75,177	0%
1	6712 Wheatland Road	Dec-2000	750.5	\$ 64,680	-6.5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 122,709	0%
71	6905 319th Avenue	Dec-2000	748.0	\$ 138,915	-4.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 136,356	0%
72	31705 71st Street	Jan-2001	747.0	\$ 78,960	-3.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 96,381	0%
29	31822 71st Street	Sep-2001	748.0	\$ 139,125	-4.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 146,597	0%
2	31809 77th Street	Oct-2001	748.0	\$ 81,480	-4.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 34,954	0%
4	31733 77th Street	Oct-2001	746.0	\$ 98,070	-2.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 35,951	0%
5	31826 77th Street	Oct-2001	748.5	\$ 97,860	-4.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 99,666	0%
7	31911 77th Street	Oct-2001	746.5	\$ 75,810	-2.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 83,304	0%
9	32114 77th Street	Oct-2001	749.5	\$ 75,600	-5.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 103,368	0%
28	31711 71st Street	Oct-2001	748.0	\$ 60,060	-4.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 113,134	0%

Table B.8 Part 2 of 2

LOSS ESTIMATION AND ROI CALCULATIONS FOR MAY 2003 EVENT IN KENOSHA COUNTY												
BLDG NO.	ADDRESS	ACQUISITION COMPLETION DATE	FFE (FT, NGVD) ¹	2009 BRV ²	FLOOD DEPTH (FT)	BUILDING DAMAGE	CONTENTS DAMAGE	DISPLACEMENT COSTS	DISRUPTION COSTS	TOTAL LOSSES AVOIDED	PROJECT INVESTMENT ³	RETURN ON INVESTMENT
23	6940 317th Avenue	Feb-2002	750.0	\$ 58,800	-6.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 130,769	0%
15	8200 No. Riverside Drive	Sep-2002	746.8	\$ 63,000	-3.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 130,863	0%
3	31417 77th Street	Oct-2002	746.0	\$ 104,160	-2.5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 114,648	0%
13	32005 77th Street	Oct-2002	746.5	\$ 75,600	-2.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 119,677	0%
19	8032 Shorewood Drive	Oct-2002	745.0	\$ 95,760	-1.6	\$ 980	\$ 941	\$ -	\$ 2,709	\$ 4,630	\$ 133,702	3%
24	31701 77th Street	Oct-2002	748.7	\$ 79,800	-5.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 82,325	0%
25	6912 318th Avenue	Oct-2002	748.0	\$ 58,800	-4.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 87,774	0%
20	31533 77th Street	Oct-2002	748.5	\$ 56,070	-4.9	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 42,029	0%
32	31709 77th Street	Jan-2003	747.6	\$ 67,200	-4.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 80,759	0%
34	7956 Shorewood Drive	Jan-2003	746.0	\$ 63,525	-2.6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 111,428	0%
22	445 So. Riverside Drive	Feb-2003	746.2	\$ 98,280	-2.9	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 100,568	0%
30	31715 71st Street	May-2003	748.1	\$ 58,800	-4.2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 86,360	0%
31	501 So. Riverside Drive	Oct-2003	745.4	\$ 168,000	-2.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 129,181	0%
21	607 So. Riverside Drive	Sep-2004	748.3	\$ 74,970	-5.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 108,830	0%
47	31627 71st Street	Aug-2005	747.0	\$ 104,160	-3.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 140,789	0%
48	31315 77th Street	Aug-2005	746.0	\$ 95,760	-2.5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 153,438	0%
38	6913 319th Avenue	Dec-2005	747.0	\$ 71,400	-3.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,348	0%
49	31602 76th Street	Dec-2005	746.1	\$ 104,160	-2.5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 142,351	0%
26	30522 80th Street	Jun-2006	746.0	\$ 61,740	-2.6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 110,106	0%
35	7536 313th Avenue	Jun-2006	748.0	\$ 74,130	-4.2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 129,190	0%
36	511 S. Riverside Drive	Jun-2006	743.7	\$ 51,660	-0.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 59,472	0%
37	606 Wisconsin Avenue	Jun-2006	743.0	\$ 37,800	0.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 114,398	0%
40	30510 80th Street	Jun-2006	747.5	\$ 65,100	-4.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 119,470	0%
39	7600 313th Street	Aug-2006	747.0	\$ 64,680	-3.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 96,803	0%
33	31901 71st Street	Jan-2007	750.8	\$ 58,800	-6.9	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 121,564	0%
41	7962 Shorewood Drive	Mar-2007	745.0	\$ 65,520	-1.6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 140,801	0%
42	31613 71st Street	Mar-2007	748.0	\$ 107,730	-4.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 163,558	0%
50	415 S. Riverside Drive	Feb-2008	744.0	\$ 63,525	-0.7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 125,544	0%
43	7522 313th Avenue	Jun-2008	749.0	\$ 130,620	-5.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 169,787	0%
TOTAL						\$ 9,914	\$ 6,795	\$ -	\$ 20,624	\$ 37,332	\$ 6,028,187	1%

¹ Vertical datum information was not provided with the first floor elevation (FFE) information supplied by the county. Elevations were assumed to be relative to the National Geodetic Vertical Datum of 1929 (NGVD).

² Building replacement value (BRV) based on unit cost per square foot of living space for the county.

³ Project investment costs for each event only include the project costs for the buildings that were included in the analysis for that event.

Figure B.9

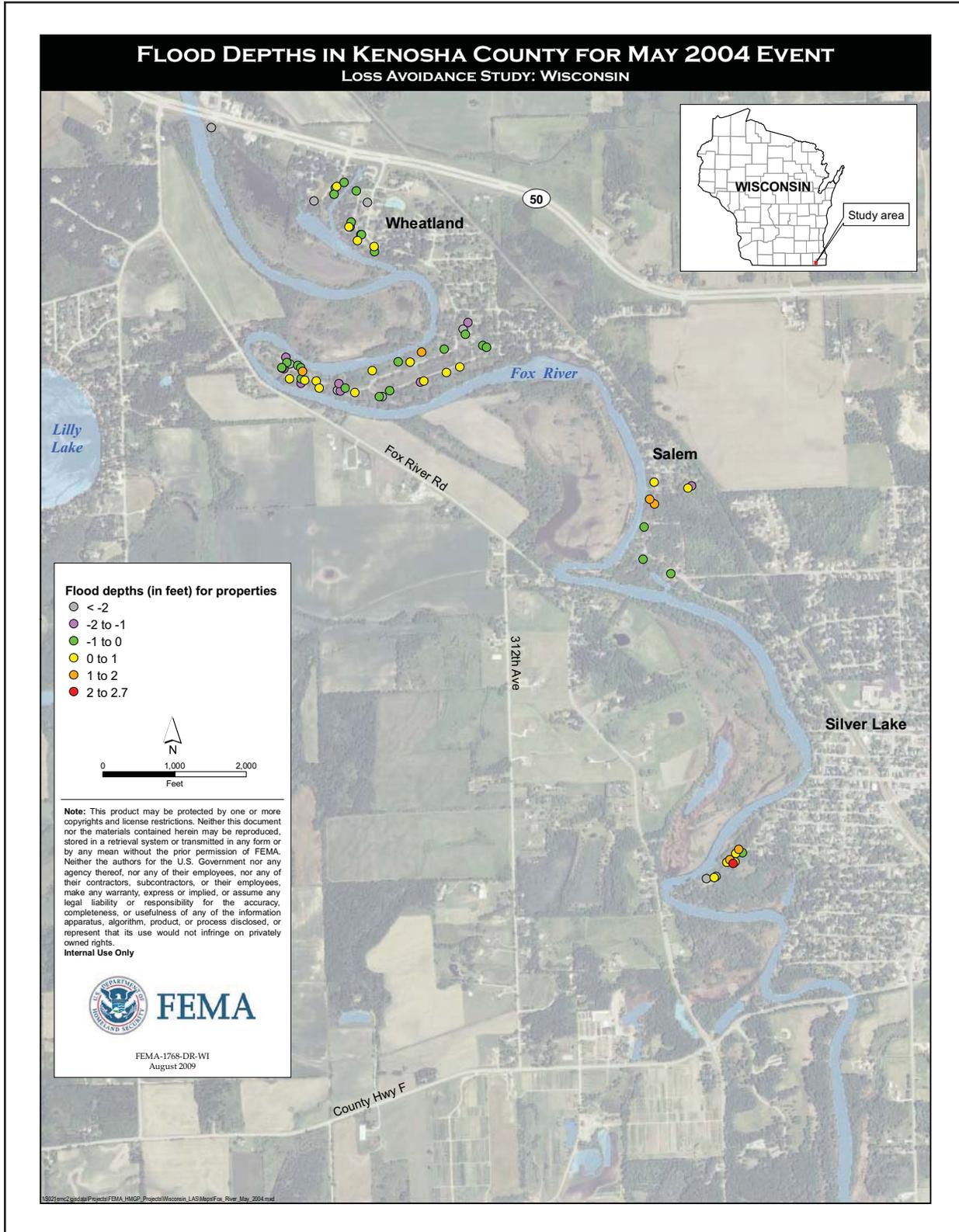


Table B.9 Part 1 of 2

LOSS ESTIMATION AND ROI CALCULATIONS FOR MAY 2004 EVENT IN KENOSHA COUNTY												
BLDG NO.	ADDRESS	ACQUISITION COMPLETION DATE	FFE (FT, NGVD) ¹	2009 BRV ²	FLOOD DEPTH (FT)	BUILDING DAMAGE	CONTENTS DAMAGE	DISPLACEMENT COSTS	DISRUPTION COSTS	TOTAL LOSSES AVOIDED	PROJECT INVESTMENT ³	RETURN ON INVESTMENT
51	32139 77th Street	Jul-1995	747.0	\$ 134,820	-0.1	\$ 16,343	\$ 10,019	\$ -	\$ 7,701	\$ 34,063	\$ 135,493	25%
52	32129 77th Street	Jul-1995	747.9	\$ 95,760	-1.0	\$ 2,332	\$ 2,239	\$ -	\$ 3,344	\$ 7,915	\$ 121,895	6%
53	437 S. Riverside Drive	Jul-1995	744.0	\$ 85,680	1.8	\$ 25,760	\$ 14,426	\$ 3,075	\$ 15,771	\$ 59,032	\$ 121,453	49%
54	601 S. Riverside Drive	Jul-1995	749.0	\$ 107,835	-3.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 123,925	0%
55	8106 Shorewood Drive	Jul-1995	746.7	\$ 95,760	-0.5	\$ 8,007	\$ 5,234	\$ -	\$ 6,010	\$ 19,251	\$ 127,728	15%
56	31524 76th Street	Sep-1995	745.1	\$ 70,560	1.7	\$ 20,624	\$ 11,571	\$ 2,396	\$ 15,395	\$ 49,986	\$ 116,379	43%
57	31217 77th Street	Feb-1996	747.0	\$ 75,600	-0.3	\$ 7,467	\$ 4,731	\$ -	\$ 6,691	\$ 18,889	\$ 124,635	15%
58	32041 77th Street	Feb-1996	750.7	\$ 87,360	-3.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 117,107	0%
60	419 S. Riverside Drive	Oct-1996	745.0	\$ 78,750	0.8	\$ 10,918	\$ 6,191	\$ 1,236	\$ 8,484	\$ 26,829	\$ 7,841	342%
59	32104 77th Street	Nov-1996	748.0	\$ 176,190	-1.1	\$ 4,766	\$ 1,589	\$ -	\$ 3,465	\$ 9,819	\$ 185,843	5%
61	32028 77th Street	Apr-1997	747.0	\$ 89,880	-0.1	\$ 10,828	\$ 6,645	\$ -	\$ 7,667	\$ 25,140	\$ 136,601	18%
62	31628 76th Street	Dec-1998	747.7	\$ 106,680	-1.0	\$ 3,099	\$ 2,786	\$ -	\$ 3,555	\$ 9,440	\$ 137,189	7%
63	32029 77th Street	Dec-1998	746.6	\$ 79,800	0.2	\$ 12,606	\$ 7,468	\$ 392	\$ 9,354	\$ 29,820	\$ 100,017	30%
64	32018 77th Street	Dec-1998	747.5	\$ 82,320	-0.6	\$ 5,350	\$ 3,697	\$ -	\$ 5,172	\$ 14,220	\$ 116,767	12%
65	31710 77th Street	Jan-1999	746.4	\$ 107,100	0.4	\$ 12,219	\$ 6,771	\$ 777	\$ 7,380	\$ 27,147	\$ 139,792	19%
66	32143 77th Street	Mar-1999	747.0	\$ 145,530	-0.1	\$ 12,434	\$ 6,578	\$ -	\$ 6,092	\$ 25,104	\$ 58,179	43%
11	32132 77th Street	Dec-1999	747.0	\$ 84,000	-0.1	\$ 10,233	\$ 6,269	\$ -	\$ 7,728	\$ 24,230	\$ 90,458	27%
44	31422 76th Street	Dec-1999	746.8	\$ 94,500	0.0	\$ 12,540	\$ 7,590	\$ -	\$ 8,217	\$ 28,348	\$ 117,619	24%
45	32034 77th Street	Dec-1999	745.5	\$ 121,800	1.4	\$ 32,180	\$ 18,186	\$ 3,347	\$ 14,131	\$ 67,844	\$ 133,352	51%
12	31823 77th Street	Dec-1999	749.0	\$ 102,900	-2.2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 116,432	0%
68	32015 77th Street	Dec-1999	748.5	\$ 121,590	-1.7	\$ 18,977	\$ 13,826	\$ -	\$ 9,268	\$ 42,072	\$ 136,982	31%
67	31917 77th Street	Jan-2000	746.1	\$ 68,355	0.7	\$ 13,856	\$ 8,004	\$ 963	\$ 11,366	\$ 34,188	\$ 30,097	114%
8	31805 71st Street	Jun-2000	748.0	\$ 133,980	-0.9	\$ 5,130	\$ 4,147	\$ -	\$ 3,971	\$ 13,248	\$ 203,279	7%
16	31811 71st Street	Jun-2000	746.5	\$ 63,000	0.6	\$ 12,323	\$ 7,141	\$ 795	\$ 11,046	\$ 31,306	\$ 93,912	33%
17	31519 77th Street	Jun-2000	745.8	\$ 58,800	0.8	\$ 12,679	\$ 7,284	\$ 984	\$ 11,947	\$ 32,895	\$ 105,167	31%
18	6929 319th Avenue	Jun-2000	747.5	\$ 73,500	-0.4	\$ 6,951	\$ 4,438	\$ -	\$ 6,502	\$ 17,892	\$ 98,058	18%
69	6921 319th Avenue	Jun-2000	748.0	\$ 103,320	-0.9	\$ 4,124	\$ 3,286	\$ -	\$ 4,044	\$ 11,454	\$ 108,859	11%
73	441 S. Riverside Drive	Jun-2000	745.0	\$ 105,840	0.8	\$ 14,626	\$ 8,291	\$ 1,645	\$ 8,464	\$ 33,025	\$ 131,060	25%
10	31638 76th Street	Jul-2000	747.6	\$ 150,570	-0.9	\$ 5,036	\$ 1,835	\$ -	\$ 3,753	\$ 10,624	\$ 166,468	6%
14	8153 Shorewood Drive	Jul-2000	746.5	\$ 78,750	-0.3	\$ 5,698	\$ 2,906	\$ -	\$ 5,503	\$ 14,107	\$ 115,113	12%
70	31214 77th Street	Sep-2000	747.0	\$ 98,280	-0.4	\$ 9,396	\$ 5,987	\$ -	\$ 6,549	\$ 21,933	\$ 75,177	29%
1	6712 Wheatland Road	Dec-2000	750.5	\$ 64,680	-3.2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 122,709	0%
71	6905 319th Avenue	Dec-2000	748.0	\$ 138,915	-0.9	\$ 5,552	\$ 4,421	\$ -	\$ 4,046	\$ 14,019	\$ 136,356	10%
72	31705 71st Street	Jan-2001	747.0	\$ 78,960	0.1	\$ 11,360	\$ 6,805	\$ 160	\$ 8,720	\$ 27,045	\$ 96,381	28%
29	31822 71st Street	Sep-2001	748.0	\$ 139,125	-0.9	\$ 5,340	\$ 4,313	\$ -	\$ 3,975	\$ 13,627	\$ 146,597	9%
2	31809 77th Street	Oct-2001	748.0	\$ 81,480	-1.3	\$ 1,517	\$ 1,456	\$ -	\$ 3,086	\$ 6,059	\$ 34,954	17%
4	31733 77th Street	Oct-2001	746.0	\$ 98,070	0.7	\$ 20,024	\$ 11,559	\$ 1,411	\$ 11,432	\$ 44,426	\$ 35,951	124%
5	31826 77th Street	Oct-2001	748.5	\$ 97,860	-1.7	\$ 649	\$ 623	\$ -	\$ 2,547	\$ 3,818	\$ 99,666	4%
7	31911 77th Street	Oct-2001	746.5	\$ 75,810	0.3	\$ 12,489	\$ 7,365	\$ 478	\$ 9,658	\$ 29,989	\$ 83,304	36%
9	32114 77th Street	Oct-2001	749.5	\$ 75,600	-2.6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 103,368	0%
28	31711 71st Street	Oct-2001	748.0	\$ 60,060	-0.9	\$ 2,172	\$ 1,792	\$ -	\$ 3,875	\$ 7,839	\$ 113,134	7%

Table B.9 Part 2 of 2

LOSS ESTIMATION AND ROI CALCULATIONS FOR MAY 2004 EVENT IN KENOSHA COUNTY												
BLDG NO.	ADDRESS	ACQUISITION COMPLETION DATE	FFE (FT, NGVD) ¹	2009 BRV ²	FLOOD DEPTH (FT)	BUILDING DAMAGE	CONTENTS DAMAGE	DISPLACEMENT COSTS	DISRUPTION COSTS	TOTAL LOSSES AVOIDED	PROJECT INVESTMENT ³	RETURN ON INVESTMENT
23	6940 317th Avenue	Feb-2002	750.0	\$ 58,800	-2.9	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 130,769	0%
15	8200 No. Riverside Drive	Sep-2002	746.8	\$ 63,000	-0.7	\$ 3,385	\$ 2,458	\$ -	\$ 4,665	\$ 10,508	\$ 130,863	8%
3	31417 77th Street	Oct-2002	746.0	\$ 104,160	0.6	\$ 19,947	\$ 11,583	\$ 1,228	\$ 10,862	\$ 43,620	\$ 114,648	38%
13	32005 77th Street	Oct-2002	746.5	\$ 75,600	0.3	\$ 12,545	\$ 7,392	\$ 495	\$ 9,712	\$ 30,144	\$ 119,677	25%
19	8032 Shorewood Drive	Oct-2002	745.0	\$ 95,760	1.2	\$ 24,407	\$ 13,831	\$ 2,426	\$ 13,712	\$ 54,376	\$ 133,702	41%
24	31701 77th Street	Oct-2002	748.7	\$ 79,800	-2.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 82,325	0%
25	6912 318th Avenue	Oct-2002	748.0	\$ 58,800	-0.9	\$ 2,309	\$ 1,850	\$ -	\$ 4,015	\$ 8,175	\$ 87,774	9%
20	31533 77th Street	Oct-2002	748.5	\$ 56,070	-1.9	\$ 176	\$ 169	\$ -	\$ 2,390	\$ 2,734	\$ 42,029	7%
32	31709 77th Street	Jan-2003	747.6	\$ 67,200	-1.0	\$ 2,033	\$ 1,797	\$ -	\$ 3,610	\$ 7,440	\$ 80,759	9%
34	7956 Shorewood Drive	Jan-2003	746.0	\$ 63,525	0.3	\$ 10,140	\$ 6,001	\$ 334	\$ 9,428	\$ 25,903	\$ 111,428	23%
22	445 So. Riverside Drive	Feb-2003	746.2	\$ 98,280	-0.4	\$ 8,614	\$ 5,578	\$ -	\$ 6,191	\$ 20,383	\$ 100,568	20%
30	31715 71st Street	May-2003	748.1	\$ 58,800	-1.0	\$ 1,491	\$ 1,422	\$ -	\$ 3,389	\$ 6,302	\$ 86,360	7%
31	501 So. Riverside Drive	Oct-2003	745.4	\$ 168,000	0.4	\$ 19,258	\$ 10,679	\$ 1,250	\$ 7,405	\$ 38,592	\$ 129,181	30%
21	607 So. Riverside Drive	Sep-2004	748.3	\$ 74,970	-2.5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 108,830	0%
47	31627 71st Street	Aug-2005	747.0	\$ 104,160	0.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 140,789	0%
48	31315 77th Street	Aug-2005	746.0	\$ 95,760	0.6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 153,438	0%
38	6913 319th Avenue	Dec-2005	747.0	\$ 71,400	0.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,348	0%
49	31602 76th Street	Dec-2005	746.1	\$ 104,160	0.6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 142,351	0%
26	30522 80th Street	Jun-2006	746.0	\$ 61,740	0.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 110,106	0%
35	7536 313th Avenue	Jun-2006	748.0	\$ 74,130	-1.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 129,190	0%
36	511 S. Riverside Drive	Jun-2006	743.7	\$ 51,660	2.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 59,472	0%
37	606 Wisconsin Avenue	Jun-2006	743.0	\$ 37,800	2.7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 114,398	0%
40	30510 80th Street	Jun-2006	747.5	\$ 65,100	-1.2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 119,470	0%
39	7600 313th Street	Aug-2006	747.0	\$ 64,680	-0.2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 96,803	0%
33	31901 71st Street	Jan-2007	750.8	\$ 58,800	-3.7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 121,564	0%
41	7962 Shorewood Drive	Mar-2007	745.0	\$ 65,520	1.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 140,801	0%
42	31613 71st Street	Mar-2007	748.0	\$ 107,730	-0.9	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 163,558	0%
50	415 S. Riverside Drive	Feb-2008	744.0	\$ 63,525	1.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 125,544	0%
43	7522 313th Avenue	Jun-2008	749.0	\$ 130,620	-2.2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 169,787	0%
TOTAL						\$ 509,699	\$ 308,143	\$ 25,480	\$ 361,724	\$ 1,205,046	\$ 6,243,728	19%

¹ Vertical datum information was not provided with the first floor elevation (FFE) information supplied by the county. Elevations were assumed to be relative to the National Geodetic Vertical Datum of 1929 (NGVD).

² Building replacement value (BRV) based on unit cost per square foot of living space for the county.

³ Project investment costs for each event only include the project costs for the buildings that were included in the analysis for that event.

