Loss Avoidance Study

Georgia, Building Modification Projects

December 2010

FEMA

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

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Cover photo: Flooded homes in central Georgia, September 2009,
Bruce Kinney, FEMA Photo Library

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Executive Summary

Every year, Federal, State, and local government agencies and private entities fund mitigation projects that are intended to reduce or eliminate the risk of damage and loss of life from natural disasters. Natural disasters are a threat to health and safety, the built environment, and the economy. Some of the funding for mitigation comes from mitigation grants awarded by the Department of Homeland Security's Federal Emergency Management Agency (FEMA), which uses cost-effectiveness as a grant eligibility requirement.

To determine the cost-effectiveness of mitigation projects before funding them, FEMA uses tools that predict damage from probabilistic hazard events. However, because the investment in mitigation is significant, the economic performance of mitigation during actual hazard events is important, particularly to policymakers. Over the last decade, FEMA has developed and refined a methodology for determining the performance of mitigation projects in actual post-project hazard events and has completed a number of flood mitigation loss avoidance studies using the methodology. The flood methodology is detailed in FEMA's *Loss Avoidance Study: Riverine Flood Methodology Report* (FEMA, 2010a).

Flooding has played a significant role in Georgia's history of natural disasters. Every year, damage from flooding costs residents, businesses, and taxpayers millions of dollars in repairs. In September 2009, Georgia experienced some of the worst flooding in the state's history. Torrential rains caused record-breaking flows in many streams and rivers, and in many locations, water levels exceeded 500-year flood elevations. The flooding resulted in 10 deaths; damage to 20,000 homes, businesses, and other buildings; and a loss of $500 million.

With support from the State of Georgia and FEMA, communities throughout the state have sought to reduce the risk of flood damage by implementing flood hazard mitigation projects—both building modification projects and localized, flood reduction projects. Building modification projects can involve acquisition/demolition, acquisition/relocation, elevation, or floodproofing.

In 2010, FEMA partnered with the Georgia Emergency Management Agency (GEMA) to conduct a loss avoidance study to evaluate the cost-effectiveness of the mitigation. For the study, FEMA and GEMA selected 29 building modification projects in Chattooga, Cobb, DeKalb, Douglas, and Gwinnett counties that were completed between 1997 and 2009. Cost-effectiveness was evaluated by

comparing the cost of the projects to the losses avoided in all floods that had occurred since the projects were completed, including the flooding in 2009.

The 29 building modification projects included 185 buildings. All but one project involved residential buildings that had been acquired and demolished. The other project involved the demolition of a school and rebuilding it outside the 500-year floodplain. Thirteen buildings were eliminated from the study (3 because they were acquired after the September 2009 flood event and 10 because of insufficient hydrologic and hydraulic data), leaving 172 buildings in the study.

The aggregate losses avoided for the 172 buildings were valued at $27,426,369, and the aggregate project investment was valued at $48,885,368 (both values in 2010 dollars), resulting in a Return on Investment of 56% for all storm events studied. The results of the study demonstrate the cost-effectiveness of the selected projects on an aggregate basis.

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Section One:
Introduction

Natural disasters in Georgia commonly result from flooding. From 1953 to 2009, the President declared 30 disasters for severe storms and flooding events in Georgia. Frequent flooding has jeopardized public health and safety and caused severe damage to property. Every year, damage from flooding costs residents, businesses, and taxpayers millions of dollars in repairs even though not every flood is severe enough to be declared a disaster by the President. As a consequence, Georgia communities, supported by the State of Georgia and the Department of Homeland Security's Federal Emergency Management Agency (FEMA), have sought to reduce the risk of flood damage through mitigation. This effort has included the acquisition/demolition, acquisition/relocation, floodproofing, and elevation of floodprone buildings.

To evaluate the cost-effectiveness of the mitigation projects, FEMA partnered with the State of Georgia following a September 2009 flooding disaster to conduct a loss avoidance study (LAS or study). The LAS compared the losses avoided in all floods since the completion of the mitigation projects to the cost of the projects. The study is referred to in this report as the "Georgia study." This report contains the results of the study.