Figure B.10

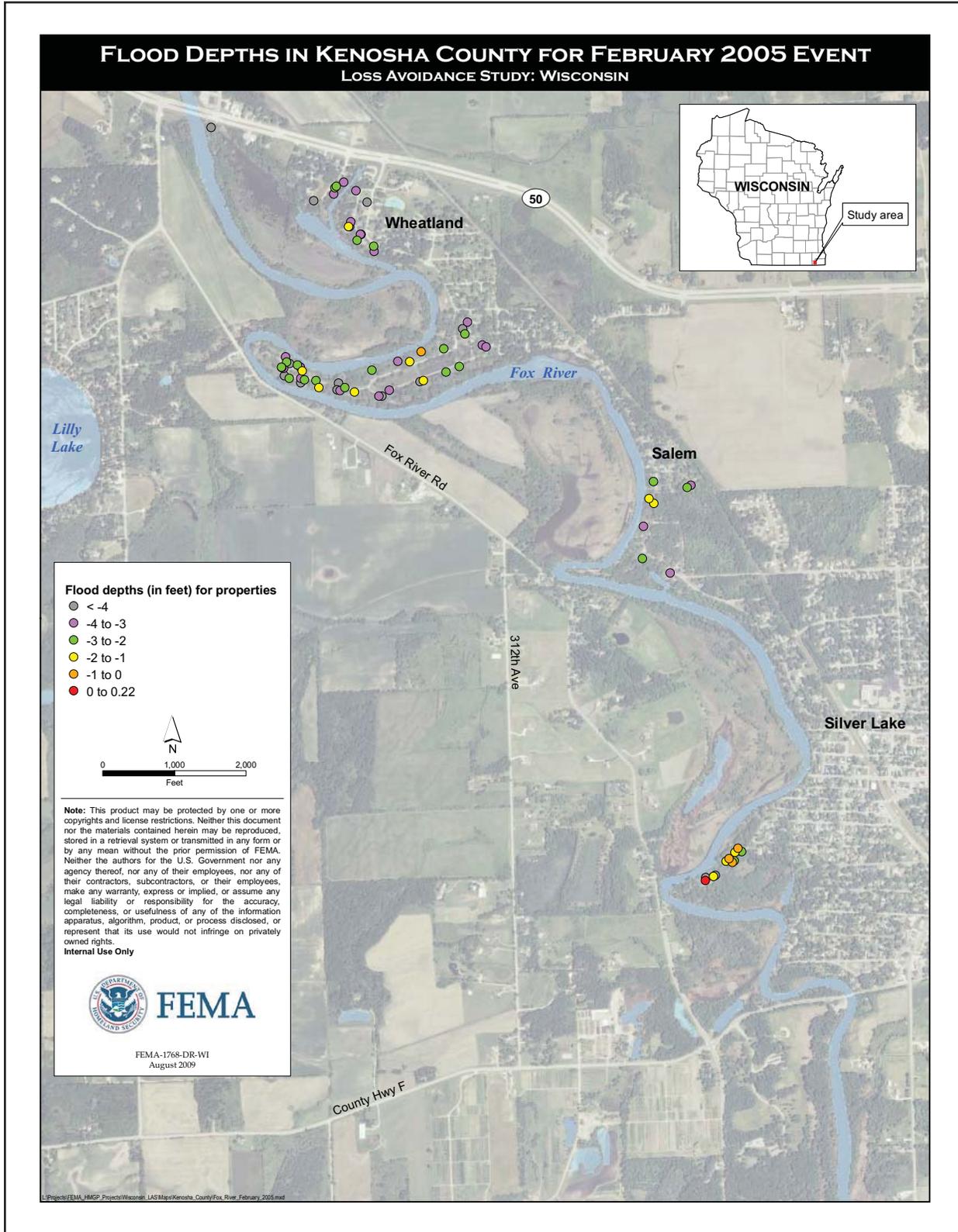


Table B.10 Part 1 of 2

LOSS ESTIMATION AND ROI CALCULATIONS FOR FEBRUARY 2005 EVENT IN KENOSHA COUNTY												
BLDG NO.	ADDRESS	ACQUISITION COMPLETION DATE	FFE (FT, NGVD) ¹	2009 BRV ²	FLOOD DEPTH (FT)	BUILDING DAMAGE	CONTENTS DAMAGE	DISPLACEMENT COSTS	DISRUPTION COSTS	TOTAL LOSSES AVOIDED	PROJECT INVESTMENT ³	RETURN ON INVESTMENT
51	32139 77th Street	Jul-1995	747.0	\$ 134,820	-2.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 135,493	0%
52	32129 77th Street	Jul-1995	747.9	\$ 95,760	-3.7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 121,895	0%
53	437 S. Riverside Drive	Jul-1995	744.0	\$ 85,680	-0.8	\$ 4,189	\$ 3,127	\$ -	\$ 4,448	\$ 11,763	\$ 121,453	10%
54	601 S. Riverside Drive	Jul-1995	749.0	\$ 107,835	-5.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 123,925	0%
55	8106 Shorewood Drive	Jul-1995	746.7	\$ 95,760	-3.2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 127,728	0%
56	31524 76th Street	Sep-1995	745.1	\$ 70,560	-1.0	\$ 1,699	\$ 1,631	\$ -	\$ 3,332	\$ 6,662	\$ 116,379	6%
57	31217 77th Street	Feb-1996	747.0	\$ 75,600	-3.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 124,635	0%
58	32041 77th Street	Feb-1996	750.7	\$ 87,360	-6.5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 117,107	0%
60	419 S. Riverside Drive	Oct-1996	745.0	\$ 78,750	-1.8	\$ 525	\$ 175	\$ -	\$ 2,549	\$ 3,249	\$ 7,841	41%
59	32104 77th Street	Nov-1996	748.0	\$ 176,190	-3.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 185,843	0%
61	32028 77th Street	Apr-1997	747.0	\$ 89,880	-2.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 136,601	0%
62	31628 76th Street	Dec-1998	747.7	\$ 106,680	-3.7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 137,189	0%
63	32029 77th Street	Dec-1998	746.6	\$ 79,800	-2.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 100,017	0%
64	32018 77th Street	Dec-1998	747.5	\$ 82,320	-3.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 116,767	0%
65	31710 77th Street	Jan-1999	746.4	\$ 107,100	-2.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 139,792	0%
66	32143 77th Street	Mar-1999	747.0	\$ 145,530	-2.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 58,179	0%
11	32132 77th Street	Dec-1999	747.0	\$ 84,000	-2.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 90,458	0%
44	31422 76th Street	Dec-1999	746.8	\$ 94,500	-2.7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 117,619	0%
45	32034 77th Street	Dec-1999	745.5	\$ 121,800	-1.3	\$ 2,070	\$ 1,987	\$ -	\$ 3,013	\$ 7,071	\$ 133,352	5%
12	31823 77th Street	Dec-1999	749.0	\$ 102,900	-5.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 116,432	0%
68	32015 77th Street	Dec-1999	748.5	\$ 121,590	-4.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 136,982	0%
67	31917 77th Street	Jan-2000	746.1	\$ 68,355	-2.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 30,097	0%
8	31805 71st Street	Jun-2000	748.0	\$ 133,980	-3.5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 203,279	0%
16	31811 71st Street	Jun-2000	746.5	\$ 63,000	-2.0	\$ 65	\$ 63	\$ -	\$ 2,295	\$ 2,423	\$ 93,912	3%
17	31519 77th Street	Jun-2000	745.8	\$ 58,800	-1.9	\$ 86	\$ 82	\$ -	\$ 2,314	\$ 2,482	\$ 105,167	2%
18	6929 319th Avenue	Jun-2000	747.5	\$ 73,500	-2.9	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 98,058	0%
69	6921 319th Avenue	Jun-2000	748.0	\$ 103,320	-3.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 108,859	0%
73	441 S. Riverside Drive	Jun-2000	745.0	\$ 105,840	-1.8	\$ 689	\$ 230	\$ -	\$ 2,541	\$ 3,460	\$ 131,060	3%
10	31638 76th Street	Jul-2000	747.6	\$ 150,570	-3.7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 166,468	0%
14	8153 Shorewood Drive	Jul-2000	746.5	\$ 78,750	-3.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 115,113	0%
70	31214 77th Street	Sep-2000	747.0	\$ 98,280	-3.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 75,177	0%
1	6712 Wheatland Road	Dec-2000	750.5	\$ 64,680	-5.9	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 122,709	0%
71	6905 319th Avenue	Dec-2000	748.0	\$ 138,915	-3.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 136,356	0%
72	31705 71st Street	Jan-2001	747.0	\$ 78,960	-2.5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 96,381	0%
29	31822 71st Street	Sep-2001	748.0	\$ 139,125	-3.5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 146,597	0%
2	31809 77th Street	Oct-2001	748.0	\$ 81,480	-4.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 34,954	0%
4	31733 77th Street	Oct-2001	746.0	\$ 98,070	-2.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 35,951	0%
5	31826 77th Street	Oct-2001	748.5	\$ 97,860	-4.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 99,666	0%
7	31911 77th Street	Oct-2001	746.5	\$ 75,810	-2.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 83,304	0%
9	32114 77th Street	Oct-2001	749.5	\$ 75,600	-5.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 103,368	0%
28	31711 71st Street	Oct-2001	748.0	\$ 60,060	-3.5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 113,134	0%

Table B.10 Part 2 of 2

LOSS ESTIMATION AND ROI CALCULATIONS FOR FEBRUARY 2005 EVENT IN KENOSHA COUNTY												
BLDG NO.	ADDRESS	ACQUISITION COMPLETION DATE	FFE (FT, NGVD) ¹	2009 BRV ²	FLOOD DEPTH (FT)	BUILDING DAMAGE	CONTENTS DAMAGE	DISPLACEMENT COSTS	DISRUPTION COSTS	TOTAL LOSSES AVOIDED	PROJECT INVESTMENT ³	RETURN ON INVESTMENT
23	6940 317th Avenue	Feb-2002	750.0	\$ 58,800	-5.5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 130,769	0%
15	8200 No. Riverside Drive	Sep-2002	746.8	\$ 63,000	-3.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 130,863	0%
3	31417 77th Street	Oct-2002	746.0	\$ 104,160	-2.2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 114,648	0%
13	32005 77th Street	Oct-2002	746.5	\$ 75,600	-2.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 119,677	0%
19	8032 Shorewood Drive	Oct-2002	745.0	\$ 95,760	-1.5	\$ 1,301	\$ 1,249	\$ -	\$ 2,860	\$ 5,409	\$ 133,702	4%
24	31701 77th Street	Oct-2002	748.7	\$ 79,800	-4.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 82,325	0%
25	6912 318th Avenue	Oct-2002	748.0	\$ 58,800	-3.5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 87,774	0%
20	31533 77th Street	Oct-2002	748.5	\$ 56,070	-4.6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 42,029	0%
32	31709 77th Street	Jan-2003	747.6	\$ 67,200	-3.7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 80,759	0%
34	7956 Shorewood Drive	Jan-2003	746.0	\$ 63,525	-2.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 111,428	0%
22	445 So. Riverside Drive	Feb-2003	746.2	\$ 98,280	-3.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 100,568	0%
30	31715 71st Street	May-2003	748.1	\$ 58,800	-3.6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 86,360	0%
31	501 So. Riverside Drive	Oct-2003	745.4	\$ 168,000	-2.2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 129,181	0%
21	607 So. Riverside Drive	Sep-2004	748.3	\$ 74,970	-5.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 108,830	0%
47	31627 71st Street	Aug-2005	747.0	\$ 104,160	-2.5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 140,789	0%
48	31315 77th Street	Aug-2005	746.0	\$ 95,760	-2.2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 153,438	0%
38	6913 319th Avenue	Dec-2005	747.0	\$ 71,400	-2.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,348	0%
49	31602 76th Street	Dec-2005	746.1	\$ 104,160	-2.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 142,351	0%
26	30522 80th Street	Jun-2006	746.0	\$ 61,740	-2.5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 110,106	0%
35	7536 313th Avenue	Jun-2006	748.0	\$ 74,130	-3.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 129,190	0%
36	511 S. Riverside Drive	Jun-2006	743.7	\$ 51,660	-0.5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 59,472	0%
37	606 Wisconsin Avenue	Jun-2006	743.0	\$ 37,800	0.2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 114,398	0%
40	30510 80th Street	Jun-2006	747.5	\$ 65,100	-4.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 119,470	0%
39	7600 313th Street	Aug-2006	747.0	\$ 64,680	-2.9	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 96,803	0%
33	31901 71st Street	Jan-2007	750.8	\$ 58,800	-6.2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 121,564	0%
41	7962 Shorewood Drive	Mar-2007	745.0	\$ 65,520	-1.5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 140,801	0%
42	31613 71st Street	Mar-2007	748.0	\$ 107,730	-3.5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 163,558	0%
50	415 S. Riverside Drive	Feb-2008	744.0	\$ 63,525	-0.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 125,544	0%
43	7522 313th Avenue	Jun-2008	749.0	\$ 130,620	-4.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 169,787	0%
TOTAL						\$ 11,468	\$ 8,825	\$ -	\$ 25,877	\$ 46,169	\$ 6,352,558	1%

¹ Vertical datum information was not provided with the first floor elevation (FFE) information supplied by the county. Elevations were assumed to be relative to the National Geodetic Vertical Datum of 1929 (NGVD).

² Building replacement value (BRV) based on unit cost per square foot of living space for the county.

³ Project investment costs for each event only include the project costs for the buildings that were included in the analysis for that event.

Figure B.11

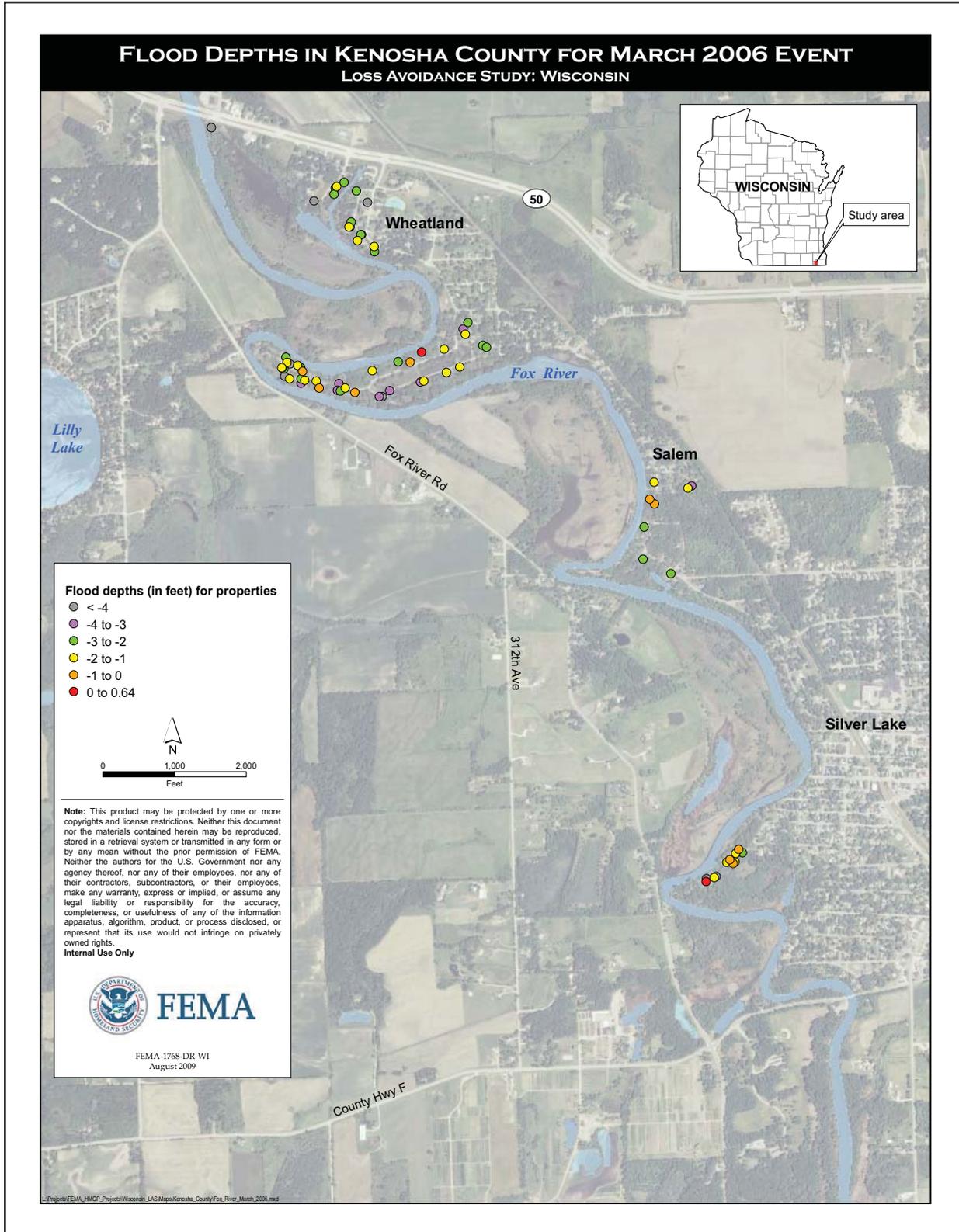


Table B.11 Part 1 of 2

LOSS ESTIMATION AND ROI CALCULATIONS FOR MARCH 2006 EVENT IN KENOSHA COUNTY												
BLDG NO.	ADDRESS	ACQUISITION COMPLETION DATE	FFE (FT, NGVD) ¹	2009 BRV ²	FLOOD DEPTH (FT)	BUILDING DAMAGE	CONTENTS DAMAGE	DISPLACEMENT COSTS	DISRUPTION COSTS	TOTAL LOSSES AVOIDED	PROJECT INVESTMENT ³	RETURN ON INVESTMENT
51	32139 77th Street	Jul-1995	747.0	\$ 134,820	-2.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 135,493	0%
52	32129 77th Street	Jul-1995	747.9	\$ 95,760	-2.9	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 121,895	0%
53	437 S. Riverside Drive	Jul-1995	744.0	\$ 85,680	-0.4	\$ 8,107	\$ 5,176	\$ -	\$ 6,504	\$ 19,787	\$ 121,453	16%
54	601 S. Riverside Drive	Jul-1995	749.0	\$ 107,835	-5.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 123,925	0%
55	8106 Shorewood Drive	Jul-1995	746.7	\$ 95,760	-2.6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 127,728	0%
56	31524 76th Street	Sep-1995	745.1	\$ 70,560	-0.3	\$ 7,141	\$ 4,505	\$ -	\$ 6,801	\$ 18,447	\$ 116,379	16%
57	31217 77th Street	Feb-1996	747.0	\$ 75,600	-2.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 124,635	0%
58	32041 77th Street	Feb-1996	750.7	\$ 87,360	-5.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 117,107	0%
60	419 S. Riverside Drive	Oct-1996	745.0	\$ 78,750	-1.4	\$ 1,520	\$ 507	\$ -	\$ 3,117	\$ 5,144	\$ 7,841	66%
59	32104 77th Street	Nov-1996	748.0	\$ 176,190	-3.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 185,843	0%
61	32028 77th Street	Apr-1997	747.0	\$ 89,880	-2.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 136,601	0%
62	31628 76th Street	Dec-1998	747.7	\$ 106,680	-3.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 137,189	0%
63	32029 77th Street	Dec-1998	746.6	\$ 79,800	-1.7	\$ 621	\$ 596	\$ -	\$ 2,599	\$ 3,816	\$ 100,017	4%
64	32018 77th Street	Dec-1998	747.5	\$ 82,320	-2.5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 116,767	0%
65	31710 77th Street	Jan-1999	746.4	\$ 107,100	-1.6	\$ 1,197	\$ 399	\$ -	\$ 2,751	\$ 4,347	\$ 139,792	3%
66	32143 77th Street	Mar-1999	747.0	\$ 145,530	-2.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 58,179	0%
11	32132 77th Street	Dec-1999	747.0	\$ 84,000	-2.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 90,458	0%
44	31422 76th Street	Dec-1999	746.8	\$ 94,500	-2.0	\$ 54	\$ 52	\$ -	\$ 2,274	\$ 2,380	\$ 117,619	2%
45	32034 77th Street	Dec-1999	745.5	\$ 121,800	-0.6	\$ 8,775	\$ 5,920	\$ -	\$ 5,489	\$ 20,184	\$ 133,352	15%
12	31823 77th Street	Dec-1999	749.0	\$ 102,900	-4.2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 116,432	0%
68	32015 77th Street	Dec-1999	748.5	\$ 121,590	-3.6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 136,982	0%
67	31917 77th Street	Jan-2000	746.1	\$ 68,355	-1.3	\$ 1,252	\$ 1,202	\$ -	\$ 3,072	\$ 5,525	\$ 30,097	18%
8	31805 71st Street	Jun-2000	748.0	\$ 133,980	-2.7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 203,279	0%
16	31811 71st Street	Jun-2000	746.5	\$ 63,000	-1.2	\$ 1,326	\$ 1,273	\$ -	\$ 3,196	\$ 5,796	\$ 93,912	6%
17	31519 77th Street	Jun-2000	745.8	\$ 58,800	-1.2	\$ 1,119	\$ 1,074	\$ -	\$ 3,105	\$ 5,297	\$ 105,167	5%
18	6929 319th Avenue	Jun-2000	747.5	\$ 73,500	-2.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 98,058	0%
69	6921 319th Avenue	Jun-2000	748.0	\$ 103,320	-2.6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 108,859	0%
73	441 S. Riverside Drive	Jun-2000	745.0	\$ 105,840	-1.4	\$ 2,017	\$ 672	\$ -	\$ 3,106	\$ 5,796	\$ 131,060	4%
10	31638 76th Street	Jul-2000	747.6	\$ 150,570	-3.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 166,468	0%
14	8153 Shorewood Drive	Jul-2000	746.5	\$ 78,750	-2.5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 115,113	0%
70	31214 77th Street	Sep-2000	747.0	\$ 98,280	-2.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 75,177	0%
1	6712 Wheatland Road	Dec-2000	750.5	\$ 64,680	-5.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 122,709	0%
71	6905 319th Avenue	Dec-2000	748.0	\$ 138,915	-2.6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 136,356	0%
72	31705 71st Street	Jan-2001	747.0	\$ 78,960	-1.7	\$ 621	\$ 596	\$ -	\$ 2,603	\$ 3,820	\$ 96,381	4%
29	31822 71st Street	Sep-2001	748.0	\$ 139,125	-2.7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 146,597	0%
2	31809 77th Street	Oct-2001	748.0	\$ 81,480	-3.2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 34,954	0%
4	31733 77th Street	Oct-2001	746.0	\$ 98,070	-1.3	\$ 1,699	\$ 1,631	\$ -	\$ 3,028	\$ 6,358	\$ 35,951	18%
5	31826 77th Street	Oct-2001	748.5	\$ 97,860	-3.7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 99,666	0%
7	31911 77th Street	Oct-2001	746.5	\$ 75,810	-1.6	\$ 681	\$ 654	\$ -	\$ 2,653	\$ 3,988	\$ 83,304	5%
9	32114 77th Street	Oct-2001	749.5	\$ 75,600	-4.5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 103,368	0%
28	31711 71st Street	Oct-2001	748.0	\$ 60,060	-2.7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 113,134	0%

Table B.11 Part 2 of 2

Loss Estimation and ROI Calculations for March 2006 Event in Kenosha County												
BLDG NO.	ADDRESS	ACQUISITION COMPLETION DATE	FFE (FT, NGVD) ¹	2009 BRV ²	FLOOD DEPTH (FT)	BUILDING DAMAGE	CONTENTS DAMAGE	DISPLACEMENT COSTS	DISRUPTION COSTS	TOTAL LOSSES AVOIDED	PROJECT INVESTMENT ³	RETURN ON INVESTMENT
23	6940 317th Avenue	Feb-2002	750.0	\$ 58,800	-4.7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 130,769	0%
15	8200 No. Riverside Drive	Sep-2002	746.8	\$ 63,000	-2.9	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 130,863	0%
3	31417 77th Street	Oct-2002	746.0	\$ 104,160	-1.5	\$ 1,321	\$ 1,268	\$ -	\$ 2,819	\$ 5,408	\$ 114,648	5%
13	32005 77th Street	Oct-2002	746.5	\$ 75,600	-1.6	\$ 717	\$ 688	\$ -	\$ 2,675	\$ 4,080	\$ 119,677	3%
19	8032 Shorewood Drive	Oct-2002	745.0	\$ 95,760	-0.9	\$ 3,625	\$ 2,942	\$ -	\$ 3,951	\$ 10,518	\$ 133,702	8%
24	31701 77th Street	Oct-2002	748.7	\$ 79,800	-4.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 82,325	0%
25	6912 318th Avenue	Oct-2002	748.0	\$ 58,800	-2.6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 87,774	0%
20	31533 77th Street	Oct-2002	748.5	\$ 56,070	-3.9	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 42,029	0%
32	31709 77th Street	Jan-2003	747.6	\$ 67,200	-3.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 80,759	0%
34	7956 Shorewood Drive	Jan-2003	746.0	\$ 63,525	-1.9	\$ 212	\$ 203	\$ -	\$ 2,399	\$ 2,813	\$ 111,428	3%
22	445 So. Riverside Drive	Feb-2003	746.2	\$ 98,280	-2.6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 100,568	0%
30	31715 71st Street	May-2003	748.1	\$ 58,800	-2.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 86,360	0%
31	501 So. Riverside Drive	Oct-2003	745.4	\$ 168,000	-1.8	\$ 1,191	\$ 397	\$ -	\$ 2,568	\$ 4,155	\$ 129,181	3%
21	607 So. Riverside Drive	Sep-2004	748.3	\$ 74,970	-4.7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 108,830	0%
47	31627 71st Street	Aug-2005	747.0	\$ 104,160	-1.7	\$ 743	\$ 713	\$ -	\$ 2,570	\$ 4,025	\$ 140,789	3%
48	31315 77th Street	Aug-2005	746.0	\$ 95,760	-1.5	\$ 1,212	\$ 1,163	\$ -	\$ 2,818	\$ 5,193	\$ 153,438	3%
38	6913 319th Avenue	Dec-2005	747.0	\$ 71,400	-1.6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,348	0%
49	31602 76th Street	Dec-2005	746.1	\$ 104,160	-1.4	\$ 1,617	\$ 1,552	\$ -	\$ 2,947	\$ 6,115	\$ 142,351	4%
26	30522 80th Street	Jun-2006	746.0	\$ 61,740	-1.9	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 110,106	0%
35	7536 313th Avenue	Jun-2006	748.0	\$ 74,130	-3.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 129,190	0%
36	511 S. Riverside Drive	Jun-2006	743.7	\$ 51,660	-0.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 59,472	0%
37	606 Wisconsin Avenue	Jun-2006	743.0	\$ 37,800	0.6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 114,398	0%
40	30510 80th Street	Jun-2006	747.5	\$ 65,100	-3.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 119,470	0%
39	7600 313th Street	Aug-2006	747.0	\$ 64,680	-2.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 96,803	0%
33	31901 71st Street	Jan-2007	750.8	\$ 58,800	-5.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 121,564	0%
41	7962 Shorewood Drive	Mar-2007	745.0	\$ 65,520	-0.9	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 140,801	0%
42	31613 71st Street	Mar-2007	748.0	\$ 107,730	-2.7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 163,558	0%
50	415 S. Riverside Drive	Feb-2008	744.0	\$ 63,525	-0.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 125,544	0%
43	7522 313th Avenue	Jun-2008	749.0	\$ 130,620	-4.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 169,787	0%
TOTAL						\$ 49,311	\$ 34,031	\$ -	\$ 76,126	\$ 159,468	\$ 6,790,484	2%

¹ Vertical datum information was not provided with the first floor elevation (FFE) information supplied by the county. Elevations were assumed to be relative to the National Geodetic Vertical Datum of 1929 (NGVD).

² Building replacement value (BRV) based on unit cost per square foot of living space for the county.

³ Project investment costs for each event only include the project costs for the buildings that were included in the analysis for that event.

Figure B.12

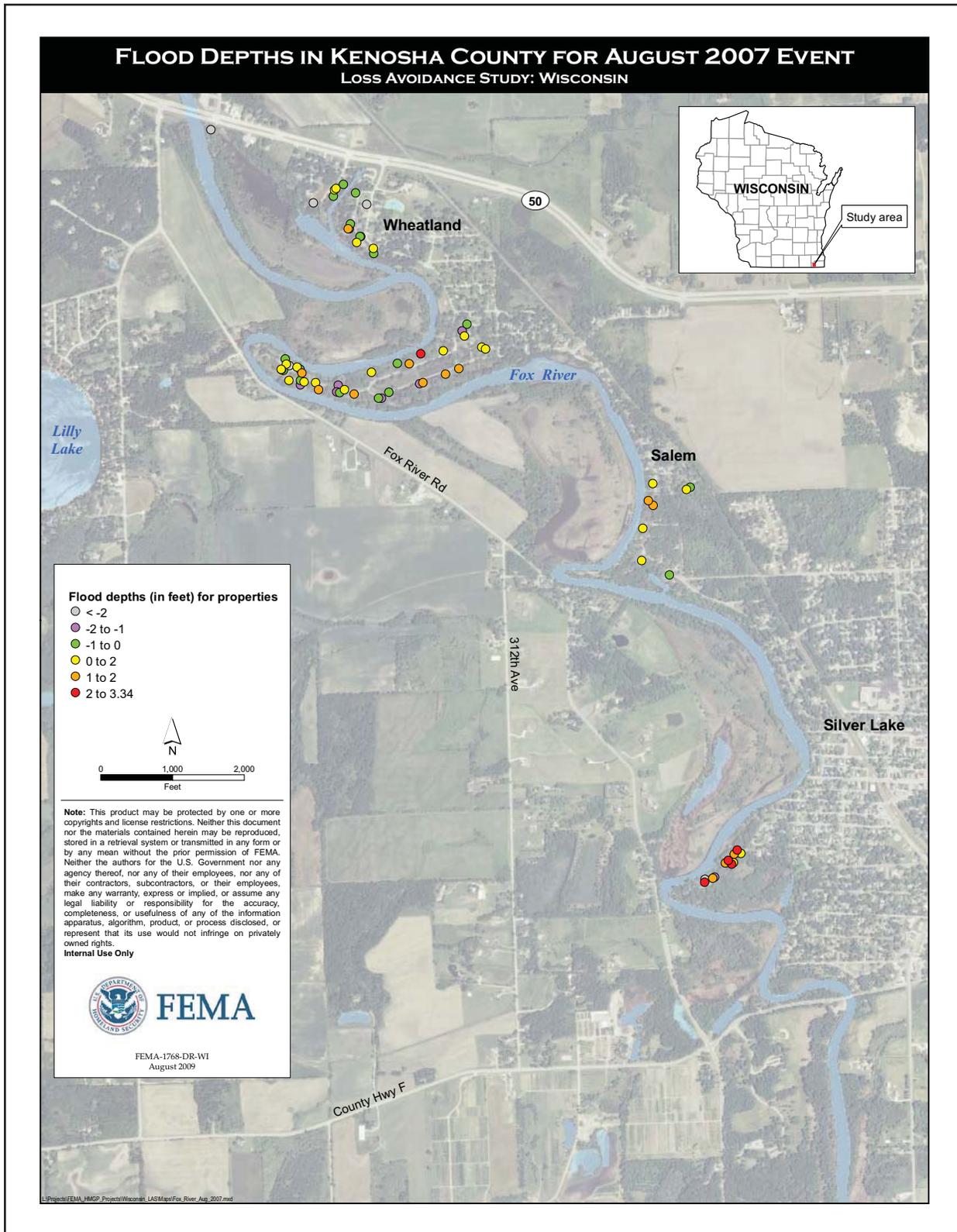


Table B.12 Part 1 of 2

LOSS ESTIMATION AND ROI CALCULATIONS FOR AUGUST 2007 EVENT IN KENOSHA COUNTY												
BLDG NO.	ADDRESS	ACQUISITION COMPLETION DATE	FFE (FT, NGVD) ¹	2009 BRV ²	FLOOD DEPTH (FT)	BUILDING DAMAGE	CONTENTS DAMAGE	DISPLACEMENT COSTS	DISRUPTION COSTS	TOTAL LOSSES AVOIDED	PROJECT INVESTMENT ³	RETURN ON INVESTMENT
51	32139 77th Street	Jul-1995	747.0	\$ 134,820	0.4	\$ 22,858	\$ 13,437	\$ 982	\$ 9,874	\$ 47,152	\$ 135,493	35%
52	32129 77th Street	Jul-1995	747.9	\$ 95,760	-0.5	\$ 7,108	\$ 4,763	\$ -	\$ 5,587	\$ 17,458	\$ 121,895	14%
53	437 S. Riverside Drive	Jul-1995	744.0	\$ 85,680	2.3	\$ 29,826	\$ 16,527	\$ 4,066	\$ 17,905	\$ 68,324	\$ 121,453	56%
54	601 S. Riverside Drive	Jul-1995	749.0	\$ 107,835	-2.7	\$ 4,745	\$ 3,610	\$ -	\$ 4,228	\$ 12,583	\$ 123,925	10%
55	8106 Shorewood Drive	Jul-1995	746.7	\$ 95,760	0.1	\$ 13,664	\$ 8,194	\$ 171	\$ 8,667	\$ 30,695	\$ 127,728	24%
56	31524 76th Street	Sep-1995	745.1	\$ 70,560	2.2	\$ 23,582	\$ 13,108	\$ 3,100	\$ 17,280	\$ 57,070	\$ 116,379	49%
57	31217 77th Street	Feb-1996	747.0	\$ 75,600	0.2	\$ 11,490	\$ 6,838	\$ 279	\$ 9,084	\$ 27,691	\$ 124,635	22%
58	32041 77th Street	Feb-1996	750.7	\$ 87,360	-3.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 117,107	0%
60	419 S. Riverside Drive	Oct-1996	745.0	\$ 78,750	1.3	\$ 13,512	\$ 7,798	\$ 2,147	\$ 9,966	\$ 33,423	\$ 7,841	426%
59	32104 77th Street	Nov-1996	748.0	\$ 176,190	-0.6	\$ 9,451	\$ 4,407	\$ -	\$ 4,661	\$ 18,519	\$ 185,843	10%
61	32028 77th Street	Apr-1997	747.0	\$ 89,880	0.4	\$ 15,186	\$ 8,931	\$ 644	\$ 9,848	\$ 34,609	\$ 136,601	25%
62	31628 76th Street	Dec-1998	747.7	\$ 106,680	-0.5	\$ 8,872	\$ 5,805	\$ -	\$ 5,989	\$ 20,667	\$ 137,189	15%
63	32029 77th Street	Dec-1998	746.6	\$ 79,800	0.7	\$ 16,413	\$ 9,468	\$ 1,172	\$ 11,499	\$ 38,553	\$ 100,017	39%
64	32018 77th Street	Dec-1998	747.5	\$ 82,320	-0.2	\$ 9,644	\$ 5,943	\$ -	\$ 7,518	\$ 23,104	\$ 116,767	20%
65	31710 77th Street	Jan-1999	746.4	\$ 107,100	0.9	\$ 15,339	\$ 8,728	\$ 1,850	\$ 8,690	\$ 34,606	\$ 139,792	25%
66	32143 77th Street	Mar-1999	747.0	\$ 145,530	0.4	\$ 16,597	\$ 9,197	\$ 1,053	\$ 7,378	\$ 34,225	\$ 58,179	59%
11	32132 77th Street	Dec-1999	747.0	\$ 84,000	0.4	\$ 14,281	\$ 8,393	\$ 620	\$ 9,895	\$ 33,190	\$ 90,458	37%
44	31422 76th Street	Dec-1999	746.8	\$ 94,500	0.5	\$ 17,131	\$ 10,001	\$ 916	\$ 10,402	\$ 38,449	\$ 117,619	33%
45	32034 77th Street	Dec-1999	745.5	\$ 121,800	1.8	\$ 37,327	\$ 20,876	\$ 4,534	\$ 16,032	\$ 78,769	\$ 133,352	59%
12	31823 77th Street	Dec-1999	749.0	\$ 102,900	-1.8	\$ 634	\$ 609	\$ -	\$ 2,526	\$ 3,769	\$ 116,432	3%
68	32015 77th Street	Dec-1999	748.5	\$ 121,590	-1.2	\$ 22,277	\$ 15,417	\$ -	\$ 10,489	\$ 48,183	\$ 136,982	35%
67	31917 77th Street	Jan-2000	746.1	\$ 68,355	1.2	\$ 17,025	\$ 9,665	\$ 1,640	\$ 13,451	\$ 41,782	\$ 30,097	139%
8	31805 71st Street	Jun-2000	748.0	\$ 133,980	-0.4	\$ 11,711	\$ 7,588	\$ -	\$ 6,180	\$ 25,480	\$ 203,279	13%
16	31811 71st Street	Jun-2000	746.5	\$ 63,000	1.1	\$ 15,083	\$ 8,590	\$ 1,371	\$ 13,017	\$ 38,062	\$ 93,912	41%
17	31519 77th Street	Jun-2000	745.8	\$ 58,800	1.3	\$ 15,444	\$ 8,732	\$ 1,595	\$ 14,062	\$ 39,833	\$ 105,167	38%
18	6929 319th Avenue	Jun-2000	747.5	\$ 73,500	0.1	\$ 10,536	\$ 6,314	\$ 141	\$ 8,696	\$ 25,687	\$ 98,058	26%
69	6921 319th Avenue	Jun-2000	748.0	\$ 103,320	-0.4	\$ 9,256	\$ 5,969	\$ -	\$ 6,278	\$ 21,503	\$ 108,859	20%
73	441 S. Riverside Drive	Jun-2000	745.0	\$ 105,840	1.3	\$ 18,114	\$ 10,452	\$ 2,869	\$ 9,946	\$ 41,381	\$ 131,060	32%
10	31638 76th Street	Jul-2000	747.6	\$ 150,570	-0.4	\$ 9,854	\$ 4,894	\$ -	\$ 5,192	\$ 19,941	\$ 166,468	12%
14	8153 Shorewood Drive	Jul-2000	746.5	\$ 78,750	0.2	\$ 8,357	\$ 4,586	\$ 355	\$ 7,022	\$ 20,320	\$ 115,113	18%
70	31214 77th Street	Sep-2000	747.0	\$ 98,280	0.2	\$ 14,694	\$ 8,761	\$ 312	\$ 8,973	\$ 32,741	\$ 75,177	44%
1	6712 Wheatland Road	Dec-2000	750.5	\$ 64,680	-2.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 122,709	0%
71	6905 319th Avenue	Dec-2000	748.0	\$ 138,915	-0.4	\$ 12,453	\$ 8,030	\$ -	\$ 6,281	\$ 26,764	\$ 136,356	20%
72	31705 71st Street	Jan-2001	747.0	\$ 78,960	0.6	\$ 14,918	\$ 8,674	\$ 889	\$ 10,746	\$ 35,226	\$ 96,381	37%
29	31822 71st Street	Sep-2001	748.0	\$ 139,125	-0.4	\$ 12,178	\$ 7,888	\$ -	\$ 6,186	\$ 26,252	\$ 146,597	18%
2	31809 77th Street	Oct-2001	748.0	\$ 81,480	-0.8	\$ 4,170	\$ 3,071	\$ -	\$ 4,551	\$ 11,792	\$ 34,954	34%
4	31733 77th Street	Oct-2001	746.0	\$ 98,070	1.2	\$ 24,657	\$ 13,988	\$ 2,406	\$ 13,557	\$ 54,608	\$ 35,951	152%
5	31826 77th Street	Oct-2001	748.5	\$ 97,860	-1.2	\$ 1,854	\$ 1,780	\$ -	\$ 3,101	\$ 6,735	\$ 99,666	7%
7	31911 77th Street	Oct-2001	746.5	\$ 75,810	0.8	\$ 16,139	\$ 9,282	\$ 1,226	\$ 11,824	\$ 38,470	\$ 83,304	46%
9	32114 77th Street	Oct-2001	749.5	\$ 75,600	-2.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 103,368	0%
28	31711 71st Street	Oct-2001	748.0	\$ 60,060	-0.4	\$ 5,147	\$ 3,348	\$ -	\$ 6,103	\$ 14,597	\$ 113,134	13%

Table B.12 Part 2 of 2

Loss Estimation and ROI Calculations for August 2007 Event in Kenosha County												
BLDG NO.	ADDRESS	ACQUISITION COMPLETION DATE	FFE (FT, NGVD) ¹	2009 BRV ²	FLOOD DEPTH (FT)	BUILDING DAMAGE	CONTENTS DAMAGE	DISPLACEMENT COSTS	DISRUPTION COSTS	TOTAL LOSSES AVOIDED	PROJECT INVESTMENT ³	RETURN ON INVESTMENT
23	6940 317th Avenue	Feb-2002	750.0	\$ 58,800	-2.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 130,769	0%
15	8200 No. Riverside Drive	Sep-2002	746.8	\$ 63,000	-0.2	\$ 7,222	\$ 4,465	\$ -	\$ 7,405	\$ 19,092	\$ 130,863	15%
3	31417 77th Street	Oct-2002	746.0	\$ 104,160	1.1	\$ 25,186	\$ 14,332	\$ 2,325	\$ 13,124	\$ 54,967	\$ 114,648	48%
13	32005 77th Street	Oct-2002	746.5	\$ 75,600	0.8	\$ 16,172	\$ 9,297	\$ 1,238	\$ 11,870	\$ 38,577	\$ 119,677	32%
19	8032 Shorewood Drive	Oct-2002	745.0	\$ 95,760	1.8	\$ 29,042	\$ 16,254	\$ 3,495	\$ 15,889	\$ 64,679	\$ 133,702	48%
24	31701 77th Street	Oct-2002	748.7	\$ 79,800	-1.5	\$ 902	\$ 866	\$ -	\$ 2,757	\$ 4,526	\$ 82,325	5%
25	6912 318th Avenue	Oct-2002	748.0	\$ 58,800	-0.4	\$ 5,217	\$ 3,371	\$ -	\$ 6,239	\$ 14,827	\$ 87,774	17%
20	31533 77th Street	Oct-2002	748.5	\$ 56,070	-1.4	\$ 894	\$ 858	\$ -	\$ 2,966	\$ 4,717	\$ 42,029	11%
32	31709 77th Street	Jan-2003	747.6	\$ 67,200	-0.4	\$ 5,760	\$ 3,747	\$ -	\$ 6,104	\$ 15,611	\$ 80,759	19%
34	7956 Shorewood Drive	Jan-2003	746.0	\$ 63,525	0.8	\$ 13,599	\$ 7,817	\$ 1,043	\$ 11,877	\$ 34,336	\$ 111,428	31%
22	445 So. Riverside Drive	Feb-2003	746.2	\$ 98,280	0.1	\$ 14,578	\$ 8,700	\$ 289	\$ 8,920	\$ 32,487	\$ 100,568	32%
30	31715 71st Street	May-2003	748.1	\$ 58,800	-0.5	\$ 4,402	\$ 2,944	\$ -	\$ 5,616	\$ 12,962	\$ 86,360	15%
31	501 So. Riverside Drive	Oct-2003	745.4	\$ 168,000	0.9	\$ 24,908	\$ 14,222	\$ 3,193	\$ 8,917	\$ 51,240	\$ 129,181	40%
21	607 So. Riverside Drive	Sep-2004	748.3	\$ 74,970	-2.0	\$ 10,434	\$ 7,914	\$ -	\$ 8,508	\$ 26,856	\$ 108,830	25%
47	31627 71st Street	Aug-2005	747.0	\$ 104,160	0.5	\$ 19,493	\$ 11,345	\$ 1,135	\$ 10,666	\$ 42,638	\$ 140,789	30%
48	31315 77th Street	Aug-2005	746.0	\$ 95,760	1.1	\$ 23,148	\$ 13,173	\$ 2,136	\$ 13,121	\$ 51,578	\$ 153,438	34%
38	6913 319th Avenue	Dec-2005	747.0	\$ 71,400	0.6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,348	0%
49	31602 76th Street	Dec-2005	746.1	\$ 104,160	1.1	\$ 25,406	\$ 14,447	\$ 2,375	\$ 13,219	\$ 55,447	\$ 142,351	39%
26	30522 80th Street	Jun-2006	746.0	\$ 61,740	0.8	\$ 13,180	\$ 7,578	\$ 1,006	\$ 11,850	\$ 33,614	\$ 110,106	31%
35	7536 313th Avenue	Jun-2006	748.0	\$ 74,130	-0.6	\$ 4,826	\$ 3,334	\$ -	\$ 5,177	\$ 13,337	\$ 129,190	10%
36	511 S. Riverside Drive	Jun-2006	743.7	\$ 51,660	2.6	\$ 19,207	\$ 10,592	\$ 2,762	\$ 18,971	\$ 51,532	\$ 59,472	87%
37	606 Wisconsin Avenue	Jun-2006	743.0	\$ 37,800	3.3	\$ 15,993	\$ 8,757	\$ 2,543	\$ 21,278	\$ 48,571	\$ 114,398	42%
40	30510 80th Street	Jun-2006	747.5	\$ 65,100	-0.7	\$ 3,778	\$ 2,687	\$ -	\$ 4,859	\$ 11,324	\$ 119,470	9%
39	7600 313th Street	Aug-2006	747.0	\$ 64,680	0.3	\$ 10,555	\$ 6,230	\$ 387	\$ 9,588	\$ 26,760	\$ 96,803	28%
33	31901 71st Street	Jan-2007	750.8	\$ 58,800	-3.2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 121,564	0%
41	7962 Shorewood Drive	Mar-2007	745.0	\$ 65,520	1.8	\$ 19,890	\$ 11,131	\$ 2,395	\$ 15,902	\$ 49,319	\$ 140,801	35%
42	31613 71st Street	Mar-2007	748.0	\$ 107,730	-0.5	\$ 8,967	\$ 5,866	\$ -	\$ 5,992	\$ 20,826	\$ 163,558	13%
50	415 S. Riverside Drive	Feb-2008	744.0	\$ 63,525	2.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 125,544	0%
43	7522 313th Avenue	Jun-2008	749.0	\$ 130,620	-1.7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 169,787	0%
TOTAL						\$ 895,853	\$ 528,110	\$ 64,601	\$ 610,111	\$ 2,098,675	\$ 7,845,846	27%

¹ Vertical datum information was not provided with the first floor elevation (FFE) information supplied by the county. Elevations were assumed to be relative to the National Geodetic Vertical Datum of 1929 (NGVD).

² Building replacement value (BRV) based on unit cost per square foot of living space for the county.

³ Project investment costs for each event only include the project costs for the buildings that were included in the analysis for that event.