1.1 Background

FEMA defines mitigation 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 (HMA) grants. The grants include post-disaster grants under the Hazard Mitigation Grant Program (HMGP) and pre-disaster grants under the Pre-Disaster Mitigation (PDM) Program, the Flood Mitigation Assistance (FMA) Program, the Repetitive Flood Claims (RFC) Program, and the Severe Repetitive Loss (SRL) Program.

With significant investment being made in mitigation, demonstrating cost-effectiveness is crucial for continued support of mitigation. In order to evaluate the cost-effectiveness of mitigation projects, FEMA has developed and refined the LAS methodology, which is used to determine the performance of mitigation projects

in actual post-project hazard events. The methodology is based on the analysis of actual natural hazard events that occurred in the project study area since the completion of the projects. The methodology provides a way to assess the benefit 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 in this study is consistent with FEMA's *Loss Avoidance: Riverine Flood Methodology Report* (FEMA, 2010a).

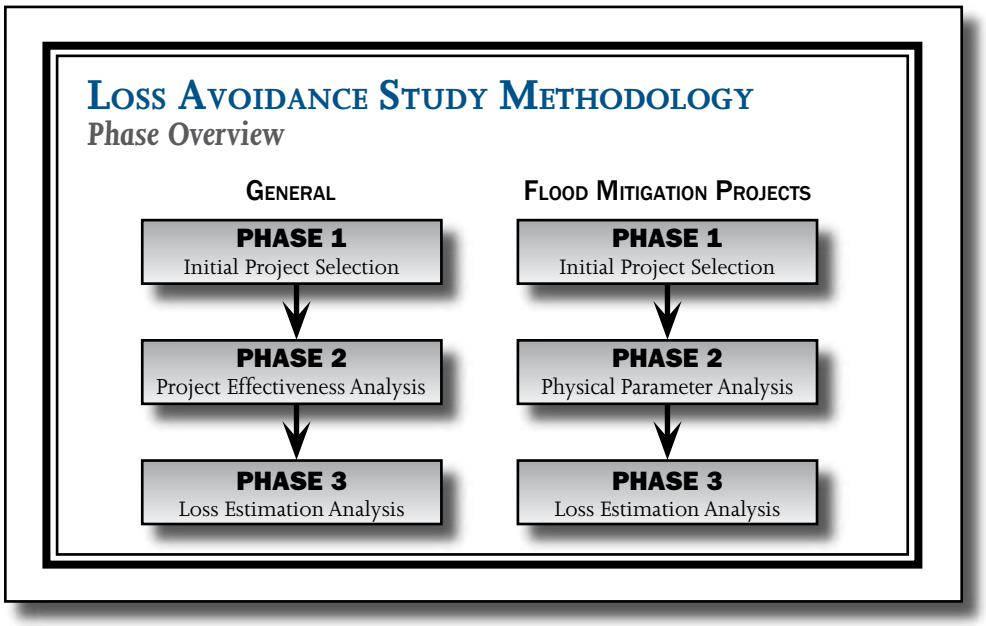
1.2 Methodology Overview

Loss avoidance methodology can be applied to the mitigation of any type of natural hazard (e.g., flood, wildfire, earthquake, wind). Flood hazard mitigation projects can be classified as either building modification or minor, localized flood reduction projects. Building modification projects mitigate damage by modifying buildings to reduce their risk of flooding through acquisition/demolition, acquisition/relocation, elevation, or floodproofing. Acquisition/demolition projects are referred to as "acquisition projects," and acquisition/relocation projects are referred to as "relocation projects." Elevation projects are used to elevate the first floors of floodprone buildings above the base (100-year) flood elevation. Minor, localized flood reduction projects mitigate damage 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. The Georgia study focused on the performance of acquisition and demolition/rebuilding projects.

An LAS consists of three phases, which are shown in **Figure 1.1**. The steps of the phases in a study of building modification projects are shown in **Figure 1.2**. Although Phases 1 and 3 are similar regardless of the type of mitigation project, Phase 2 varies considerably depending on the hazard and the mitigation project. In flood-related studies, Phase 2 is called "Physical Parameter Analysis."

Phase 1 consists of the development of the initial project list. Projects are selected based on criteria determined by the sponsoring agency. A project can include more than one building. The buildings in each project are screened for the availability of the data that are

Figure 1.1

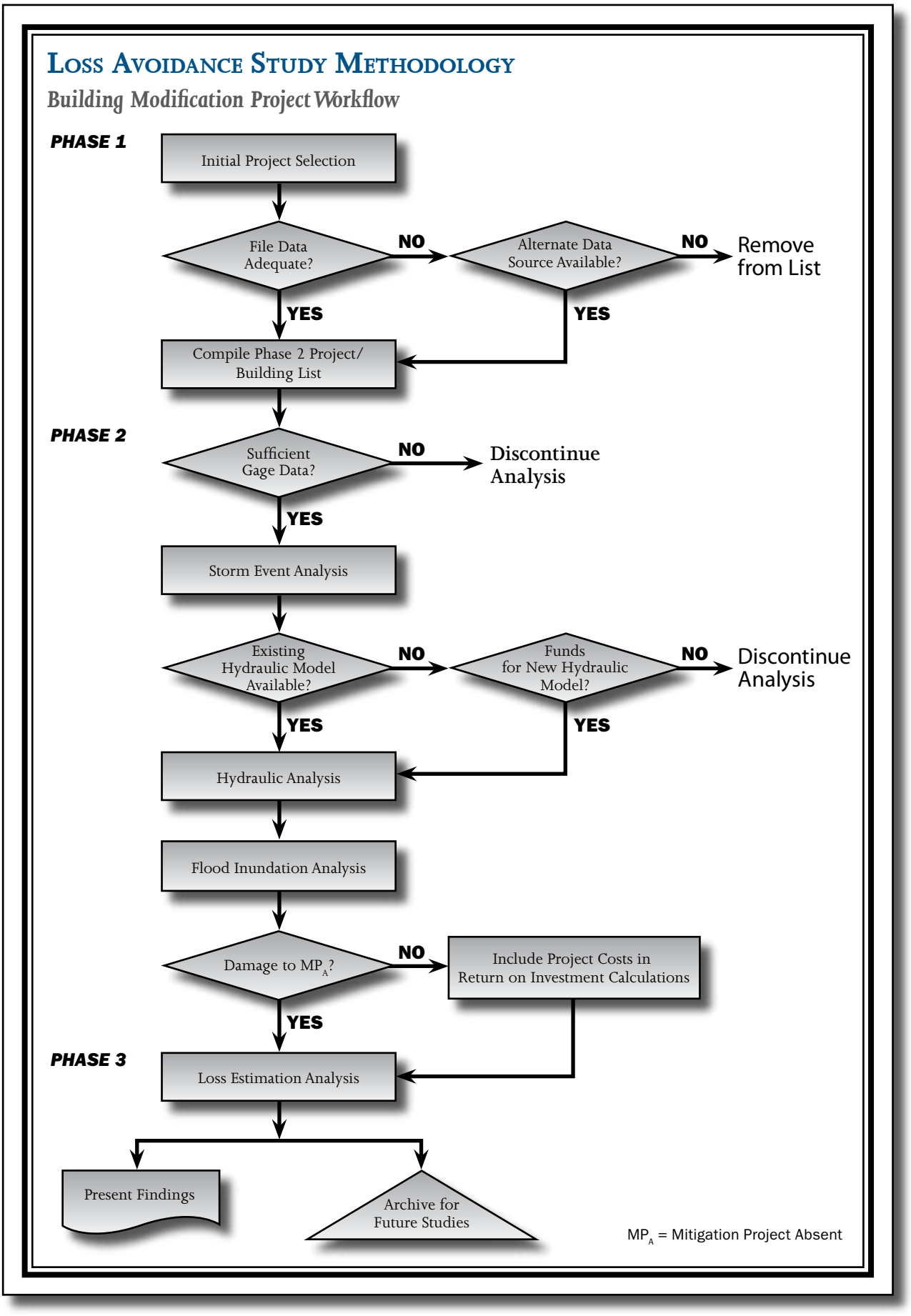


required for completion of all phases of the study. Buildings with adequate data advance to Phase 2 of the study.