Figure B.13

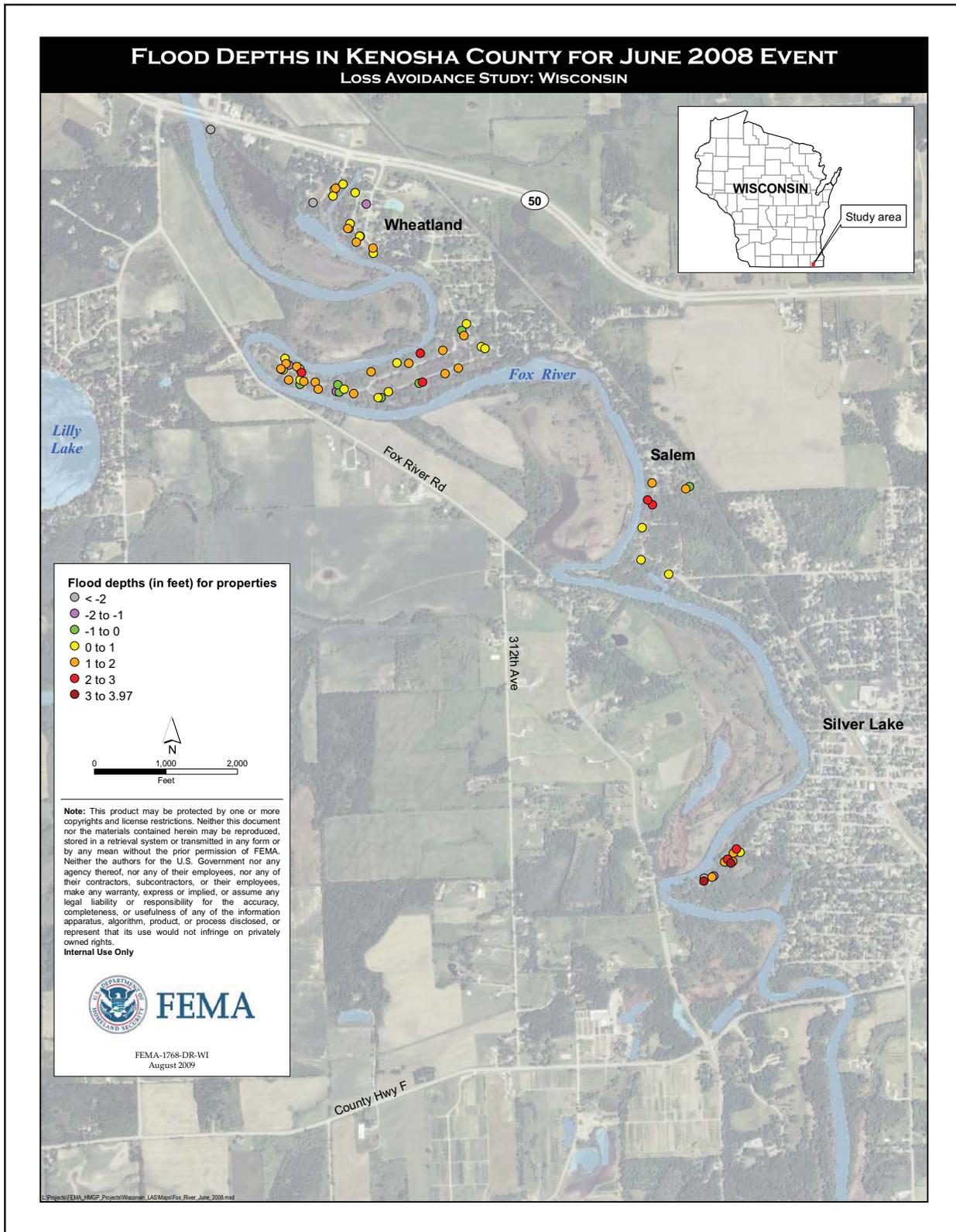


Table B.13 Part 1 of 2

LOSS ESTIMATION AND ROI CALCULATIONS FOR JUNE 2008 EVENT IN KENOSHA COUNTY												
BLDG NO.	ADDRESS	ACQUISITION COMPLETION DATE	FFE (FT, NGVD)1	2009 BRV2	FLOOD DEPTH (FT)	BUILDING DAMAGE	CONTENTS DAMAGE	DISPLACEMENT COSTS	DISRUPTION COSTS	TOTAL LOSSES AVOIDED	PROJECT INVESTMENT3	RETURN ON INVESTMENT
51	32139 77th Street	Jul-1995	747.0	\$ 134,820	1.1	\$ 32,469	\$ 18,483	\$ 2,979	\$ 13,081	\$ 67,012	\$ 135,493	49%
52	32129 77th Street	Jul-1995	747.9	\$ 95,760	0.2	\$ 14,554	\$ 8,661	\$ 353	\$ 9,084	\$ 32,652	\$ 121,895	27%
53	437 S. Riverside Drive	Jul-1995	744.0	\$ 85,680	3.0	\$ 34,143	\$ 18,740	\$ 5,161	\$ 20,172	\$ 78,215	\$ 121,453	64%
54	601 S. Riverside Drive	Jul-1995	749.0	\$ 107,835	-2.1	\$ 14,081	\$ 10,713	\$ -	\$ 8,122	\$ 32,915	\$ 123,925	27%
55	8106 Shorewood Drive	Jul-1995	746.7	\$ 95,760	0.8	\$ 20,300	\$ 11,679	\$ 1,531	\$ 11,783	\$ 45,294	\$ 127,728	35%
56	31524 76th Street	Sep-1995	745.1	\$ 70,560	2.9	\$ 27,703	\$ 15,220	\$ 4,145	\$ 19,907	\$ 66,974	\$ 116,379	58%
57	31217 77th Street	Feb-1996	747.0	\$ 75,600	0.9	\$ 16,954	\$ 9,708	\$ 1,398	\$ 12,335	\$ 40,394	\$ 124,635	32%
58	32041 77th Street	Feb-1996	750.7	\$ 87,360	-2.6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 117,107	0%
60	419 S. Riverside Drive	Oct-1996	745.0	\$ 78,750	2.0	\$ 16,345	\$ 9,538	\$ 3,155	\$ 11,584	\$ 40,622	\$ 7,841	518%
59	32104 77th Street	Nov-1996	748.0	\$ 176,190	0.1	\$ 17,480	\$ 9,496	\$ 376	\$ 6,711	\$ 34,063	\$ 185,843	18%
61	32028 77th Street	Apr-1997	747.0	\$ 89,880	1.1	\$ 21,600	\$ 12,298	\$ 1,975	\$ 13,057	\$ 48,930	\$ 136,601	36%
62	31628 76th Street	Dec-1998	747.7	\$ 106,680	0.3	\$ 17,080	\$ 10,104	\$ 571	\$ 9,450	\$ 37,203	\$ 137,189	27%
63	32029 77th Street	Dec-1998	746.6	\$ 79,800	1.5	\$ 21,782	\$ 12,280	\$ 2,354	\$ 14,525	\$ 50,941	\$ 100,017	51%
64	32018 77th Street	Dec-1998	747.5	\$ 82,320	0.6	\$ 15,720	\$ 9,131	\$ 961	\$ 10,838	\$ 36,650	\$ 116,767	31%
65	31710 77th Street	Jan-1999	746.4	\$ 107,100	1.6	\$ 19,827	\$ 11,496	\$ 3,436	\$ 10,575	\$ 45,334	\$ 139,792	32%
66	32143 77th Street	Mar-1999	747.0	\$ 145,530	1.1	\$ 22,840	\$ 13,103	\$ 3,209	\$ 9,307	\$ 48,458	\$ 58,179	83%
11	32132 77th Street	Dec-1999	747.0	\$ 84,000	1.1	\$ 20,265	\$ 11,534	\$ 1,864	\$ 13,099	\$ 46,763	\$ 90,458	52%
44	31422 76th Street	Dec-1999	746.8	\$ 94,500	1.2	\$ 23,744	\$ 13,471	\$ 2,315	\$ 13,550	\$ 53,080	\$ 117,619	45%
45	32034 77th Street	Dec-1999	745.5	\$ 121,800	2.6	\$ 44,601	\$ 24,622	\$ 6,338	\$ 18,718	\$ 94,280	\$ 133,352	71%
12	31823 77th Street	Dec-1999	749.0	\$ 102,900	-1.0	\$ 2,512	\$ 2,412	\$ -	\$ 3,347	\$ 8,271	\$ 116,432	7%
68	32015 77th Street	Dec-1999	748.5	\$ 121,590	-0.5	\$ 27,574	\$ 17,879	\$ -	\$ 12,448	\$ 57,902	\$ 136,982	42%
67	31917 77th Street	Jan-2000	746.1	\$ 68,355	1.9	\$ 21,416	\$ 11,961	\$ 2,653	\$ 16,340	\$ 52,370	\$ 30,097	174%
8	31805 71st Street	Jun-2000	748.0	\$ 133,980	0.3	\$ 22,091	\$ 13,026	\$ 848	\$ 9,665	\$ 45,629	\$ 203,279	22%
16	31811 71st Street	Jun-2000	746.5	\$ 63,000	1.8	\$ 19,182	\$ 10,733	\$ 2,316	\$ 15,943	\$ 48,174	\$ 93,912	51%
17	31519 77th Street	Jun-2000	745.8	\$ 58,800	2.1	\$ 19,184	\$ 10,684	\$ 2,465	\$ 16,923	\$ 49,256	\$ 105,167	47%
18	6929 319th Avenue	Jun-2000	747.5	\$ 73,500	0.8	\$ 15,876	\$ 9,119	\$ 1,235	\$ 11,964	\$ 38,194	\$ 98,058	39%
69	6921 319th Avenue	Jun-2000	748.0	\$ 103,320	0.3	\$ 17,188	\$ 10,125	\$ 685	\$ 9,731	\$ 37,730	\$ 108,859	35%
73	441 S. Riverside Drive	Jun-2000	745.0	\$ 105,840	2.0	\$ 21,911	\$ 12,784	\$ 4,220	\$ 11,560	\$ 50,476	\$ 131,060	39%
10	31638 76th Street	Jul-2000	747.6	\$ 150,570	0.3	\$ 16,603	\$ 9,159	\$ 894	\$ 7,208	\$ 33,864	\$ 166,468	20%
14	8153 Shorewood Drive	Jul-2000	746.5	\$ 78,750	0.9	\$ 11,583	\$ 6,608	\$ 1,465	\$ 8,864	\$ 28,520	\$ 115,113	25%
70	31214 77th Street	Sep-2000	747.0	\$ 98,280	0.9	\$ 21,797	\$ 12,492	\$ 1,768	\$ 12,224	\$ 48,281	\$ 75,177	64%
1	6712 Wheatland Road	Dec-2000	750.5	\$ 64,680	-2.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 122,709	0%
71	6905 319th Avenue	Dec-2000	748.0	\$ 138,915	0.3	\$ 23,116	\$ 13,616	\$ 923	\$ 9,733	\$ 47,388	\$ 136,356	35%
72	31705 71st Street	Jan-2001	747.0	\$ 78,960	1.3	\$ 20,376	\$ 11,536	\$ 2,058	\$ 13,855	\$ 47,824	\$ 96,381	50%
29	31822 71st Street	Sep-2001	748.0	\$ 139,125	0.3	\$ 22,951	\$ 13,532	\$ 883	\$ 9,668	\$ 47,033	\$ 146,597	32%
2	31809 77th Street	Oct-2001	748.0	\$ 81,480	0.0	\$ 10,653	\$ 6,461	\$ -	\$ 8,129	\$ 25,244	\$ 34,954	72%
4	31733 77th Street	Oct-2001	746.0	\$ 98,070	1.9	\$ 30,957	\$ 17,281	\$ 3,859	\$ 16,446	\$ 68,543	\$ 35,951	191%
5	31826 77th Street	Oct-2001	748.5	\$ 97,860	-0.5	\$ 7,650	\$ 5,070	\$ -	\$ 5,765	\$ 18,484	\$ 99,666	19%
7	31911 77th Street	Oct-2001	746.5	\$ 75,810	1.5	\$ 21,178	\$ 11,920	\$ 2,348	\$ 14,813	\$ 50,260	\$ 83,304	60%
9	32114 77th Street	Oct-2001	749.5	\$ 75,600	-1.4	\$ 1,110	\$ 1,066	\$ -	\$ 2,909	\$ 5,086	\$ 103,368	5%
28	31711 71st Street	Oct-2001	748.0	\$ 60,060	0.3	\$ 9,760	\$ 5,764	\$ 351	\$ 9,558	\$ 25,433	\$ 113,134	22%

Table B.13 Part 2 of 2

LOSS ESTIMATION AND ROI CALCULATIONS FOR JUNE 2008 EVENT IN KENOSHA COUNTY												
BLDG NO.	ADDRESS	ACQUISITION COMPLETION DATE	FFE (FT, NGVD) ¹	2009 BRV ²	FLOOD DEPTH (FT)	BUILDING DAMAGE	CONTENTS DAMAGE	DISPLACEMENT COSTS	DISRUPTION COSTS	TOTAL LOSSES AVOIDED	PROJECT INVESTMENT ³	RETURN ON INVESTMENT
23	6940 317th Avenue	Feb-2002	750.0	\$ 58,800	-1.7	\$ 462	\$ 443	\$ -	\$ 2,602	\$ 3,507	\$ 130,769	3%
15	8200 No. Riverside Drive	Sep-2002	746.8	\$ 63,000	0.5	\$ 11,555	\$ 6,738	\$ 638	\$ 10,498	\$ 29,429	\$ 130,863	22%
3	31417 77th Street	Oct-2002	746.0	\$ 104,160	1.8	\$ 31,835	\$ 17,808	\$ 3,858	\$ 15,995	\$ 69,496	\$ 114,648	61%
13	32005 77th Street	Oct-2002	746.5	\$ 75,600	1.5	\$ 21,189	\$ 11,923	\$ 2,358	\$ 14,855	\$ 50,325	\$ 119,677	42%
19	8032 Shorewood Drive	Oct-2002	745.0	\$ 95,760	2.5	\$ 34,559	\$ 19,099	\$ 4,855	\$ 18,480	\$ 76,992	\$ 133,702	58%
24	31701 77th Street	Oct-2002	748.7	\$ 79,800	-0.8	\$ 3,581	\$ 2,745	\$ -	\$ 4,267	\$ 10,593	\$ 82,325	13%
25	6912 318th Avenue	Oct-2002	748.0	\$ 58,800	0.3	\$ 9,748	\$ 5,744	\$ 383	\$ 9,705	\$ 25,579	\$ 87,774	29%
20	31533 77th Street	Oct-2002	748.5	\$ 56,070	-0.6	\$ 3,641	\$ 2,517	\$ -	\$ 5,169	\$ 11,327	\$ 42,029	27%
32	31709 77th Street	Jan-2003	747.6	\$ 67,200	0.3	\$ 10,915	\$ 6,446	\$ 391	\$ 9,554	\$ 27,306	\$ 80,759	34%
34	7956 Shorewood Drive	Jan-2003	746.0	\$ 63,525	1.5	\$ 17,646	\$ 9,936	\$ 1,945	\$ 14,742	\$ 44,268	\$ 111,428	40%
22	445 So. Riverside Drive	Feb-2003	746.2	\$ 98,280	0.8	\$ 20,723	\$ 11,928	\$ 1,548	\$ 11,732	\$ 45,932	\$ 100,568	46%
30	31715 71st Street	May-2003	748.1	\$ 58,800	0.2	\$ 8,980	\$ 5,341	\$ 226	\$ 9,117	\$ 23,664	\$ 86,360	27%
31	501 So. Riverside Drive	Oct-2003	745.4	\$ 168,000	1.6	\$ 30,958	\$ 17,945	\$ 5,339	\$ 10,537	\$ 64,779	\$ 129,181	50%
21	607 So. Riverside Drive	Sep-2004	748.3	\$ 74,970	-1.4	\$ 13,068	\$ 9,185	\$ -	\$ 10,089	\$ 32,342	\$ 108,830	30%
47	31627 71st Street	Aug-2005	747.0	\$ 104,160	1.3	\$ 26,627	\$ 15,086	\$ 2,657	\$ 13,746	\$ 58,116	\$ 140,789	41%
48	31315 77th Street	Aug-2005	746.0	\$ 95,760	1.8	\$ 29,261	\$ 16,369	\$ 3,545	\$ 15,992	\$ 65,167	\$ 153,438	42%
38	6913 319th Avenue	Dec-2005	747.0	\$ 71,400	1.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,348	0%
49	31602 76th Street	Dec-2005	746.1	\$ 104,160	1.9	\$ 32,097	\$ 17,945	\$ 3,918	\$ 16,108	\$ 70,068	\$ 142,351	49%
26	30522 80th Street	Jun-2006	746.0	\$ 61,740	1.5	\$ 17,117	\$ 9,639	\$ 1,883	\$ 14,718	\$ 43,357	\$ 110,106	39%
35	7536 313th Avenue	Jun-2006	748.0	\$ 74,130	0.1	\$ 10,652	\$ 6,382	\$ 147	\$ 8,712	\$ 25,894	\$ 129,190	20%
36	511 S. Riverside Drive	Jun-2006	743.7	\$ 51,660	3.3	\$ 21,672	\$ 11,871	\$ 3,422	\$ 21,117	\$ 58,080	\$ 59,472	98%
37	606 Wisconsin Avenue	Jun-2006	743.0	\$ 37,800	3.9	\$ 17,652	\$ 9,634	\$ 3,024	\$ 23,252	\$ 53,562	\$ 114,398	47%
40	30510 80th Street	Jun-2006	747.5	\$ 65,100	0.0	\$ 8,743	\$ 5,284	\$ 4	\$ 8,289	\$ 22,320	\$ 119,470	19%
39	7600 313th Street	Aug-2006	747.0	\$ 64,680	1.0	\$ 15,211	\$ 8,676	\$ 1,345	\$ 12,826	\$ 38,059	\$ 96,803	39%
33	31901 71st Street	Jan-2007	750.8	\$ 58,800	-2.5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 121,564	0%
41	7962 Shorewood Drive	Mar-2007	745.0	\$ 65,520	2.5	\$ 23,663	\$ 13,076	\$ 3,326	\$ 18,492	\$ 58,558	\$ 140,801	42%
42	31613 71st Street	Mar-2007	748.0	\$ 107,730	0.3	\$ 17,155	\$ 10,155	\$ 557	\$ 9,411	\$ 37,278	\$ 163,558	23%
50	415 S. Riverside Drive	Feb-2008	744.0	\$ 63,525	3.0	\$ 25,367	\$ 13,921	\$ 3,840	\$ 20,209	\$ 63,337	\$ 125,544	50%
43	7522 313th Avenue	Jun-2008	749.0	\$ 130,620	-0.9	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 169,787	0%
TOTAL						\$ 1,286,888	\$ 742,212	\$ 127,733	\$ 818,008	\$ 2,974,840	\$ 7,971,390	37%

¹ Vertical datum information was not provided with the first floor elevation (FFE) information supplied by the county. Elevations were assumed to be relative to the National Geodetic Vertical Datum of 1929 (NGVD).

² Building replacement value (BRV) based on unit cost per square foot of living space for the county.

³ Project investment costs for each event only include the project costs for the buildings that were included in the analysis for that event.