Phase 2 is composed of three analyses—Storm Event Analysis, Hydraulic Analysis, and Flood Inundation Analysis. A Storm Event Analysis is performed to determine whether any storm event occurred since a mitigation project was completed that would have caused damage in the MP_A scenario. A Hydraulic Analysis is performed to determine the extent and elevation of flooding in the event(s). Using the results of the Hydraulic Analysis, a Flood Inundation Analysis is conducted to determine the depth of flooding inside the building(s) included in a mitigation project. 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 building modification projects, damage is calculated for the MP_A and MP_C conditions. Because no damage would have occurred for the MP_C condition for acquisition projects, the MP_A damage is equivalent to the losses avoided. Elevation and relocation projects could have incurred losses in the MP_C condition at the new elevation and/or location of the building. Thus, the losses avoided for elevation and relocation projects are the MP_A damage less the MP_C damage. After the damage is calculated for the MP_A and MP_C scenarios, the difference between the two scenarios is determined, which equals the losses avoided. The Return on Investment (ROI) is calculated by comparing the losses avoided to the project investment.

Figure 1.2


Loss Avoidance Study Methodology
Building Modification Project Workflow
PHASE 1
Initial Project Selection
File Data Adequate?
NO
Alternate Data Source Available?
NO
Remove from List
YES
YES
Compile Phase 2 Project/ Building List
PHASE 2
Sufficient Gage Data?
NO
Discontinue Analysis
YES
Storm Event Analysis
Existing Hydraulic Model Available?
NO
Funds for New Hydraulic Model?
NO
Discontinue Analysis
YES
YES
Hydraulic Analysis
Flood Inundation Analysis
Damage to MP$_A$?
NO
Include Project Costs in Return on Investment Calculations
YES
PHASE 3
Loss Estimation Analysis
Present Findings
Archive for Future Studies
MP$_A$ = Mitigation Project Absent

Section Two:
Mitigation Project Information

Because Georgia is highly susceptible to flooding, the State of Georgia initiated a number of flood mitigation projects to reduce or eliminate the risk of property damage; the threat to life, public health, and safety; and costs for emergency response. Twenty-nine building modification projects were considered for the Georgia study. The projects were completed between August 1997 and December 2009 and consisted of 28 acquisition projects and 1 demolition/rebuilding project (Trion City Schools Project). The projects, which were funded by FEMA, other public agencies, and private sources, were dispersed throughout Chattooga, Cobb, DeKalb, Douglas, and Gwinnett counties. The 29 projects involved a total of 185 buildings. Three buildings were eliminated from the study because they had not been acquired prior to the September 2009 event, leaving a total of 182 buildings in the study. **Table 2.1** contains the project numbers of the 29 projects, number of buildings in each project, and cost of each project.

2.1 History

From 1990 to 2000, nearly 75% of the disaster losses in Georgia were the result of flooding (Dobur, 2009). The losses from flooding during this period totaled $2 billion. From January 1999 to May 2009, there were 804 flood events in Georgia (National Climatic Data Center [NCDC], 2010b).

Recent, major floods in Georgia occurred in 1990, 1994, 1998, 2004, and 2009. In October 1990, more than 15 inches of rain fell during a 100-year storm event. The President declared a major disaster that included 9 counties. The storm had a significant impact on the city of Augusta, bringing more than 12 hours of rain, killing at least 4 people, and forcing the evacuations of hundreds.

In 1994, Tropical Storm Alberto caused heavy storms to sweep over Georgia. Prolonged thunderstorms produced rainfall totals of 12 to 15 inches during a 24-hour period in south-central Georgia. The Flint and Ocmulgee rivers crested up to 20 feet above flood stage and inundated major portions of the state. Floodwaters forced closure of 175 roads in 30 counties. The President declared a major disaster that included 43 counties. Fifteen deaths and dozens of injuries were reported in Georgia (NOAA, 1994).