Figure B.14

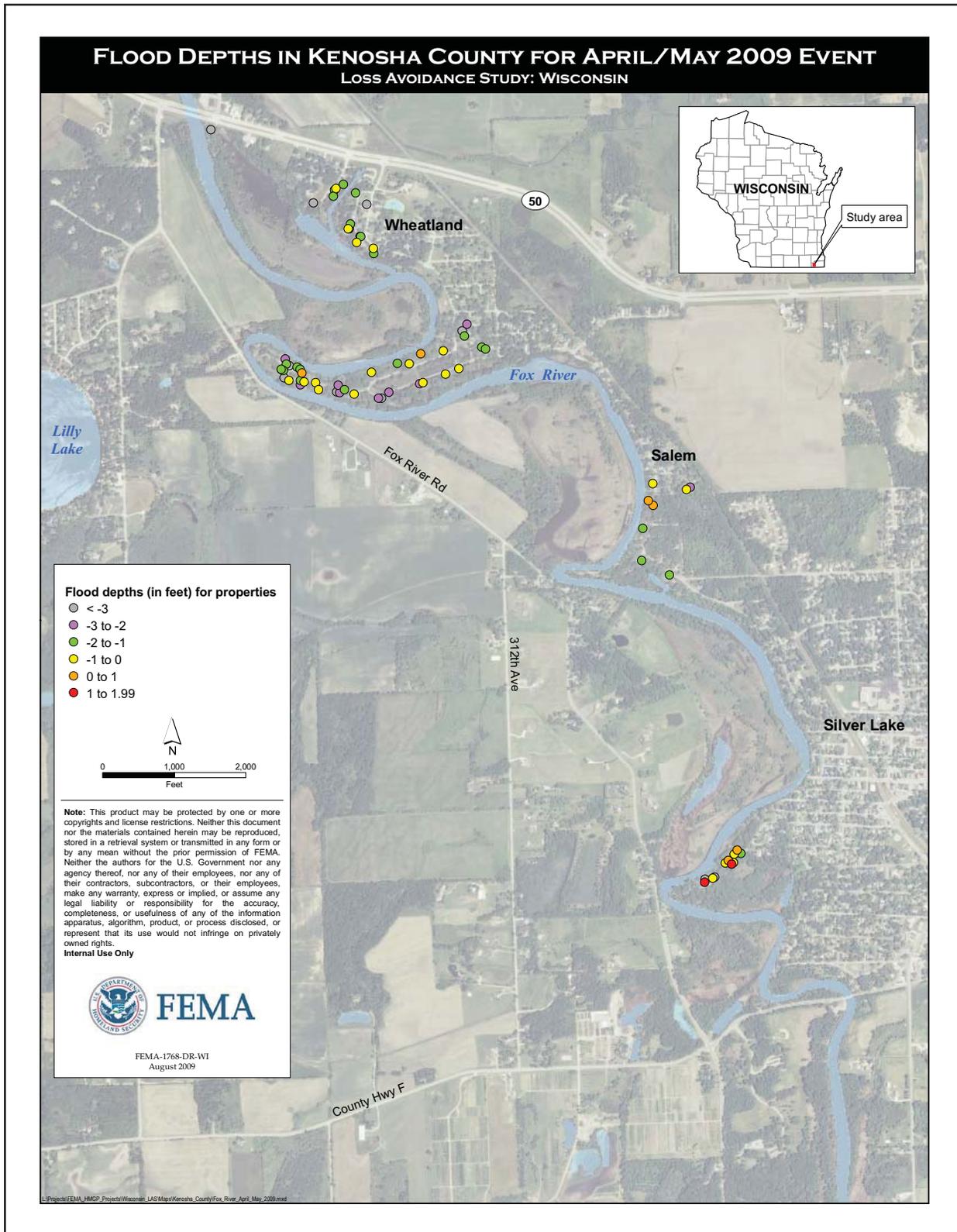


Table B.14 Part 1 of 2

LOSS ESTIMATION AND ROI CALCULATIONS FOR APRIL/ MAY 2009 EVENT IN KENOSHA COUNTY												
BLDG NO.	ADDRESS	ACQUISITION COMPLETION DATE	FFE (FT, NGVD) ¹	2009 BRV ²	FLOOD DEPTH (FT)	BUILDING DAMAGE	CONTENTS DAMAGE	DISPLACEMENT COSTS	DISRUPTION COSTS	TOTAL LOSSES AVOIDED	PROJECT INVESTMENT ³	RETURN ON INVESTMENT
51	32139 77th Street	Jul-1995	747.0	\$ 134,820	-1.2	\$ 2,619	\$ 2,514	\$ -	\$ 3,122	\$ 8,255	\$ 135,493	6%
52	32129 77th Street	Jul-1995	747.9	\$ 95,760	-2.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 121,895	0%
53	437 S. Riverside Drive	Jul-1995	744.0	\$ 85,680	1.0	\$ 19,873	\$ 11,348	\$ 1,720	\$ 12,680	\$ 45,621	\$ 121,453	38%
54	601 S. Riverside Drive	Jul-1995	749.0	\$ 107,835	-4.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 123,925	0%
55	8106 Shorewood Drive	Jul-1995	746.7	\$ 95,760	-1.4	\$ 1,379	\$ 1,323	\$ -	\$ 2,896	\$ 5,598	\$ 127,728	4%
56	31524 76th Street	Sep-1995	745.1	\$ 70,560	0.6	\$ 13,498	\$ 7,839	\$ 829	\$ 10,853	\$ 33,019	\$ 116,379	28%
57	31217 77th Street	Feb-1996	747.0	\$ 75,600	-1.4	\$ 1,120	\$ 1,075	\$ -	\$ 2,915	\$ 5,111	\$ 124,635	4%
58	32041 77th Street	Feb-1996	750.7	\$ 87,360	-4.9	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 117,107	0%
60	419 S. Riverside Drive	Oct-1996	745.0	\$ 78,750	0.0	\$ 7,286	\$ 3,913	\$ -	\$ 6,410	\$ 17,609	\$ 7,841	225%
59	32104 77th Street	Nov-1996	748.0	\$ 176,190	-2.2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 185,843	0%
61	32028 77th Street	Apr-1997	747.0	\$ 89,880	-1.2	\$ 1,730	\$ 1,660	\$ -	\$ 3,114	\$ 6,504	\$ 136,601	5%
62	31628 76th Street	Dec-1998	747.7	\$ 106,680	-2.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 137,189	0%
63	32029 77th Street	Dec-1998	746.6	\$ 79,800	-0.9	\$ 3,210	\$ 2,550	\$ -	\$ 4,058	\$ 9,818	\$ 100,017	10%
64	32018 77th Street	Dec-1998	747.5	\$ 82,320	-1.7	\$ 539	\$ 517	\$ -	\$ 2,543	\$ 3,599	\$ 116,767	3%
65	31710 77th Street	Jan-1999	746.4	\$ 107,100	-0.7	\$ 4,997	\$ 2,204	\$ -	\$ 4,347	\$ 11,548	\$ 139,792	8%
66	32143 77th Street	Mar-1999	747.0	\$ 145,530	-1.2	\$ 3,376	\$ 1,125	\$ -	\$ 3,292	\$ 7,794	\$ 58,179	13%
11	32132 77th Street	Dec-1999	747.0	\$ 84,000	-1.2	\$ 1,647	\$ 1,581	\$ -	\$ 3,130	\$ 6,358	\$ 90,458	7%
44	31422 76th Street	Dec-1999	746.8	\$ 94,500	-1.1	\$ 2,107	\$ 2,022	\$ -	\$ 3,251	\$ 7,380	\$ 117,619	6%
45	32034 77th Street	Dec-1999	745.5	\$ 121,800	0.3	\$ 19,344	\$ 11,454	\$ 620	\$ 9,392	\$ 40,810	\$ 133,352	31%
12	31823 77th Street	Dec-1999	749.0	\$ 102,900	-3.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 116,432	0%
68	32015 77th Street	Dec-1999	748.5	\$ 121,590	-2.8	\$ 3,732	\$ 2,840	\$ -	\$ 3,629	\$ 10,201	\$ 136,982	7%
67	31917 77th Street	Jan-2000	746.1	\$ 68,355	-0.4	\$ 6,156	\$ 3,966	\$ -	\$ 6,299	\$ 16,422	\$ 30,097	55%
8	31805 71st Street	Jun-2000	748.0	\$ 133,980	-1.9	\$ 241	\$ 231	\$ -	\$ 2,330	\$ 2,802	\$ 203,279	1%
16	31811 71st Street	Jun-2000	746.5	\$ 63,000	-0.4	\$ 5,504	\$ 3,567	\$ -	\$ 6,178	\$ 15,250	\$ 93,912	16%
17	31519 77th Street	Jun-2000	745.8	\$ 58,800	-0.3	\$ 6,265	\$ 3,919	\$ -	\$ 7,041	\$ 17,225	\$ 105,167	16%
18	6929 319th Avenue	Jun-2000	747.5	\$ 73,500	-1.4	\$ 1,081	\$ 1,038	\$ -	\$ 2,910	\$ 5,029	\$ 98,058	5%
69	6921 319th Avenue	Jun-2000	748.0	\$ 103,320	-1.9	\$ 224	\$ 215	\$ -	\$ 2,346	\$ 2,786	\$ 108,859	3%
73	441 S. Riverside Drive	Jun-2000	745.0	\$ 105,840	0.0	\$ 9,759	\$ 5,239	\$ -	\$ 6,396	\$ 21,394	\$ 131,060	16%
10	31638 76th Street	Jul-2000	747.6	\$ 150,570	-2.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 166,468	0%
14	8153 Shorewood Drive	Jul-2000	746.5	\$ 78,750	-1.3	\$ 1,724	\$ 575	\$ -	\$ 3,233	\$ 5,532	\$ 115,113	5%
70	31214 77th Street	Sep-2000	747.0	\$ 98,280	-1.4	\$ 1,393	\$ 1,337	\$ -	\$ 2,886	\$ 5,616	\$ 75,177	7%
1	6712 Wheatland Road	Dec-2000	750.5	\$ 64,680	-4.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 122,709	0%
71	6905 319th Avenue	Dec-2000	748.0	\$ 138,915	-1.9	\$ 303	\$ 291	\$ -	\$ 2,347	\$ 2,941	\$ 136,356	2%
72	31705 71st Street	Jan-2001	747.0	\$ 78,960	-1.0	\$ 2,402	\$ 2,119	\$ -	\$ 3,617	\$ 8,138	\$ 96,381	8%
29	31822 71st Street	Sep-2001	748.0	\$ 139,125	-1.9	\$ 253	\$ 243	\$ -	\$ 2,331	\$ 2,827	\$ 146,597	2%
2	31809 77th Street	Oct-2001	748.0	\$ 81,480	-2.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 34,954	0%
4	31733 77th Street	Oct-2001	746.0	\$ 98,070	-0.4	\$ 9,093	\$ 5,827	\$ -	\$ 6,419	\$ 21,339	\$ 35,951	59%
5	31826 77th Street	Oct-2001	748.5	\$ 97,860	-2.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 99,666	0%
7	31911 77th Street	Oct-2001	746.5	\$ 75,810	-0.8	\$ 3,643	\$ 2,734	\$ -	\$ 4,410	\$ 10,787	\$ 83,304	13%
9	32114 77th Street	Oct-2001	749.5	\$ 75,600	-3.7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 103,368	0%
28	31711 71st Street	Oct-2001	748.0	\$ 60,060	-1.9	\$ 79	\$ 76	\$ -	\$ 2,308	\$ 2,462	\$ 113,134	2%

Table B.14 Part 2 of 2

Loss Estimation and ROI Calculations for April/ May 2009 Event in Kenosha County												
BLDG NO.	ADDRESS	ACQUISITION COMPLETION DATE	FFE (FT, NGVD) ¹	2009 BRV ²	FLOOD DEPTH (FT)	BUILDING DAMAGE	CONTENTS DAMAGE	DISPLACEMENT COSTS	DISRUPTION COSTS	TOTAL LOSSES AVOIDED	PROJECT INVESTMENT ³	RETURN ON INVESTMENT
23	6940 317th Avenue	Feb-2002	750.0	\$ 58,800	-3.9	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 130,769	0%
15	8200 No. Riverside Drive	Sep-2002	746.8	\$ 63,000	-1.6	\$ 574	\$ 551	\$ -	\$ 2,659	\$ 3,784	\$ 130,863	3%
3	31417 77th Street	Oct-2002	746.0	\$ 104,160	-0.5	\$ 8,446	\$ 5,555	\$ -	\$ 5,896	\$ 19,896	\$ 114,648	17%
13	32005 77th Street	Oct-2002	746.5	\$ 75,600	-0.8	\$ 3,722	\$ 2,772	\$ -	\$ 4,463	\$ 10,958	\$ 119,677	9%
19	8032 Shorewood Drive	Oct-2002	745.0	\$ 95,760	0.3	\$ 15,524	\$ 9,171	\$ 552	\$ 9,540	\$ 34,786	\$ 133,702	26%
24	31701 77th Street	Oct-2002	748.7	\$ 79,800	-3.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 82,325	0%
25	6912 318th Avenue	Oct-2002	748.0	\$ 58,800	-1.9	\$ 119	\$ 114	\$ -	\$ 2,340	\$ 2,573	\$ 87,774	3%
20	31533 77th Street	Oct-2002	748.5	\$ 56,070	-3.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 42,029	0%
32	31709 77th Street	Jan-2003	747.6	\$ 67,200	-2.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 80,759	0%
34	7956 Shorewood Drive	Jan-2003	746.0	\$ 63,525	-0.7	\$ 3,607	\$ 2,581	\$ -	\$ 4,803	\$ 10,991	\$ 111,428	10%
22	445 So. Riverside Drive	Feb-2003	746.2	\$ 98,280	-1.2	\$ 1,949	\$ 1,871	\$ -	\$ 3,141	\$ 6,960	\$ 100,568	7%
30	31715 71st Street	May-2003	748.1	\$ 58,800	-2.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 86,360	0%
31	501 So. Riverside Drive	Oct-2003	745.4	\$ 168,000	-0.4	\$ 11,262	\$ 5,631	\$ -	\$ 5,264	\$ 22,157	\$ 129,181	17%
21	607 So. Riverside Drive	Sep-2004	748.3	\$ 74,970	-3.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 108,830	0%
47	31627 71st Street	Aug-2005	747.0	\$ 104,160	-1.0	\$ 2,900	\$ 2,654	\$ -	\$ 3,501	\$ 9,055	\$ 140,789	6%
48	31315 77th Street	Aug-2005	746.0	\$ 95,760	-0.5	\$ 7,757	\$ 5,103	\$ -	\$ 5,892	\$ 18,753	\$ 153,438	12%
38	6913 319th Avenue	Dec-2005	747.0	\$ 71,400	-0.9	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,348	0%
49	31602 76th Street	Dec-2005	746.1	\$ 104,160	-0.5	\$ 8,694	\$ 5,684	\$ -	\$ 6,003	\$ 20,381	\$ 142,351	14%
26	30522 80th Street	Jun-2006	746.0	\$ 61,740	-0.7	\$ 3,476	\$ 2,492	\$ -	\$ 4,781	\$ 10,748	\$ 110,106	10%
35	7536 313th Avenue	Jun-2006	748.0	\$ 74,130	-2.2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 129,190	0%
36	511 S. Riverside Drive	Jun-2006	743.7	\$ 51,660	1.3	\$ 13,341	\$ 7,553	\$ 1,349	\$ 13,864	\$ 36,106	\$ 59,472	61%
37	606 Wisconsin Avenue	Jun-2006	743.0	\$ 37,800	2.0	\$ 12,050	\$ 6,722	\$ 1,515	\$ 16,586	\$ 36,873	\$ 114,398	32%
40	30510 80th Street	Jun-2006	747.5	\$ 65,100	-2.2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 119,470	0%
39	7600 313th Street	Aug-2006	747.0	\$ 64,680	-1.3	\$ 1,147	\$ 1,101	\$ -	\$ 3,046	\$ 5,295	\$ 96,803	5%
33	31901 71st Street	Jan-2007	750.8	\$ 58,800	-4.7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 121,564	0%
41	7962 Shorewood Drive	Mar-2007	745.0	\$ 65,520	0.3	\$ 10,638	\$ 6,283	\$ 381	\$ 9,551	\$ 26,853	\$ 140,801	19%
42	31613 71st Street	Mar-2007	748.0	\$ 107,730	-2.0	\$ 62	\$ 59	\$ -	\$ 2,274	\$ 2,395	\$ 163,558	1%
50	415 S. Riverside Drive	Feb-2008	744.0	\$ 63,525	1.0	\$ 14,767	\$ 8,431	\$ 1,282	\$ 12,704	\$ 37,184	\$ 125,544	30%
43	7522 313th Avenue	Jun-2008	749.0	\$ 130,620	-3.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 169,787	0%
TOTAL						\$ 268,570	\$ 167,736	\$ 8,246	\$ 264,851	\$ 709,403	\$ 8,141,177	9%

¹ Vertical datum information was not provided with the first floor elevation (FFE) information supplied by the county. Elevations were assumed to be relative to the National Geodetic Vertical Datum of 1929 (NGVD).

² Building replacement value (BRV) based on unit cost per square foot of living space for the county.

³ Project investment costs for each event only include the project costs for the buildings that were included in the analysis for that event.

Appendix C:

*Summary of Losses Avoided and ROI Calculations
for Jefferson County*

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Figure C.1

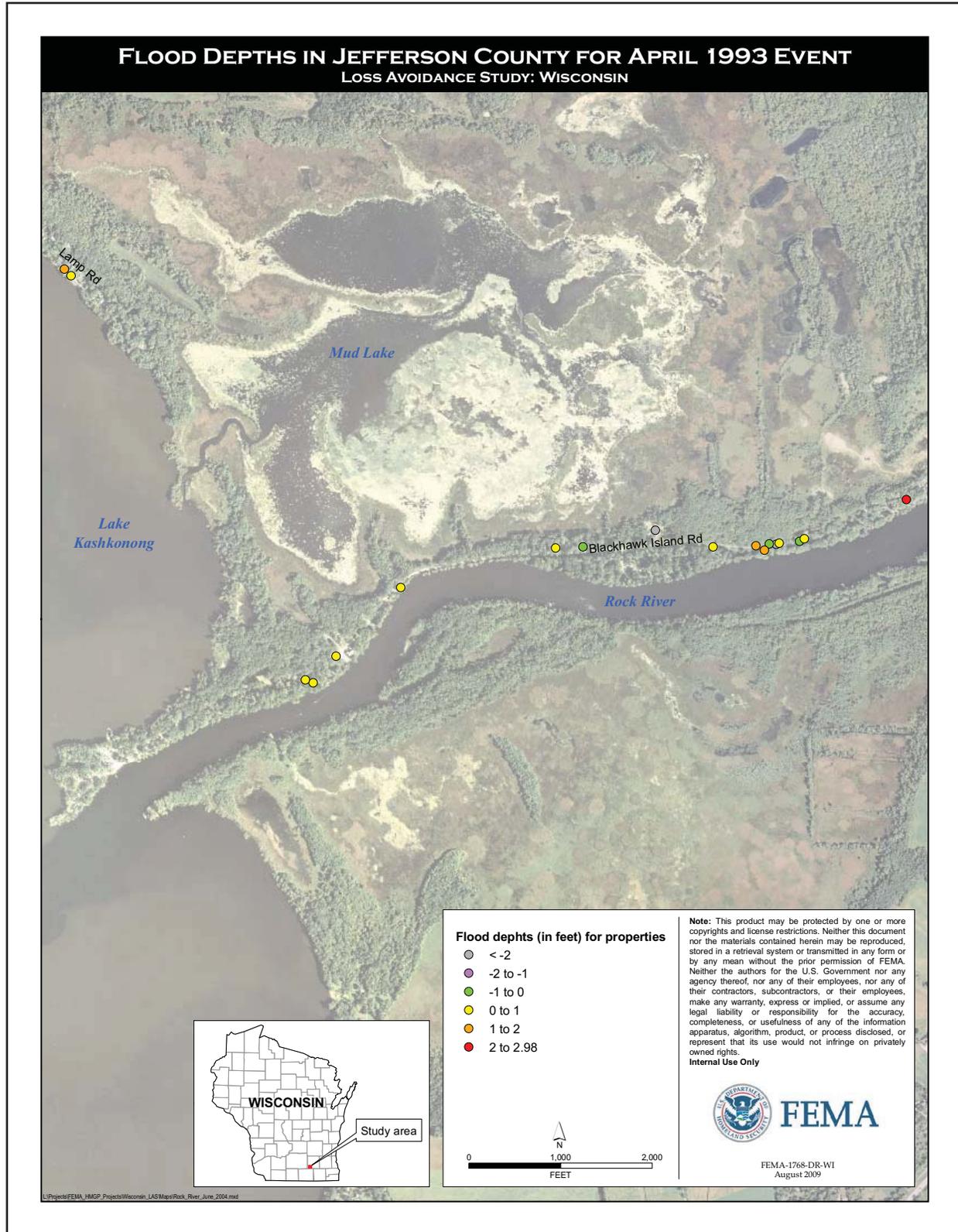


Table C.1

LOSS ESTIMATION AND ROI CALCULATIONS FOR APRIL 1993 EVENT IN JEFFERSON COUNTY												
BLDG NO.	ADDRESS	ACQUISITION COMPLETION DATE	FFE (FT, NGVD) ¹	2009 BRV ²	FLOOD DEPTH (FT)	BUILDING DAMAGE	CONTENTS DAMAGE	DISPLACEMENT COSTS	DISRUPTION COSTS	TOTAL LOSSES AVOIDED	PROJECT INVESTMENT ³	RETURN ON INVESTMENT
84	W7521 Blackhawk Island Road	Nov-1989	781.4	\$ 68,020	0.8	\$ 14,367	\$ 8,269	\$ 1,190	\$ 11,749	\$ 35,574	\$ 162,919	22%
76	W7191 Blackhawk Island Road	Sep-1995	782.0	\$ 81,225	0.2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 88,193	0%
85	W7119 Blackhawk Island Road	Nov-1995	785.4	\$ 49,685	-3.2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 144,654	0%
75	W7622 & W7624 Blackhawk Island Road	Feb-1996	782.0	\$ 148,770	0.2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 132,334	0%
74	W7352 Blackhawk Island Road	Jun-1996	782.0	\$ 66,500	0.2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 56,228	0%
82	W7664 Blackhawk Island Road	Dec-1997	782.0	\$ 83,410	0.2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 100,617	0%
78	W7091 Blackhawk Island Road	Aug-1998	783.0	\$ 203,775	-0.9	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 112,253	0%
77	W7616 Blackhawk Island Road	Feb-1999	782.0	\$ 129,675	0.2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 115,429	0%
83	W7114 Blackhawk Island Road	Mar-1999	781.8	\$ 76,000	0.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 88,296	0%
80	W7126 Blackhawk Island Road	Apr-1999	783.1	\$ 72,960	-0.9	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 86,471	0%
79	W7366 Blackhawk Island Road	Jun-1999	786.0	\$ 107,445	-3.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 170,317	0%
81	W7324 Blackhawk Island Road	Sep-1999	782.9	\$ 81,510	-0.7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 87,622	0%
87	W7143 Blackhawk Island Road	Oct-2003	780.5	\$ 33,060	1.7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 67,713	0%
89	W7679 Lamp Road	Oct-2003	781.7	\$ 65,360	0.5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 209,498	0%
88	W7139 Blackhawk Island Road	Oct-2003	780.7	\$ 74,480	1.5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 53,623	0%
86	W7084 Blackhawk Island Road	Aug-2004	781.9	\$ 71,250	0.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 70,279	0%
91	W6984 Blackhawk Island Road	Aug-2006	779.2	\$ 114,000	3.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 156,680	0%
90	W7689 Lamp Road	Mar-2008	780.9	\$ 133,000	1.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 288,474	0%
TOTAL						\$ 14,367	\$ 8,269	\$ 1,190	\$ 11,749	\$ 35,574	\$ 162,919	22%

Not included in the calculations - the acquisition was not completed before the event.

¹ Vertical datum information was not provided with the first floor elevation (FFE) information supplied by the county. Elevations were assumed to be relative to the National Geodetic Vertical Datum of 1929 (NGVD).

² Building replacement value (BRV) based on unit cost per square foot of living space for the county.

³ Project investment costs for each event only include the project costs for the buildings that were included in the analysis for that event.