Table 2.1

Summary of Projects Included in the Georgia Study

County	Project Number	Number of Buildings	Project Cost at Date of Project Completion	Total Project Cost by County
Chattooga	1857-005; 1020-001	1	$4,465,893	$4,465,893
Cobb	1033-0123	37	$5,262,204	$8,196,025
	1554-0006	12	$915,066	
	1560-0006	10	$1,107,936	
	FMA-2001-PJ8	1	$156,227	
	FMA-2002-PJ1	1	$143,202	
	FMA-2002-PJ2	1	$141,227	
	FMA-2006-PJ2	1	$131,089	
	FMA-2006-PJ6	2	$339,074	
DeKalb	1071-004	6	$692,148	$30,881,138
	1209-0017	1	$211,124	
	1209-0042	23	$4,694,584	
	1209-059	4	$948,259	
	FMA-2007-PJ2	8	$2,861,424	
	FMA-PJ-04-GA-2006-005	3	$972,350	
	PDM-2005-PJ2	15	$3,501,000	
	PDM-2005-PJ5	1	$1,416,213	
	PDMC-PJ-04-2005-001	3	$3,769,554	
	PDMC-PJ-04-GA-2007-001	4	$1,653,366	
	PDMC-PJ-04-GA-2007-005	11	$3,651,450	
	PDMC-PJ-04-GA-2007-006	3	$626,800	
	PDM-PJ-04-GA-2006-002	9	$2,801,450	
	RFC-2007	2	$704,295	
	RFC-PJ-04-GA-001	1	$358,750	
	RFC-PJ-04-GA-2006-001	6	$2,018,371	
Douglas	1071-0008	8	$421,635	$1,278,704
	PDM-2007-PJ3	6	$857,069	
Gwinnett	1311-0004	1	$102,900	$261,481
	FMA-2005-PJ1	1	$158,581	
	Total Number of Buildings[1]	***182***	**Total Project Cost[2]**	***$45,083,241***

1. Three buildings were removed from the LAS because they had not been acquired prior to September 2009.
2. The total project cost in this table reflects the cost at the time of project completion of 182 buildings. The total project cost that was used to calculate the Return on Investment is in present-day (2010) values and includes only the 172 buildings that advanced to Phase 3 (see Section 5).

In 1998, heavy rains fell over most of central and southwestern Georgia on March 3 and March 4 and again from March 7 to March 9. Peak discharges on many streams in central and southwestern Georgia had recurrence intervals ranging from approximately 10 years to greater than 100 years. The most significant flooding occurred in the Flint River basin, where many new record flood peaks occurred (Perry, 2005).

In 2004, Hurricane Ivan caused more than 9 inches of rain to fall in parts of Georgia and killed at least 5 people. Massive floods cut off power to thousands of customers, and the President declared 31 counties as disaster areas ("Developments with Hurricane Ivan," 2004).

In September 2009, Georgia experienced some of the worst flooding in the state's history. Moisture pulled from the Gulf of Mexico caused continuous rain, resulting in record-breaking flows in many streams and rivers. In many locations, water levels exceeded 500-year flood elevations. The President declared a major disaster that included 23 counties in northern Georgia, most of them in and around the Atlanta metropolitan area. At least 10 deaths resulted from the flood, and approximately 20,000 homes, businesses, and other buildings were damaged, totaling at least $500 million (Kass, 2009). Hundreds of people were rescued by boat from their homes, and most Atlanta metropolitan area school districts closed temporarily because of the floodwaters (NOAA, 2010). **Figure 2.1** shows flooding conditions in Georgia during this flood.

2.2 Funding and Timeline

FEMA provided funding for the 29 projects included in this study, with the non-Federal share provided by public agencies and private sources. The projects included a total of 185 buildings, but three buildings were eliminated from the study because they were acquired after the September 2009 event. As shown in **Table 2.1**, the total cost of the mitigation of the remaining 182 buildings at the time of project completion was $45,083,241. All project costs were adjusted to present-day (2010) values for the calculation of the ROI. All of the mitigation activities were completed between 1997 and 2009.

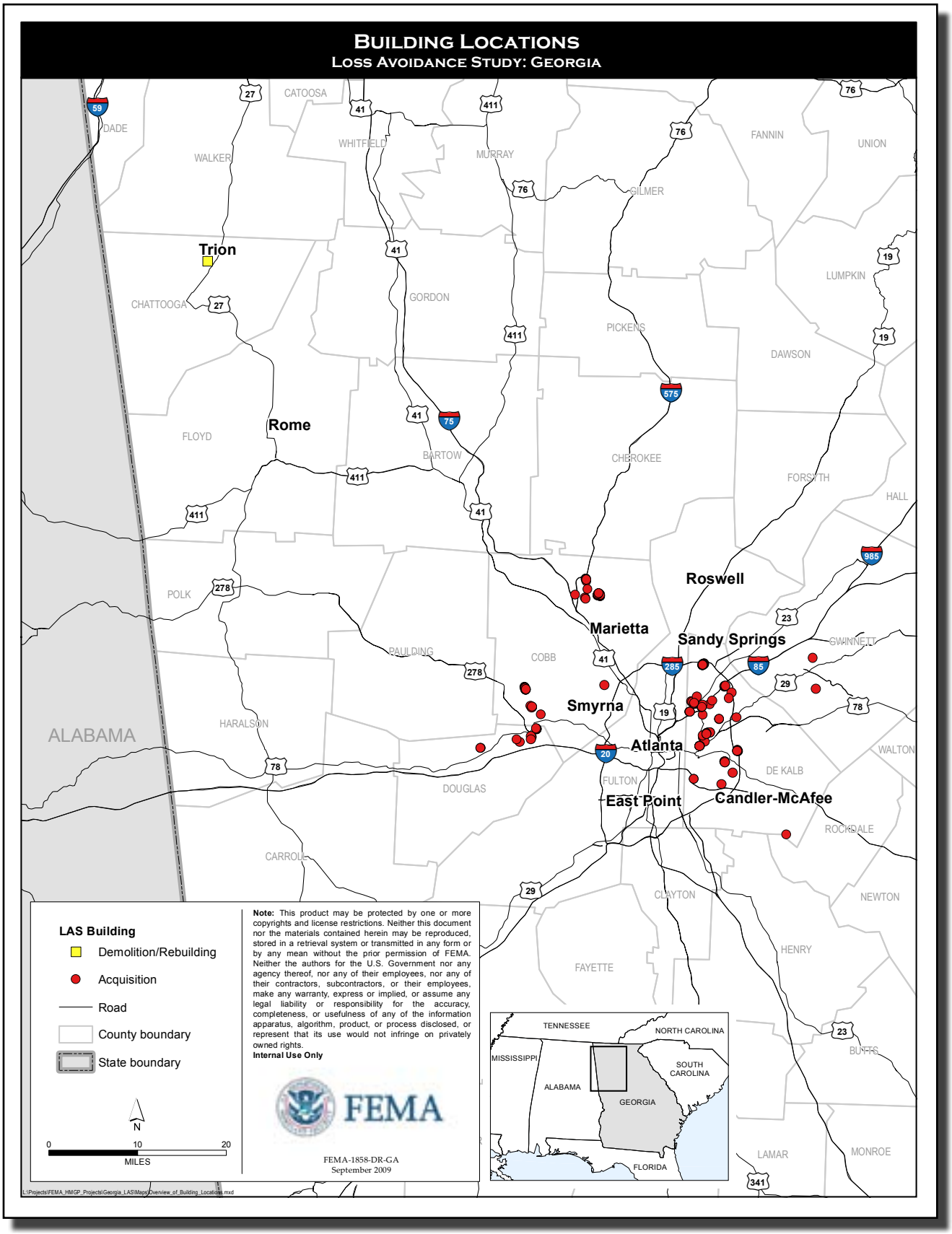
2.3 Location

The 182 buildings included in the study were dispersed throughout five northern Georgia counties, as follows: DeKalb County (100 buildings), Cobb County (65), Douglas County (14), Gwinnett County (2), and Chattooga County (1). With the exception of the Trion City Schools Project, which was implemented in Chattooga County, all of the buildings were mitigated through acquisition/demolition. The locations of the buildings are shown in **Figure 2.2**.

Figure 2.1: Flooding in Georgia, September 2009

Top left: Central Georgia (Bruce Kinney); remaining photos: Douglas County (George Armstrong). Source: FEMA Photo Library.