Figure C.2

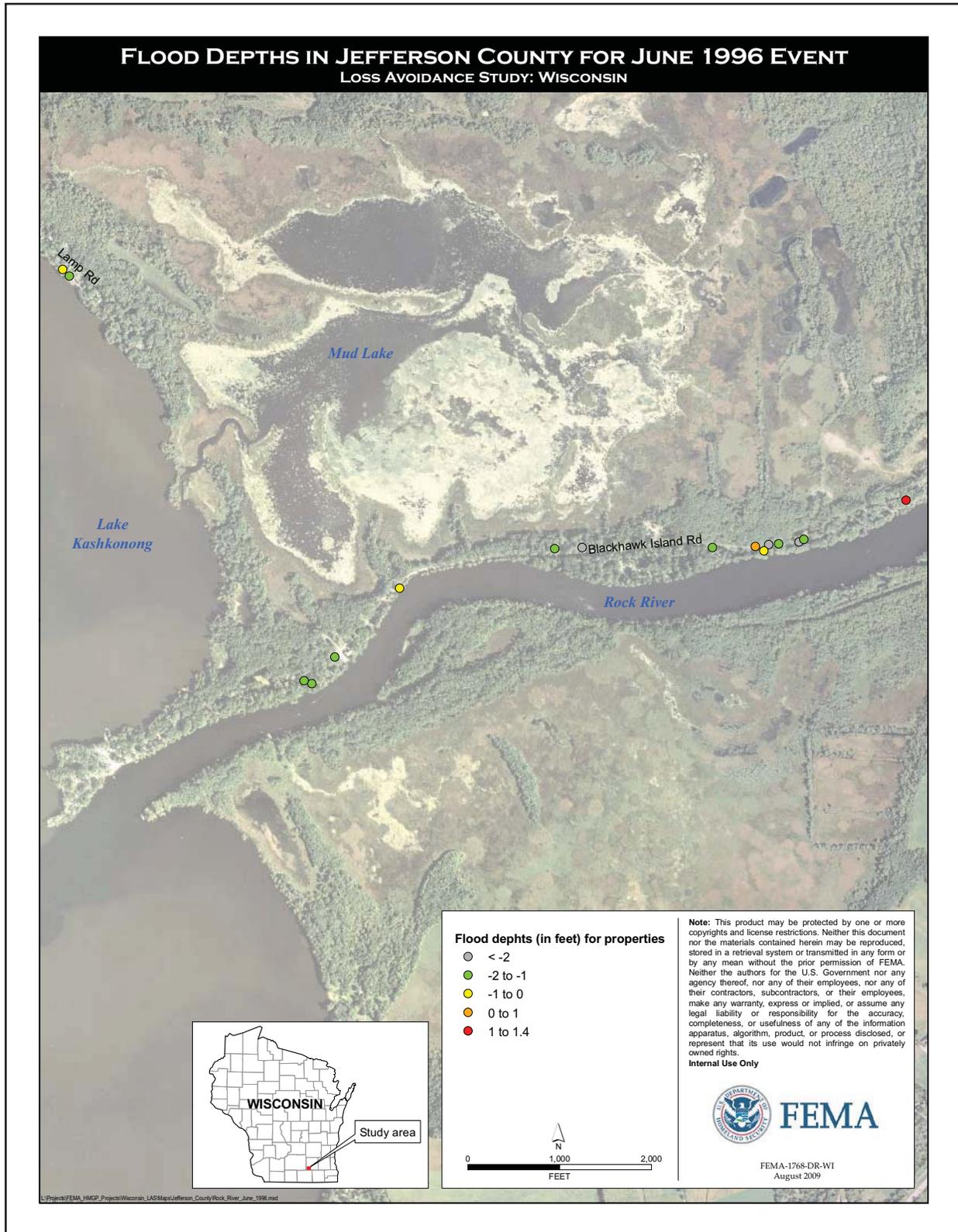


Table C.2

LOSS ESTIMATION AND ROI CALCULATIONS FOR JUNE 1996 EVENT IN JEFFERSON COUNTY												
BLDG NO.	ADDRESS	ACQUISITION COMPLETION DATE	FFE (FT, NGVD) ¹	2009 BRV ²	FLOOD DEPTH (FT)	BUILDING DAMAGE	CONTENTS DAMAGE	DISPLACEMENT COSTS	DISRUPTION COSTS	TOTAL LOSSES AVOIDED	PROJECT INVESTMENT ³	RETURN ON INVESTMENT
84	W7521 Blackhawk Island Road	Nov-1989	781.4	\$ 68,020	-0.8	\$ 3,554	\$ 2,602	\$ -	\$ 4,599	\$ 10,755	\$ 162,919	7%
76	W7191 Blackhawk Island Road	Sep-1995	782.0	\$ 81,225	-1.4	\$ 1,320	\$ 1,267	\$ -	\$ 2,980	\$ 5,567	\$ 88,193	6%
85	W7119 Blackhawk Island Road	Nov-1995	785.4	\$ 49,685	-4.7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 144,654	0%
75	W7622 & W7624 Blackhawk Island Road	Feb-1996	782.0	\$ 148,770	-1.4	\$ 2,418	\$ 2,321	\$ -	\$ 2,980	\$ 7,718	\$ 132,334	6%
74	W7352 Blackhawk Island Road	Jun-1996	782.0	\$ 66,500	-1.4	\$ 1,081	\$ 1,037	\$ -	\$ 2,980	\$ 5,098	\$ 56,228	9%
82	W7664 Blackhawk Island Road	Dec-1997	782.0	\$ 83,410	-1.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 100,617	0%
78	W7091 Blackhawk Island Road	Aug-1998	783.0	\$ 203,775	-2.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 112,253	0%
77	W7616 Blackhawk Island Road	Feb-1999	782.0	\$ 129,675	-1.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 115,429	0%
83	W7114 Blackhawk Island Road	Mar-1999	781.8	\$ 76,000	-1.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 88,296	0%
80	W7126 Blackhawk Island Road	Apr-1999	783.1	\$ 72,960	-2.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 86,471	0%
79	W7366 Blackhawk Island Road	Jun-1999	786.0	\$ 107,445	-5.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 170,317	0%
81	W7324 Blackhawk Island Road	Sep-1999	782.9	\$ 81,510	-2.2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 87,622	0%
87	W7143 Blackhawk Island Road	Oct-2003	780.5	\$ 33,060	0.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 67,713	0%
89	W7679 Lamp Road	Oct-2003	781.7	\$ 65,360	-1.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 209,498	0%
88	W7139 Blackhawk Island Road	Oct-2003	780.7	\$ 74,480	-0.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 53,623	0%
86	W7084 Blackhawk Island Road	Aug-2004	781.9	\$ 71,250	-1.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 70,279	0%
91	W6984 Blackhawk Island Road	Aug-2006	779.2	\$ 114,000	1.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 156,680	0%
90	W7689 Lamp Road	Mar-2008	780.9	\$ 133,000	-0.2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 288,474	0%
TOTAL						\$ 8,372	\$ 7,227	\$ -	\$ 13,538	\$ 29,137	\$ 584,328	5%

¹ Vertical datum information was not provided with the first floor elevation (FFE) information supplied by the county. Elevations were assumed to be relative to the National Geodetic Vertical Datum of 1929 (NGVD).

² Building replacement value (BRV) based on unit cost per square foot of living space for the county.

³ Project investment costs for each event only include the project costs for the buildings that were included in the analysis for that event.

Not included in the calculations - the acquisition was not completed before the event.

Figure C.3

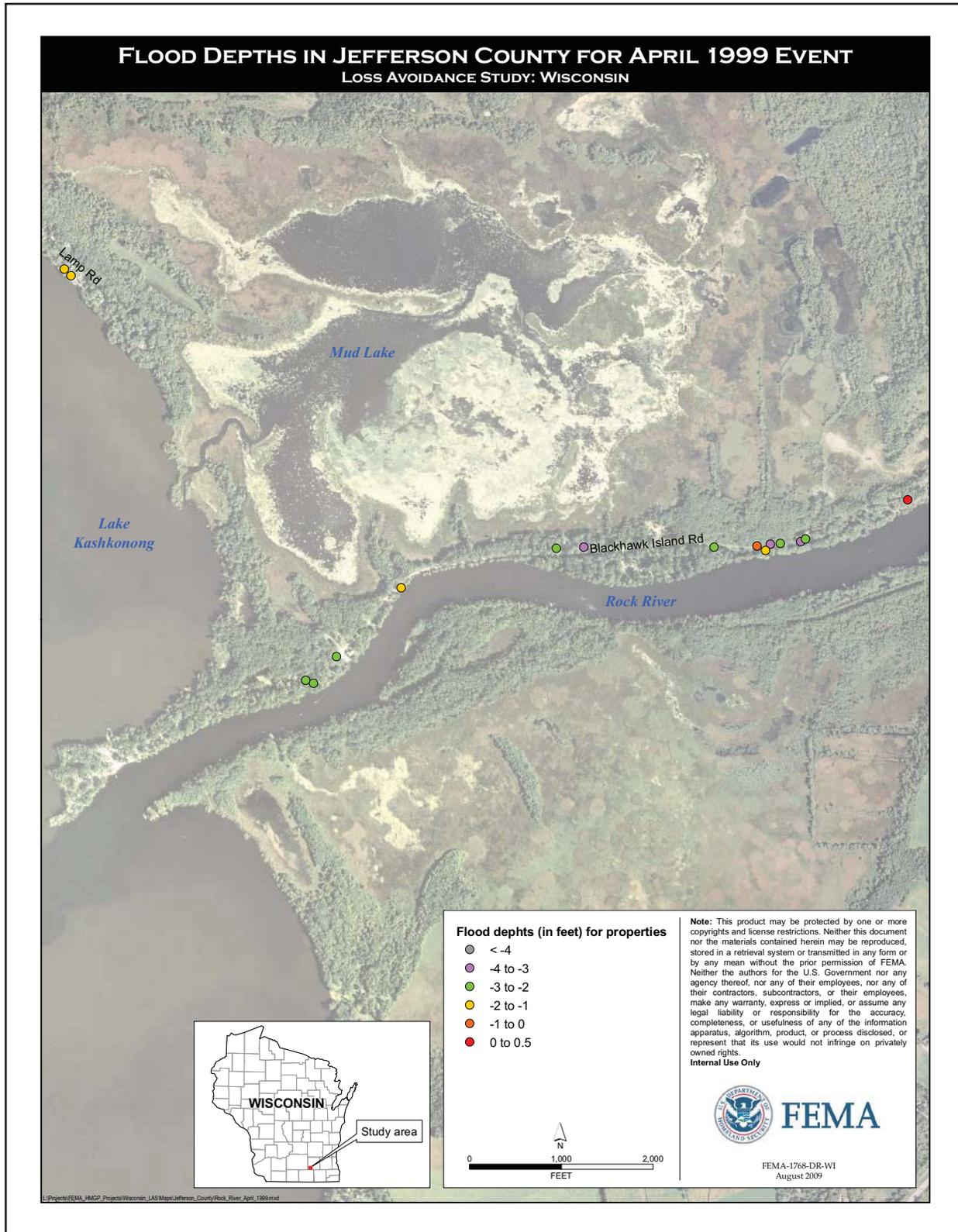


Table C.3

Loss Estimation and ROI Calculations for April 1999 Event in Jefferson County												
BLDG NO.	ADDRESS	ACQUISITION COMPLETION DATE	FFE (FT, NGVD) ¹	2009 BRV ²	FLOOD DEPTH (FT)	BUILDING DAMAGE	CONTENTS DAMAGE	DISPLACEMENT COSTS	DISRUPTION COSTS	TOTAL LOSSES AVOIDED	PROJECT INVESTMENT ³	RETURN ON INVESTMENT
84	W7521 Blackhawk Island Road	Nov-1989	781.4	\$ 68,020	-1.7	\$ 476	\$ 457	\$ -	\$ 2,564	\$ 3,497	\$ 162,919	2%
76	W7191 Blackhawk Island Road	Sep-1995	782.0	\$ 81,225	-2.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 88,193	0%
85	W7119 Blackhawk Island Road	Nov-1995	785.4	\$ 49,685	-5.7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 144,654	0%
75	W7622 & W7624 Blackhawk Island Road	Feb-1996	782.0	\$ 148,770	-2.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 132,334	0%
74	W7352 Blackhawk Island Road	Jun-1996	782.0	\$ 66,500	-2.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 56,228	0%
82	W7664 Blackhawk Island Road	Dec-1997	782.0	\$ 83,410	-2.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 100,617	0%
78	W7091 Blackhawk Island Road	Aug-1998	783.0	\$ 203,775	-3.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 112,253	0%
77	W7616 Blackhawk Island Road	Feb-1999	782.0	\$ 129,675	-2.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 115,429	0%
83	W7114 Blackhawk Island Road	Mar-1999	781.8	\$ 76,000	-2.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 88,296	0%
80	W7126 Blackhawk Island Road	Apr-1999	783.1	\$ 72,960	-3.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 86,471	0%
79	W7366 Blackhawk Island Road	Jun-1999	786.0	\$ 107,445	-6.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 170,317	0%
81	W7324 Blackhawk Island Road	Sep-1999	782.9	\$ 81,510	-3.2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 87,622	0%
87	W7143 Blackhawk Island Road	Oct-2003	780.5	\$ 33,060	-0.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 67,713	0%
89	W7679 Lamp Road	Oct-2003	781.7	\$ 65,360	-2.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 209,498	0%
88	W7139 Blackhawk Island Road	Oct-2003	780.7	\$ 74,480	-1.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 53,623	0%
86	W7084 Blackhawk Island Road	Aug-2004	781.9	\$ 71,250	-2.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 70,279	0%
91	W6984 Blackhawk Island Road	Aug-2006	779.2	\$ 114,000	0.5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 156,680	0%
90	W7689 Lamp Road	Mar-2008	780.9	\$ 133,000	-1.2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 288,474	0%
TOTAL						\$ 476	\$ 457	\$ -	\$ 2,564	\$ 3,497	\$ 1,087,395	0%

Not included in the calculations - the acquisition was not completed before the event.

¹ Vertical datum information was not provided with the first floor elevation (FFE) information supplied by the county. Elevations were assumed to be relative to the National Geodetic Vertical Datum of 1929 (NGVD).
² Building replacement value (BRV) based on unit cost per square foot of living space for the county.
³ Project investment costs for each event only include the project costs for the buildings that were included in the analysis for that event.

Figure C.4

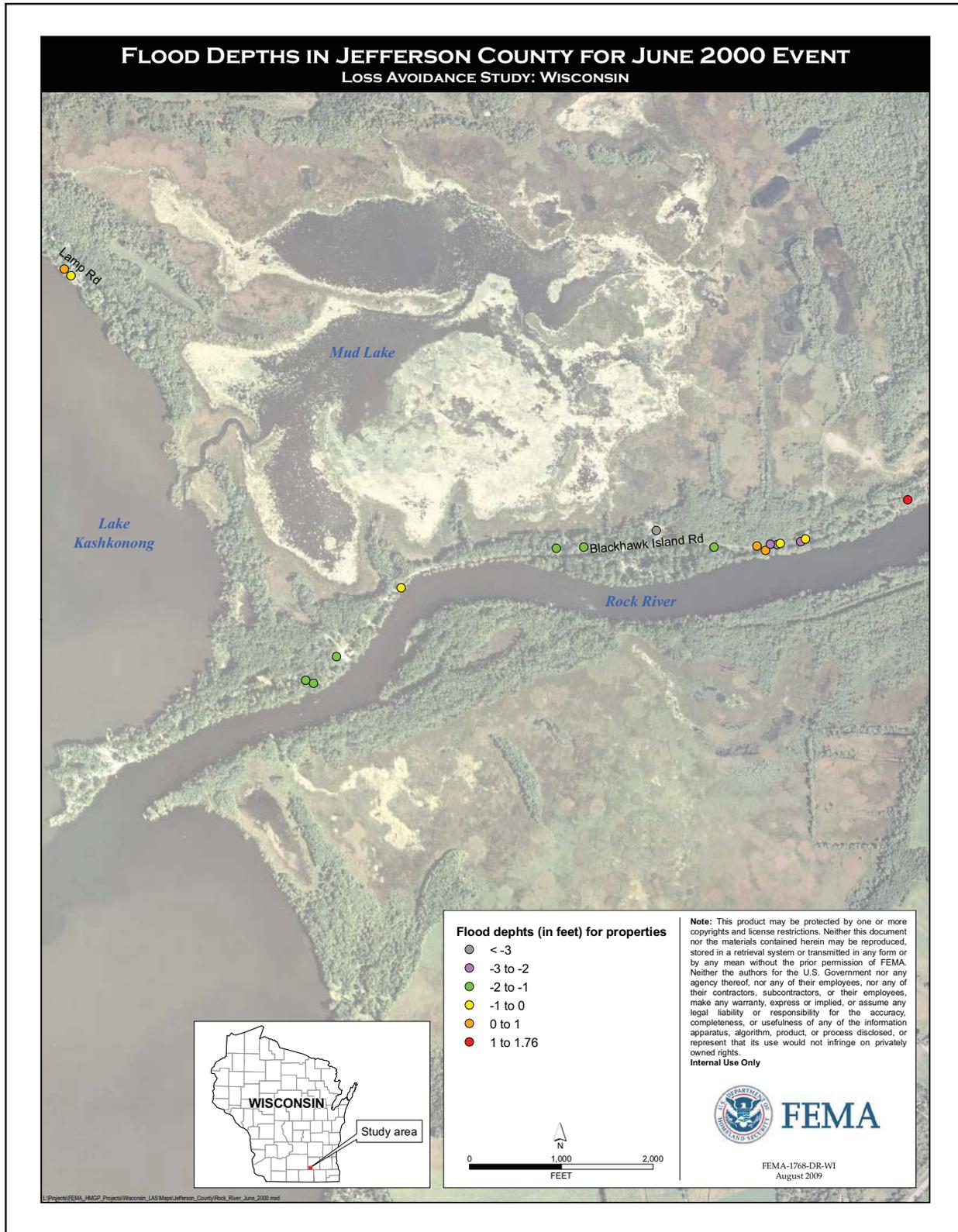


Table C.4

LOSS ESTIMATION AND ROI CALCULATIONS FOR JUNE 2000 EVENT IN JEFFERSON COUNTY												
BLDG NO.	ADDRESS	ACQUISITION COMPLETION DATE	FFE (FT, NGVD) ¹	2009 BRV ²	FLOOD DEPTH (FT)	BUILDING DAMAGE	CONTENTS DAMAGE	DISPLACEMENT COSTS	DISRUPTION COSTS	TOTAL LOSSES AVOIDED	PROJECT INVESTMENT ³	RETURN ON INVESTMENT
84	W7521 Blackhawk Island Road	Nov-1989	781.4	\$ 68,020	-0.4	\$ 5,852	\$ 3,804	\$ -	\$ 6,119	\$ 15,775	\$ 162,919	10%
76	W7191 Blackhawk Island Road	Sep-1995	782.0	\$ 81,225	-1.0	\$ 1,949	\$ 1,871	\$ -	\$ 3,328	\$ 7,149	\$ 88,193	8%
85	W7119 Blackhawk Island Road	Nov-1995	785.4	\$ 49,685	-4.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 144,654	0%
75	W7622 & W7624 Blackhawk Island Road	Feb-1996	782.0	\$ 148,770	-1.0	\$ 3,570	\$ 3,428	\$ -	\$ 3,328	\$ 10,326	\$ 132,334	8%
74	W7352 Blackhawk Island Road	Jun-1996	782.0	\$ 66,500	-1.0	\$ 1,596	\$ 1,532	\$ -	\$ 3,328	\$ 6,456	\$ 56,228	11%
82	W7664 Blackhawk Island Road	Dec-1997	782.0	\$ 83,410	-1.0	\$ 2,002	\$ 1,922	\$ -	\$ 3,328	\$ 7,252	\$ 100,617	7%
78	W7091 Blackhawk Island Road	Aug-1998	783.0	\$ 203,775	-2.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 112,253	0%
77	W7616 Blackhawk Island Road	Feb-1999	782.0	\$ 129,675	-1.0	\$ 3,112	\$ 2,988	\$ -	\$ 3,328	\$ 9,428	\$ 115,429	8%
83	W7114 Blackhawk Island Road	Mar-1999	781.8	\$ 76,000	-0.8	\$ 3,640	\$ 2,734	\$ -	\$ 4,403	\$ 10,776	\$ 88,296	12%
80	W7126 Blackhawk Island Road	Apr-1999	783.1	\$ 72,960	-2.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 86,471	0%
79	W7366 Blackhawk Island Road	Jun-1999	786.0	\$ 107,445	-5.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 170,317	0%
81	W7324 Blackhawk Island Road	Sep-1999	782.9	\$ 81,510	-1.9	\$ 163	\$ 156	\$ -	\$ 2,339	\$ 2,658	\$ 87,622	3%
87	W7143 Blackhawk Island Road	Oct-2003	780.5	\$ 33,060	0.5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 67,713	0%
89	W7679 Lamp Road	Oct-2003	781.7	\$ 65,360	-0.7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 209,498	0%
88	W7139 Blackhawk Island Road	Oct-2003	780.7	\$ 74,480	0.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 53,623	0%
86	W7084 Blackhawk Island Road	Aug-2004	781.9	\$ 71,250	-1.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 70,279	0%
91	W6984 Blackhawk Island Road	Aug-2006	779.2	\$ 114,000	1.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 156,680	0%
90	W7689 Lamp Road	Mar-2008	780.9	\$ 133,000	0.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 288,474	0%
TOTAL						\$ 21,885	\$ 18,435	\$ -	\$ 29,501	\$ 69,821	\$ 1,345,334	5%

¹ Vertical datum information was not provided with the first floor elevation (FFE) information supplied by the county. Elevations were assumed to be relative to the National Geodetic Vertical Datum of 1929 (NGVD).

² Building replacement value (BRV) based on unit cost per square foot of living space for the county.

³ Project investment costs for each event only include the project costs for the buildings that were included in the analysis for that event.

Not included in the calculations - the acquisition was not completed before the event.

Figure C.5

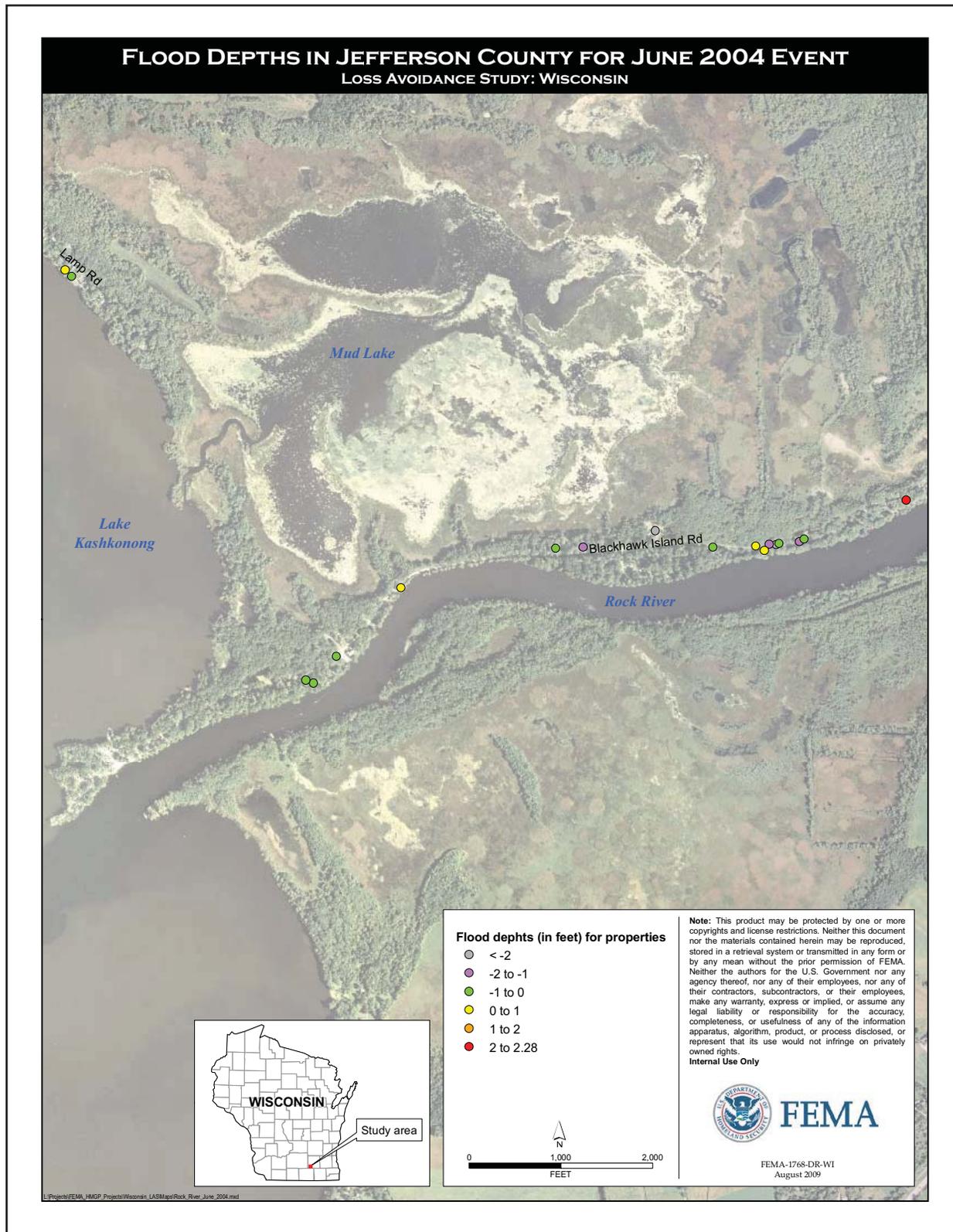


Table C.5

Loss Estimation and ROI Calculations for June 2004 Event in Jefferson County												
BLDG NO.	ADDRESS	ACQUISITION COMPLETION DATE	FFE (FT, NGVD) ¹	2009 BRV ²	FLOOD DEPTH (FT)	BUILDING DAMAGE	CONTENTS DAMAGE	DISPLACEMENT COSTS	DISRUPTION COSTS	TOTAL LOSSES AVOIDED	PROJECT INVESTMENT ³	RETURN ON INVESTMENT
84	W7521 Blackhawk Island Road	Nov-1989	781.4	\$ 68,020	0.1	\$ 9,653	\$ 5,793	\$ 122	\$ 8,632	\$ 24,200	\$ 162,919	15%
76	W7191 Blackhawk Island Road	Sep-1995	782.0	\$ 81,225	-0.5	\$ 6,280	\$ 4,172	\$ -	\$ 5,726	\$ 16,178	\$ 88,193	18%
85	W7119 Blackhawk Island Road	Nov-1995	785.4	\$ 49,685	-3.9	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 144,654	0%
75	W7622 & W7624 Blackhawk Island Road	Feb-1996	782.0	\$ 148,770	-0.5	\$ 11,503	\$ 7,641	\$ -	\$ 5,726	\$ 24,870	\$ 132,334	19%
74	W7352 Blackhawk Island Road	Jun-1996	782.0	\$ 66,500	-0.5	\$ 5,142	\$ 3,415	\$ -	\$ 5,726	\$ 14,284	\$ 56,228	25%
82	W7664 Blackhawk Island Road	Dec-1997	782.0	\$ 83,410	-0.5	\$ 6,449	\$ 4,284	\$ -	\$ 5,726	\$ 16,460	\$ 100,617	16%
78	W7091 Blackhawk Island Road	Aug-1998	783.0	\$ 203,775	-1.5	\$ 2,292	\$ 2,201	\$ -	\$ 2,755	\$ 7,248	\$ 112,253	6%
77	W7616 Blackhawk Island Road	Feb-1999	782.0	\$ 129,675	-0.5	\$ 10,026	\$ 6,660	\$ -	\$ 5,726	\$ 22,413	\$ 115,429	19%
83	W7114 Blackhawk Island Road	Mar-1999	781.8	\$ 76,000	-0.3	\$ 7,947	\$ 4,986	\$ -	\$ 6,952	\$ 19,886	\$ 88,296	23%
80	W7126 Blackhawk Island Road	Apr-1999	783.1	\$ 72,960	-1.6	\$ 730	\$ 700	\$ -	\$ 2,699	\$ 4,129	\$ 86,471	5%
79	W7366 Blackhawk Island Road	Jun-1999	786.0	\$ 107,445	-4.5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 170,317	0%
81	W7324 Blackhawk Island Road	Sep-1999	782.9	\$ 81,510	-1.4	\$ 1,223	\$ 1,174	\$ -	\$ 2,923	\$ 5,320	\$ 87,622	6%
87	W7143 Blackhawk Island Road	Oct-2003	780.5	\$ 33,060	1.0	\$ 7,638	\$ 4,363	\$ 727	\$ 12,639	\$ 25,366	\$ 67,713	37%
89	W7679 Lamp Road	Oct-2003	781.7	\$ 65,360	-0.2	\$ 7,547	\$ 4,661	\$ -	\$ 7,442	\$ 19,650	\$ 209,498	9%
88	W7139 Blackhawk Island Road	Oct-2003	780.7	\$ 74,480	0.8	\$ 15,732	\$ 9,054	\$ 1,303	\$ 11,749	\$ 37,837	\$ 53,623	71%
86	W7084 Blackhawk Island Road	Aug-2004	781.9	\$ 71,250	-0.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 70,279	0%
91	W6984 Blackhawk Island Road	Aug-2006	779.2	\$ 114,000	2.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 156,680	0%
90	W7689 Lamp Road	Mar-2008	780.9	\$ 133,000	0.6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 288,474	0%
TOTAL						\$ 92,162	\$ 59,103	\$ 2,151	\$ 84,422	\$ 237,839	\$ 1,676,168	14%

¹ Vertical datum information was not provided with the first floor elevation (FFE) information supplied by the county. Elevations were assumed to be relative to the National Geodetic Vertical Datum of 1929 (NGVD).

² Building replacement value (BRV) based on unit cost per square foot of living space for the county.

³ Project investment costs for each event only include the project costs for the buildings that were included in the analysis for that event.

Not included in the calculations - the acquisition was not completed before the event.

Figure C.6

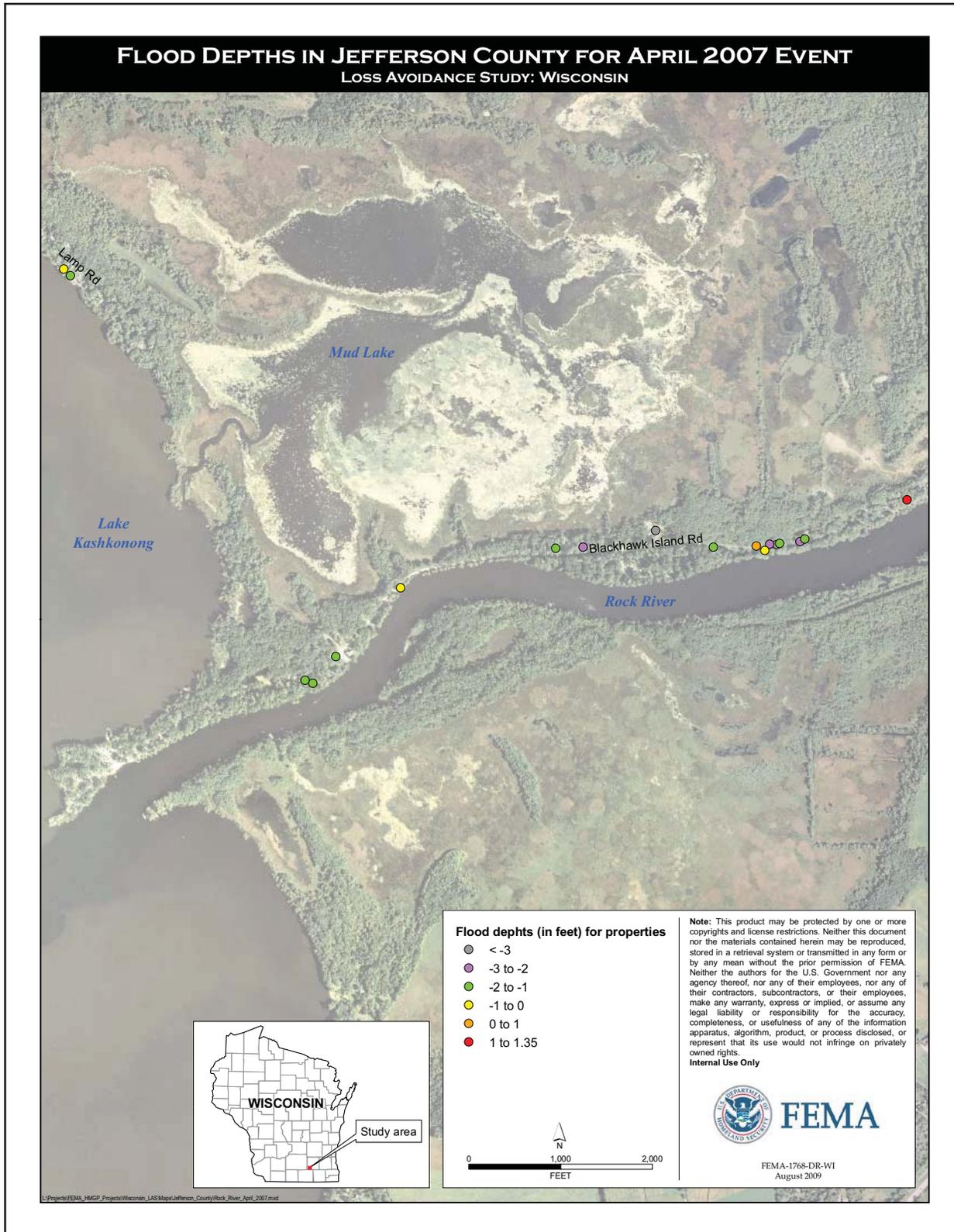


Table C.6

Loss Estimation and ROI Calculations for April 2007 Event in Jefferson County												
BLDG NO.	ADDRESS	ACQUISITION COMPLETION DATE	FFE (FT, NGVD) ¹	2009 BRV ²	FLOOD DEPTH (FT)	BUILDING DAMAGE	CONTENTS DAMAGE	DISPLACEMENT COSTS	DISRUPTION COSTS	TOTAL LOSSES AVOIDED	PROJECT INVESTMENT ³	RETURN ON INVESTMENT
84	W7521 Blackhawk Island Road	Nov-1989	781.4	\$ 68,020	-0.9	\$ 2,813	\$ 2,214	\$ -	\$ 4,109	\$ 9,135	\$ 162,919	6%
76	W7191 Blackhawk Island Road	Sep-1995	782.0	\$ 81,225	-1.5	\$ 1,117	\$ 1,072	\$ -	\$ 2,867	\$ 5,056	\$ 88,193	6%
85	W7119 Blackhawk Island Road	Nov-1995	785.4	\$ 49,685	-4.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 144,654	0%
75	W7622 & W7624 Blackhawk Island Road	Feb-1996	782.0	\$ 148,770	-1.5	\$ 2,046	\$ 1,964	\$ -	\$ 2,867	\$ 6,877	\$ 132,334	5%
74	W7352 Blackhawk Island Road	Jun-1996	782.0	\$ 66,500	-1.5	\$ 914	\$ 878	\$ -	\$ 2,867	\$ 4,659	\$ 56,228	8%
82	W7664 Blackhawk Island Road	Dec-1997	782.0	\$ 83,410	-1.5	\$ 1,147	\$ 1,101	\$ -	\$ 2,867	\$ 5,115	\$ 100,617	5%
78	W7091 Blackhawk Island Road	Aug-1998	783.0	\$ 203,775	-2.5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 112,253	0%
77	W7616 Blackhawk Island Road	Feb-1999	782.0	\$ 129,675	-1.5	\$ 1,783	\$ 1,712	\$ -	\$ 2,867	\$ 6,362	\$ 115,429	6%
83	W7114 Blackhawk Island Road	Mar-1999	781.8	\$ 76,000	-1.2	\$ 1,520	\$ 1,459	\$ -	\$ 3,148	\$ 6,128	\$ 88,296	7%
80	W7126 Blackhawk Island Road	Apr-1999	783.1	\$ 72,960	-2.5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 86,471	0%
79	W7366 Blackhawk Island Road	Jun-1999	786.0	\$ 107,445	-5.5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 170,317	0%
81	W7324 Blackhawk Island Road	Sep-1999	782.9	\$ 81,510	-2.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 87,622	0%
87	W7143 Blackhawk Island Road	Oct-2003	780.5	\$ 33,060	0.0	\$ 4,594	\$ 2,764	\$ 37	\$ 8,498	\$ 15,893	\$ 67,713	23%
89	W7679 Lamp Road	Oct-2003	781.7	\$ 65,360	-1.1	\$ 1,471	\$ 1,412	\$ -	\$ 3,261	\$ 6,143	\$ 209,498	3%
88	W7139 Blackhawk Island Road	Oct-2003	780.7	\$ 74,480	-0.2	\$ 8,763	\$ 5,396	\$ -	\$ 7,540	\$ 21,699	\$ 53,623	40%
86	W7084 Blackhawk Island Road	Aug-2004	781.9	\$ 71,250	-1.4	\$ 1,104	\$ 1,060	\$ -	\$ 2,946	\$ 5,111	\$ 70,279	7%
91	W6984 Blackhawk Island Road	Aug-2006	779.2	\$ 114,000	1.3	\$ 30,073	\$ 16,997	\$ 3,451	\$ 14,113	\$ 64,635	\$ 156,680	41%
90	W7689 Lamp Road	Mar-2008	780.9	\$ 133,000	-0.3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 288,474	0%
TOTAL						\$ 57,344	\$ 38,029	\$ 3,488	\$ 57,952	\$ 156,813	\$ 1,903,128	8%

Not included in the calculations - the acquisition was not completed before the event.

¹ Vertical datum information was not provided with the first floor elevation (FFE) information supplied by the county. Elevations were assumed to be relative to the National Geodetic Vertical Datum of 1929 (NGVD).

² Building replacement value (BRV) based on unit cost per square foot of living space for the county.

³ Project investment costs for each event only include the project costs for the buildings that were included in the analysis for that event.

Figure C.7

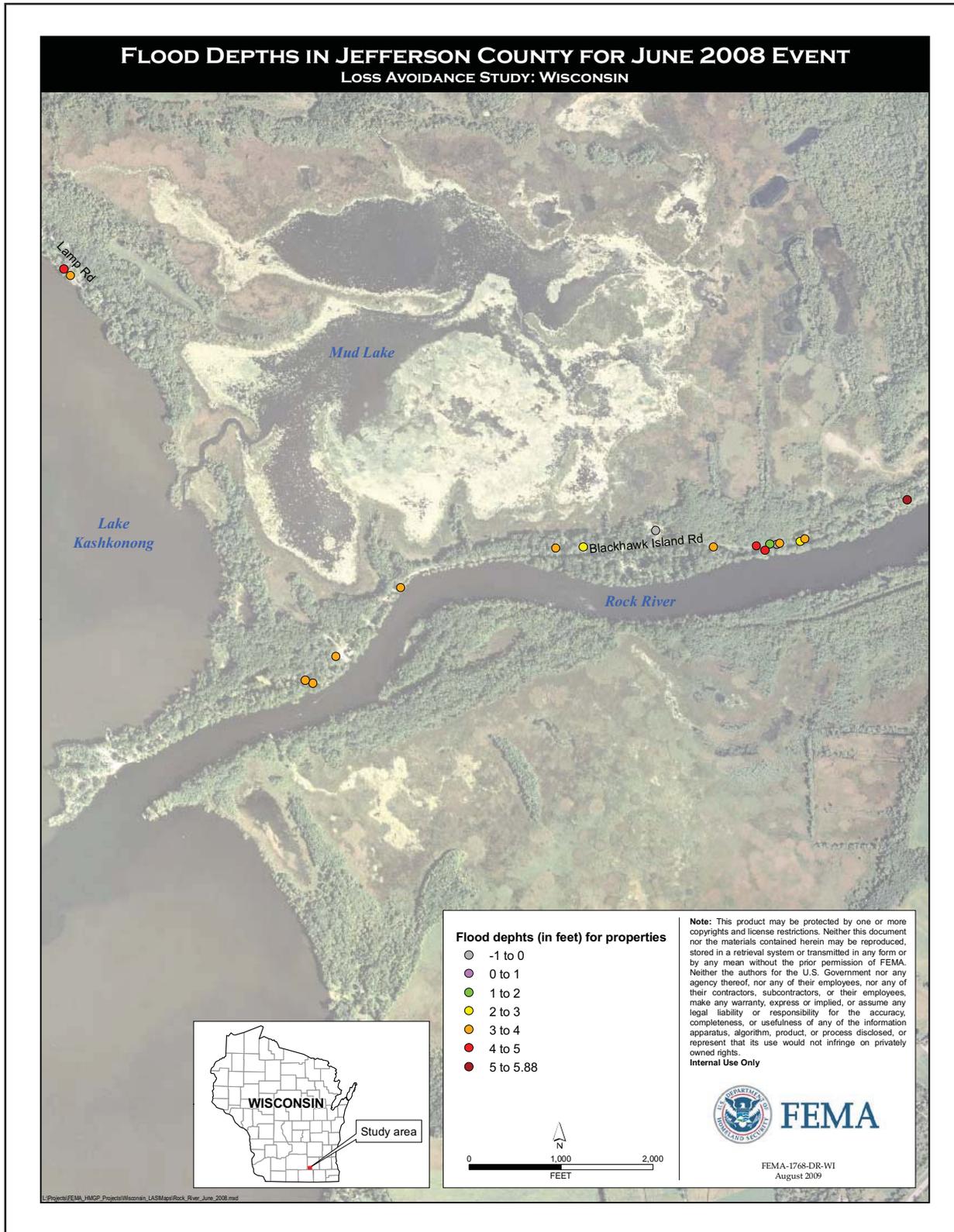


Table C.7

LOSS ESTIMATION AND ROI CALCULATIONS FOR JUNE 2008 EVENT IN JEFFERSON COUNTY												
BLDG NO.	ADDRESS	ACQUISITION COMPLETION DATE	FFE (FT, NGVD) ¹	2009 BRV ²	FLOOD DEPTH (FT)	BUILDING DAMAGE	CONTENTS DAMAGE	DISPLACEMENT COSTS	DISRUPTION COSTS	TOTAL LOSSES AVOIDED	PROJECT INVESTMENT ³	RETURN ON INVESTMENT
84	W7521 Blackhawk Island Road	Nov-1989	781.4	\$ 68,020	3.7	\$ 30,514	\$ 16,676	\$ 5,613	\$ 22,425	\$ 75,228	\$ 162,919	46%
76	W7191 Blackhawk Island Road	Sep-1995	782.0	\$ 81,225	3.1	\$ 33,026	\$ 18,110	\$ 5,610	\$ 20,536	\$ 77,282	\$ 88,193	88%
85	W7119 Blackhawk Island Road	Nov-1995	785.4	\$ 49,685	-0.3	\$ 5,141	\$ 3,232	\$ -	\$ 6,903	\$ 15,276	\$ 144,654	11%
75	W7622 & W7624 Blackhawk Island Road	Feb-1996	782.0	\$ 148,770	3.1	\$ 60,490	\$ 33,170	\$ 10,276	\$ 20,536	\$ 124,471	\$ 132,334	94%
74	W7352 Blackhawk Island Road	Jun-1996	782.0	\$ 66,500	3.1	\$ 27,039	\$ 14,827	\$ 4,593	\$ 20,536	\$ 66,995	\$ 56,228	119%
82	W7664 Blackhawk Island Road	Dec-1997	782.0	\$ 83,410	3.1	\$ 33,915	\$ 18,597	\$ 5,761	\$ 20,536	\$ 78,809	\$ 100,617	78%
78	W7091 Blackhawk Island Road	Aug-1998	783.0	\$ 203,775	2.1	\$ 66,227	\$ 36,893	\$ 9,368	\$ 16,866	\$ 129,354	\$ 112,253	115%
77	W7616 Blackhawk Island Road	Feb-1999	782.0	\$ 129,675	3.1	\$ 52,726	\$ 28,912	\$ 8,957	\$ 20,536	\$ 111,131	\$ 115,429	96%
83	W7114 Blackhawk Island Road	Mar-1999	781.8	\$ 76,000	3.3	\$ 32,232	\$ 17,648	\$ 5,675	\$ 21,323	\$ 76,878	\$ 88,296	87%
80	W7126 Blackhawk Island Road	Apr-1999	783.1	\$ 72,960	2.0	\$ 23,420	\$ 13,060	\$ 3,272	\$ 16,686	\$ 56,438	\$ 86,471	65%
79	W7366 Blackhawk Island Road	Jun-1999	786.0	\$ 107,445	-0.9	\$ 3,389	\$ 2,946	\$ -	\$ 3,667	\$ 10,002	\$ 170,317	6%
81	W7324 Blackhawk Island Road	Sep-1999	782.9	\$ 81,510	2.2	\$ 27,469	\$ 15,259	\$ 4,021	\$ 17,406	\$ 64,155	\$ 87,622	73%
87	W7143 Blackhawk Island Road	Oct-2003	780.5	\$ 33,060	4.6	\$ 33,060	\$ 9,091	\$ 3,396	\$ 25,024	\$ 70,570	\$ 67,713	104%
89	W7679 Lamp Road	Oct-2003	781.7	\$ 65,360	3.4	\$ 28,177	\$ 15,419	\$ 5,027	\$ 21,638	\$ 70,261	\$ 209,498	34%
88	W7139 Blackhawk Island Road	Oct-2003	780.7	\$ 74,480	4.4	\$ 36,807	\$ 20,019	\$ 7,316	\$ 24,475	\$ 88,616	\$ 53,623	165%
86	W7084 Blackhawk Island Road	Aug-2004	781.9	\$ 71,250	3.2	\$ 29,319	\$ 16,070	\$ 5,033	\$ 20,756	\$ 71,179	\$ 70,279	101%
91	W6984 Blackhawk Island Road	Aug-2006	779.2	\$ 114,000	5.9	\$ 114,000	\$ 35,541	\$ 15,032	\$ 28,313	\$ 192,886	\$ 156,680	123%
90	W7689 Lamp Road	Mar-2008	780.9	\$ 133,000	4.2	\$ 43,103	\$ 25,387	\$ 12,557	\$ 16,825	\$ 97,871	\$ 288,474	34%
TOTAL						\$ 680,052	\$ 340,856	\$ 111,508	\$ 344,988	\$ 1,477,403	\$ 2,191,601	67%

¹ Vertical datum information was not provided with the first floor elevation (FFE) information supplied by the county. Elevations were assumed to be relative to the National Geodetic Vertical Datum of 1929 (NGVD).

² Building replacement value (BRV) based on unit cost per square foot of living space for the county.

³ Project investment costs for each event only include the project costs for the buildings that were included in the analysis for that event.

Not included in the calculations - the acquisition was not completed before the event.