Figure 2.2


BUILDING LOCATIONS
LOSS AVOIDANCE STUDY: GEORGIA
Trion
Rome
Roswell
Marietta
Sandy Springs
Smyrna
Atlanta
East Point
Candler-McAfee
CATOOSA
DADE
WALKER
WHITFIELD
MURRAY
FANNIN
UNION
GILMER
LUMPKIN
CHATTOOGA
GORDON
PICKENS
DAWSON
FLOYD
BARTOW
CHEROKEE
FORSYTH
HALL
POLK
PAULDING
COBB
GWINNETT
HARALSON
ALABAMA
DOUGLAS
FULTON
DE KALB
WALTON
ROCKDALE
CARROLL
CLAYTON
NEWTON
FAYETTE
HENRY
BUTTS
LAMAR
MONROE
LAS Building
Demolition/Rebuilding
Acquisition
Road
County boundary
State boundary
N
0 10 20
MILES
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FEMA
FEMA-1858-DR-GA
September 2009
TENNESSEE
NORTH CAROLINA
MISSISSIPPI
SOUTH CAROLINA
ALABAMA
GEORGIA
FLORIDA

The buildings were located along 32 flooding sources. **Table 2.2** lists the flooding sources and the number of buildings located along each flooding source.

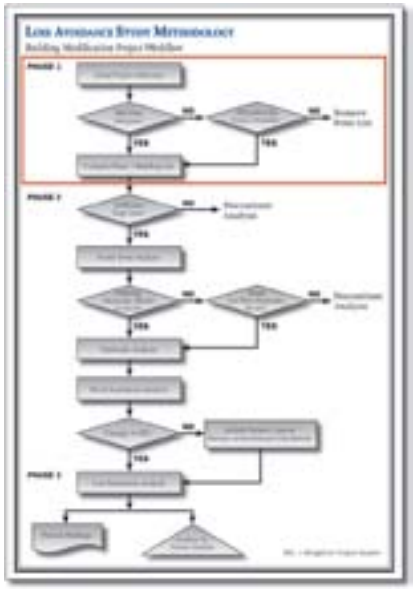
Table 2.2

Number of Buildings Along Each Flooding Source

County	Flooding Source	Number of Buildings
Chattooga	Chattooga River	1
Cobb	Little Noonday Creek	19
	Morgan Lake Tributary	10
	Noonday Creek	10
	Noonday Creek Tributary 3	3
	Noses Creek	6
	Poplar Creek	1
	Sweetwater Creek	1
	Wildhorse Creek	15
DeKalb	Burnt Fork Creek	3
	Cobbs Creek	3
	Henderson Mill Creek	1
	Indian Creek	12
	Nancy Creek	19
	North Fork Peachtree Creek	13
	North Fork Peachtree Creek Tributary A	10
	Peachtree Branch of Henderson Mill Creek	1
	Peavine Creek Tributary	4
	Shoal Creek	1
	South Fork Peachtree Creek	10
	South Fork Peachtree Creek Tributary	4
	Stephenson Creek	1
	Sugar Creek	1
	Unnamed North Fork Peachtree Creek Tributary	1
	Unnamed South Fork Peachtree Tributary	1
	Unnamed Tributary of North Fork Peachtree Creek Tributary A	15
Douglas	Beaver Creek	1
	Huey Creek	3
	Miller Creek	1
	Sweetwater Creek	8
	Sweetwater Creek Tributary 1 – Douglas	1
Gwinnett	Yellow River	1
	Sweetwater Creek Tributary 1 – Gwinnett	1
	Total Number of Buildings	***182***