Figure C.8

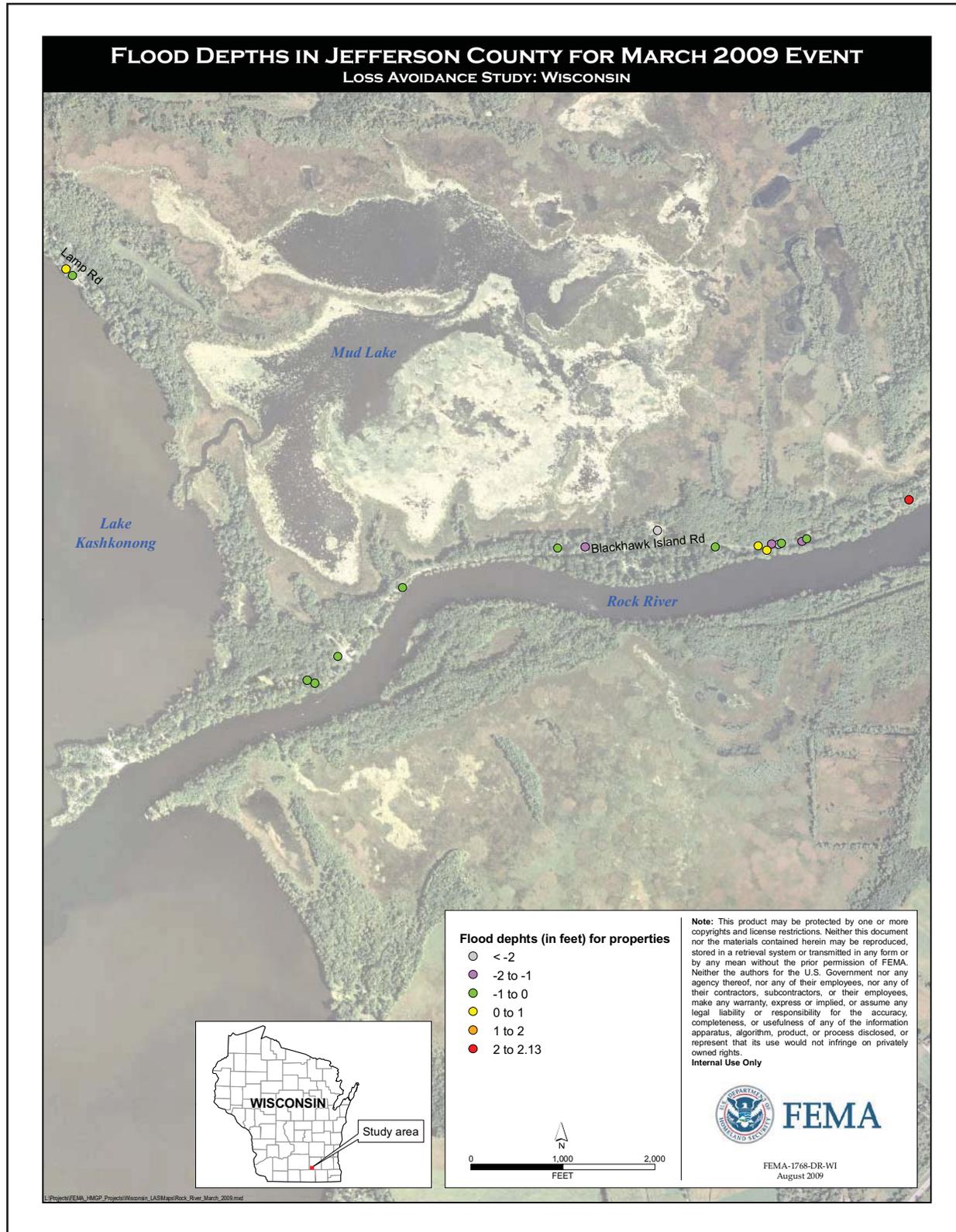


Table C.8

LOSS ESTIMATION AND ROI CALCULATIONS FOR MARCH 2009 EVENT IN JEFFERSON COUNTY												
BLDG NO.	ADDRESS	ACQUISITION COMPLETION DATE	FFE (FT, NGVD) ¹	2009 BRV ²	FLOOD DEPTH (FT)	BUILDING DAMAGE	CONTENTS DAMAGE	DISPLACEMENT COSTS	DISRUPTION COSTS	TOTAL LOSSES AVOIDED	PROJECT INVESTMENT ³	RETURN ON INVESTMENT
84	W7521 Blackhawk Island Road	Nov-1989	781.4	\$ 68,020	-0.1	\$ 8,596	\$ 5,238	\$ -	\$ 7,932	\$ 21,766	\$ 162,919	13%
76	W7191 Blackhawk Island Road	Sep-1995	782.0	\$ 81,225	-0.7	\$ 4,952	\$ 3,477	\$ -	\$ 4,991	\$ 13,421	\$ 88,193	15%
85	W7119 Blackhawk Island Road	Nov-1995	785.4	\$ 49,685	-4.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 144,654	0%
75	W7622 & W7624 Blackhawk Island Road	Feb-1996	782.0	\$ 148,770	-0.7	\$ 9,071	\$ 6,369	\$ -	\$ 4,991	\$ 20,430	\$ 132,334	15%
74	W7352 Blackhawk Island Road	Jun-1996	782.0	\$ 66,500	-0.7	\$ 4,055	\$ 2,847	\$ -	\$ 4,991	\$ 11,892	\$ 56,228	21%
82	W7664 Blackhawk Island Road	Dec-1997	782.0	\$ 83,410	-0.7	\$ 5,086	\$ 3,571	\$ -	\$ 4,991	\$ 13,647	\$ 100,617	14%
78	W7091 Blackhawk Island Road	Aug-1998	783.0	\$ 203,775	-1.7	\$ 1,528	\$ 1,467	\$ -	\$ 2,586	\$ 5,582	\$ 112,253	5%
77	W7616 Blackhawk Island Road	Feb-1999	782.0	\$ 129,675	-0.7	\$ 7,906	\$ 5,551	\$ -	\$ 4,991	\$ 18,449	\$ 115,429	16%
83	W7114 Blackhawk Island Road	Mar-1999	781.8	\$ 76,000	-0.4	\$ 6,705	\$ 4,337	\$ -	\$ 6,217	\$ 17,258	\$ 88,296	20%
80	W7126 Blackhawk Island Road	Apr-1999	783.1	\$ 72,960	-1.8	\$ 456	\$ 438	\$ -	\$ 2,530	\$ 3,424	\$ 86,471	4%
79	W7366 Blackhawk Island Road	Jun-1999	786.0	\$ 107,445	-4.7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 170,317	0%
81	W7324 Blackhawk Island Road	Sep-1999	782.9	\$ 81,510	-1.5	\$ 917	\$ 880	\$ -	\$ 2,755	\$ 4,552	\$ 87,622	5%
87	W7143 Blackhawk Island Road	Oct-2003	780.5	\$ 33,060	0.8	\$ 7,147	\$ 4,105	\$ 615	\$ 11,971	\$ 23,838	\$ 67,713	35%
89	W7679 Lamp Road	Oct-2003	781.7	\$ 65,360	-0.3	\$ 6,478	\$ 4,102	\$ -	\$ 6,707	\$ 17,287	\$ 209,498	8%
88	W7139 Blackhawk Island Road	Oct-2003	780.7	\$ 74,480	0.6	\$ 14,626	\$ 8,473	\$ 1,052	\$ 11,081	\$ 35,231	\$ 53,623	66%
86	W7084 Blackhawk Island Road	Aug-2004	781.9	\$ 71,250	-0.6	\$ 4,888	\$ 3,335	\$ -	\$ 5,334	\$ 13,556	\$ 70,279	19%
91	W6984 Blackhawk Island Road	Aug-2006	779.2	\$ 114,000	2.1	\$ 37,780	\$ 21,014	\$ 5,445	\$ 17,154	\$ 81,392	\$ 156,680	52%
90	W7689 Lamp Road	Mar-2008	780.9	\$ 133,000	0.5	\$ 15,979	\$ 8,914	\$ 1,372	\$ 7,652	\$ 33,916	\$ 288,474	12%
TOTAL						\$ 136,167	\$ 84,116	\$ 8,485	\$ 106,874	\$ 335,643	\$ 2,191,601	15%

Not included in the calculations - the acquisition was not completed before the event.

¹ Vertical datum information was not provided with the first floor elevation (FFE) information supplied by the county. Elevations were assumed to be relative to the National Geodetic Vertical Datum of 1929 (NGVD).

² Building replacement value (BRV) based on unit cost per square foot of living space for the county.

³ Project investment costs for each event only include the project costs for the buildings that were included in the analysis for that event.

Appendix D:

*Summary of Losses Avoided and ROI Calculations
for Crawford County*

LIST OF FIGURES AND TABLES

Figure D.1 Flood Depths in Crawford County for August 2007 and June 2008 Event.....D-3

Table D.1 Losses Estimation and ROI Calculations for Crawford, August 2007 and June 2008 Event....D-4

Figure D.1

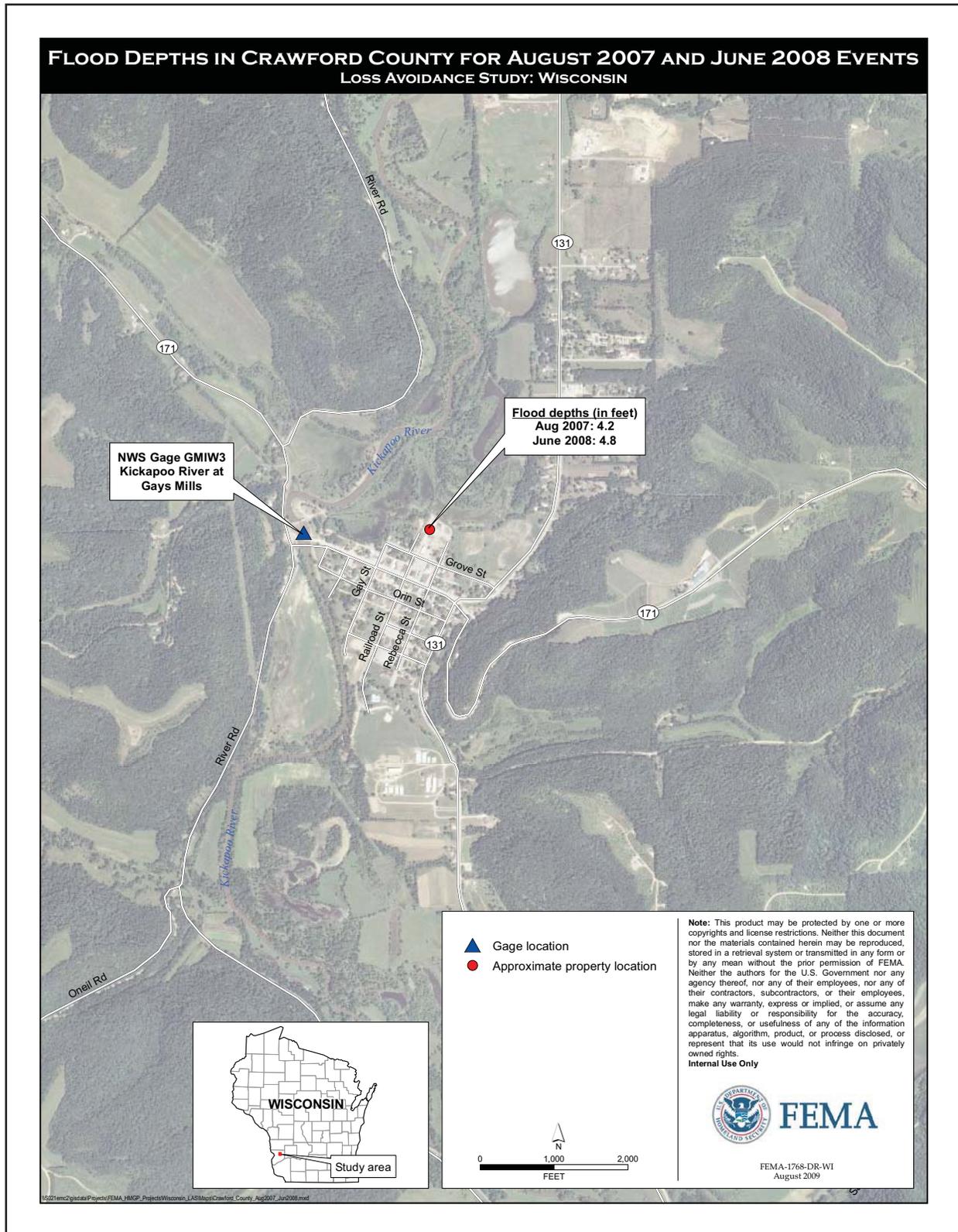


Table D.1

LOSS ESTIMATION AND ROI CALCULATIONS FOR AUGUST 2007 AND JUNE 2008 EVENTS IN CRAWFORD COUNTY													
BLDG NO.	ADDRESS	STORM EVENT DATE	ACQUISITION COMPLETION DATE	FFE (FT. NGVD) ¹	2009 BRV ²	FLOOD DEPTH (FT)	BUILDING DAMAGE	CONTENTS DAMAGE	DISPLACEMENT COSTS	LOSS OF FUNCTION ³	TOTAL LOSSES AVOIDED	PROJECT INVESTMENT	RETURN ON INVESTMENT
92	118 North Railroad	Aug-2007	Jan-2005	700.6	\$ 1,180,542	4.1	\$ 313,198	\$ 239,331	\$ -	\$ 1,282,521	\$ 1,835,050	\$ 663,780	276%
92	118 North Railroad	Jun-2008	Jan-2005	700.6	\$ 1,180,542	4.8	\$ 345,427	\$ 265,575	\$ -	\$ 1,483,397	\$ 2,094,399	\$ 663,780	316%
TOTAL							\$ 658,624	\$ 504,906	\$ -	\$ 2,765,918	\$ 3,929,449	\$ 663,780	592%

¹ Vertical datum information was not provided with the first floor elevation (FFE) information supplied by the county. Elevations were assumed to be relative to the National Geodetic Vertical Datum of 1929 (NGVD).

² Building replacement value (BRV) based on unit cost per square foot of living space for the county.

³ This value will be filled in for the next draft once estimates of business income are obtained.

Appendix E:

*Summary of Losses Avoided and ROI Calculations
for All Events*

LIST OF TABLES

Table E.1 Losses Estimation and ROI Calculations for All Events E-3

Table E.1 Part 1 of 4

SUMMARY OF LOSSES AVOIDED AND ROI CALCULATIONS BY COUNTY FOR ALL EVENTS					
BUILDING NUMBER	ADDRESS	ACQUISITION COMPLETION DATE	2009 VALUE OF ACQUISITION COST (INCLUDING DEMO COST)	TOTAL LOSSES AVOIDED	ROI (%)
1	6712 Wheatland Road, Wheatland	December-2000	\$122,709	\$0	0%
2	31809 77th Street, Wheatland	October-2001	\$34,954	\$43,095	123%
3	31417 77th Street, Wheatland	October-2002	\$114,648	\$193,387	169%
4	31733 77th Street, Wheatland	October-2001	\$35,951	\$200,226	557%
5	31826 77th Street, Wheatland	October-2001	\$99,666	\$29,037	29%
6	31727 77th Street, Wheatland	November-2001	\$55,294	\$77,794	141%
7	31911 77th Street, Wheatland	October-2001	\$83,304	\$136,212	164%
8	31805 71st Street, Wheatland	June-2000	\$203,279	\$87,159	43%
9	32114 77th Street, Wheatland	October-2001	\$103,368	\$5,086	5%
10	31638 76th Street, Wheatland	July-2000	\$166,468	\$64,428	39%
11	32132 77th Street, Wheatland	December-1999	\$90,458	\$121,760	135%
12	31823 77th Street, Wheatland	December-1999	\$116,432	\$12,040	10%
13	32005 77th Street, Wheatland	October-2002	\$119,677	\$134,084	112%
14	8153 Shorewood Drive, Salem	July-2000	\$115,113	\$71,060	62%
15	8200 No. Riverside Drive, Salem	September-2002	\$130,863	\$62,813	48%
16	31811 71st Street, Wheatland	June-2000	\$93,912	\$153,402	163%
17	31519 77th Street, Wheatland	June-2000	\$105,167	\$160,535	153%
18	6929 319th Avenue, Wheatland	June-2000	\$98,058	\$89,610	91%
19	8032 Shorewood Drive, Salem	October-2002	\$133,702	\$251,390	188%
20	31533 77th Street, Wheatland	October-2002	\$42,029	\$18,778	45%
21	607 So. Riverside Drive, Silver Lake	Sep-04	\$108,830	\$59,197	54%
22	445 So. Riverside Drive, Silver Lake	Feb-03	\$100,568	\$105,763	105%
23	6940 317th Avenue, Wheatland	Feb-02	\$130,769	\$3,507	3%
24	31701 77th Street, Wheatland	Oct-02	\$82,325	\$15,119	18%
25	6912 318th Avenue, Wheatland	Oct-02	\$87,774	\$51,154	58%
26	30522 80th Street, Salem	Jun-06	\$110,106	\$87,720	80%
27	32025 77th Street, Wheatland	Jan-02	\$119,301	\$76,705	64%

Table E.1 Part 2 of 4

SUMMARY OF LOSSES AVOIDED AND ROI CALCULATIONS BY COUNTY FOR ALL EVENTS					
BUILDING NUMBER	ADDRESS	ACQUISITION COMPLETION DATE	2009 VALUE OF ACQUISITION COST (INCLUDING DEMO COST)	TOTAL LOSSES AVOIDED	ROI (%)
28	31711 71st Street, Wheatland	Oct-01	\$113,134	\$50,331	44%
29	31822 71st Street, Wheatland	Sep-01	\$146,597	\$89,739	61%
30	31715 71st Street, Wheatland	May-03	\$86,360	\$42,927	50%
31	501 So. Riverside Drive, Silver Lake	Oct-03	\$129,181	\$180,923	140%
32	31709 77th Street, Wheatland	Jan-03	\$80,759	\$50,357	62%
33	31901 71st Street, Wheatland	Jan-07	\$121,564	\$0	0%
34	7956 Shorewood Drive, Salem	Jan-03	\$111,428	\$118,311	106%
35	7536 313th Avenue, Wheatland	Jun-06	\$129,190	\$39,231	30%
36	511 S. Riverside Drive, Silver Lake	Jun-06	\$59,472	\$145,718	245%
37	606 Wisconsin Avenue, Silver Lake	Jun-06	\$114,398	\$139,006	122%
38	6913 319th Avenue, Wheatland	Dec-05	\$1,348	\$0	0%
39	7600 313th Street, Wheatland	Aug-06	\$96,803	\$70,113	72%
40	30510 80th Street, Salem	Jun-06	\$119,470	\$33,645	28%
41	7962 Shorewood Drive, Salem	Mar-07	\$140,801	\$134,729	96%
42	31613 71st Street, Wheatland	Mar-07	\$163,558	\$60,499	37%
43	7522 313th Avenue, Wheatland	Jun-08	\$169,787	\$0	0%
44	31422 76th Street, Wheatland	Dec-99	\$117,619	\$143,261	122%
45	32034 77th Street, Wheatland	Dec-99	\$133,352	\$400,274	300%
46	617 S. Riverside Drive, Silver Lake	Jan-02	\$153,752	\$198,997	129%
47	31627 71st Street, Wheatland	Aug-05	\$140,789	\$113,835	81%
48	31315 77th Street, Wheatland	Aug-05	\$153,438	\$140,691	92%
49	31602 76th Street, Wheatland	Dec-05	\$142,351	\$152,012	107%
50	415 S. Riverside Drive, Silver Lake	Feb-08	\$125,544	\$100,520	80%
51	32139 77th Street, Wheatland	Jul-95	\$135,493	\$212,581	157%
52	32129 77th Street, Wheatland	Jul-95	\$121,895	\$68,443	56%

It was assumed there would not be damages because the building had burned down prior to the acquisition.

Table E.1 Part 3 of 4

SUMMARY OF LOSSES AVOIDED AND ROI CALCULATIONS BY COUNTY FOR ALL EVENTS					
BUILDING NUMBER	ADDRESS	ACQUISITION COMPLETION DATE	2009 VALUE OF ACQUISITION COST (INCLUDING DEMO COST)	TOTAL LOSSES AVOIDED	ROI (%)
53	437 S. Riverside Drive, Silver Lake	Jul-95	\$121,453	\$525,046	432%
54	601 S. Riverside Drive, Silver Lake	Jul-95	\$123,925	\$45,498	37%
55	8106 Shorewood Drive, Salem	Jul-95	\$127,728	\$126,032	99%
56	31524 76th Street, Wheatland	Sep-95	\$116,379	\$413,069	355%
57	31217 77th Street, Wheatland	Feb-96	\$124,635	\$119,170	96%
58	32041 77th Street, Wheatland	Feb-96	\$117,107	\$0	0%
59	32104 77th Street, Wheatland	Nov-96	\$185,843	\$72,259	39%
60	419 S. Riverside Drive, Silver Lake	Oct-96	\$7,841	\$202,747	2,586%
61	32028 77th Street, Wheatland	Apr-97	\$136,601	\$151,816	111%
62	31628 76th Street, Wheatland	Dec-98	\$137,189	\$79,530	58%
63	32029 77th Street, Wheatland	Dec-98	\$100,017	\$183,726	184%
64	32018 77th Street, Wheatland	Dec-98	\$116,767	\$96,324	82%
65	31710 77th Street, Wheatland	Jan-99	\$139,792	\$173,265	124%
66	32143 77th Street, Wheatland	Mar-99	\$58,179	\$154,302	265%
67	31917 77th Street, Wheatland	Jan-00	\$30,097	\$182,158	605%
68	32015 77th Street, Wheatland	Dec-99	\$136,982	\$174,471	127%
69	6921 319th Avenue, Wheatland	Jun-00	\$108,859	\$73,473	67%
70	31214 77th Street, Wheatland	Sep-00	\$75,177	\$110,938	148%
71	6905 319th Avenue, Wheatland	Dec-00	\$136,356	\$91,112	67%
72	31705 71st Street, Wheatland	Jan-01	\$96,381	\$127,197	132%
73	441 S. Riverside Drive, Silver Lake	Jun-00	\$131,060	\$176,526	135%
74	W7352 Blackhawk Island Road, Fort Atkinson	Jun-96	\$56,228	\$109,384	195%
75	W7622 & W7624 Blackhawk Island Road, Fort Atkinson	Feb-96	\$132,334	\$194,693	147%
76	W7191 Blackhawk Island Road, Fort Atkinson	Sep-95	\$88,193	\$124,653	141%
77	W7616 Blackhawk Island Road, Fort Atkinson	Feb-99	\$115,429	\$167,783	145%

Table E.1 Part 4 of 4

SUMMARY OF LOSSES AVOIDED AND ROI CALCULATIONS BY COUNTY FOR ALL EVENTS					
BUILDING NUMBER	ADDRESS	ACQUISITION COMPLETION DATE	2009 VALUE OF ACQUISITION COST (INCLUDING DEMO COST)	TOTAL LOSSES AVOIDED	ROI (%)
78	W7091 Blackhawk Island Road, Fort Atkinson	Aug-98	\$112,253	\$142,184	127%
79	W7366 Blackhawk Island Road, Fort Atkinson	Jun-99	\$170,317	\$10,002	6%
80	W7126 Blackhawk Island Road, Fort Atkinson	Apr-99	\$86,471	\$63,991	74%
81	W7324 Blackhawk Island Road, Fort Atkinson	Sep-99	\$87,622	\$76,685	88%
82	W7664 Blackhawk Island Road, Fort Atkinson	Dec-97	\$100,617	\$121,283	121%
83	W7114 Blackhawk Island Road, Fort Atkinson	Mar-99	\$88,296	\$130,925	148%
84	W7521 Blackhawk Island Road, Fort Atkinson	Nov-89	\$162,919	\$195,930	120%
85	W7119 Blackhawk Island Road, Fort Atkinson	Nov-95	\$144,654	\$15,276	11%
86	W7084 Blackhawk Island Road, Fort Atkinson	Aug-04	\$70,279	\$89,846	128%
87	W7143 Blackhawk Island Road, Fort Atkinson	Oct-03	\$67,713	\$135,667	200%
88	W7139 Blackhawk Island Road, Fort Atkinson	Oct-03	\$53,623	\$183,383	342%
89	W7679 Lamp Road, Fort Atkinson	Oct-03	\$209,498	\$113,342	54%
90	W7689 Lamp Road, Fort Atkinson	Mar-08	\$288,474	\$131,787	46%
91	W6984 Blackhawk Island Road, Fort Atkinson	Aug-06	\$156,680	\$338,914	216%
92	118 North Railroad, Gays Mills	Jan-05	\$663,780	\$3,929,449	592%
<i>Total</i>			\$10,996,559	\$14,551,039	132%

Acronyms:

BCA

Benefit-Cost Analysis

BRV

building replacement value

cfs

cubic foot (feet) per second

FEMA

Federal Emergency Management Agency

FFE

first floor elevation

FIRM

Flood Insurance Rate Map

FIS

Flood Insurance Study

GIS

Geographic Information System

HAZUS-MH

Hazards U.S. – Multihazard

HEC

Hydrologic Engineering Center

HEC-RAS

Hydrologic Engineering Center River Analysis System

HMGP

Hazard Mitigation Grant Program

HWM

high water mark

LAS

loss avoidance study

MP_A

Mitigation Project Absent

MP_C

Mitigation Project Complete

NAVD88

North American Vertical Datum of 1988

NGVD29

National Geodetic Vertical Datum of 1929

NWS

National Weather Service

PA PROGRAM

Public Assistance Program

PI

Project Investment

PW

Project Worksheet

ROI

Return on Investment

USACE

U.S. Army Corps of Engineers

USGS

U.S. Geological Survey

WSE

water surface elevation

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