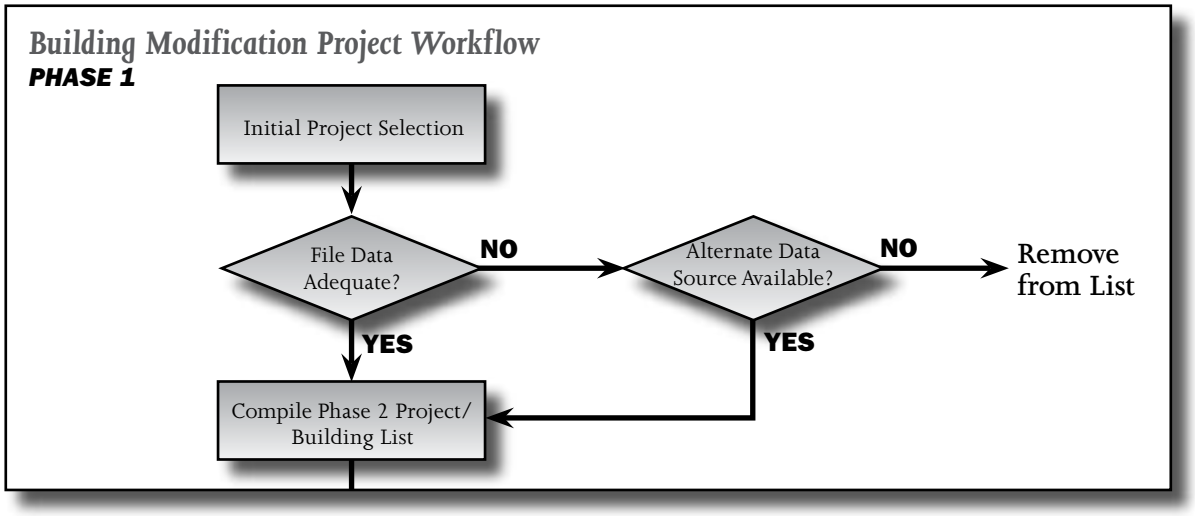
Section Three:

Phase 1 – Initial Project Selection and Screening



This section contains a discussion of Phase 1, Initial Project Selection and Screening, for building modification projects. The steps included in Phase 1 for a building modification project are shown in **Figure 3.1**. In Phase 1, an initial list of candidate projects is selected, and data are collected for analysis of the buildings. Each building is screened for adequate data. If the data required to analyze a building are unavailable or inadequate, that building is eliminated from the study. The buildings for which adequate data are available are advanced to Phase 2.

Figure 3.1



3.1 Initial Project Selection

Project selection criteria are defined for each LAS, and the initial projects are selected based on the criteria. The criteria may include but are not limited to:

- **Area of Interest** – The area of interest is the geographic boundary of a study. The boundary can be a reach of a river or channel, a single community or watershed, a region, a jurisdictional boundary (e.g., city, county, State, special district), or any other area. The boundary must be defined by the agency sponsoring the study. A building modification project can consist of a single building but commonly includes multiple buildings. Regardless of the number of buildings in a project, every building is evaluated independently using building-specific information.

- **Hazard Type –** Projects are selected for an LAS based on the type of hazard the projects are mitigating. Examples of hazard types are riverine flood and coastal flood.
- **Project Type –** Many types of projects can be analyzed in an LAS. Flood-related projects include building modification projects (elevation, acquisition, relocation, and floodproofing) and flood reduction projects (stormwater drainage system improvements, channel modifications, flood walls/barriers, and other projects that reduce the severity of flooding).
- **Study Baseline –** The study baseline is the date a mitigation activity was completed. Only the storm events that occurred after the study baseline should be evaluated. For building modification projects, each building in the project is evaluated individually. For acquisition projects, the study baseline is the date of demolition; for relocation projects, the date a building was relocated; and for elevation projects, the date the construction was completed.

3.2 Required Data and Project Screening

The data required for an HMA grant application are similar to the data required for an LAS. Therefore, if a building modification project was funded through one of the HMA grant programs, much of the required data can be obtained from the project file.

For building modification projects, the following types of data are required to complete an LAS:

- **Total Project Cost**, which includes the fair market value of the building paid to the homeowner, demolition costs, relocation costs, construction costs (elevations only), legal fees, and assessor's costs. Each type of cost can have multiple sources.
- **Study Baseline** for each building.
- **Building Location –** Latitude/longitude data, address, and/or assessor parcel number.
- **Building Information –** Type (i.e., residential, commercial, industrial, or municipal), type of construction (e.g., wood frame, manufactured), basement information (finished versus unfinished), livable square footage, foundation type, number of stories, and building replacement value (BRV).
- **First Floor Elevations (FFEs)**, which provide the basis for the damage calculations in the MP_A scenario and in the MP_C scenario for elevations and relocations. Damage is calculated in Phase 3 based on the depth of flooding inside a 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 FFEs such as those provided in FEMA elevation certificates are therefore preferred.

After the initial projects have been selected, the buildings in each project must be screened individually. Buildings should be removed from the study if the necessary building data are not available or inadequate or cannot be easily estimated. Projects may also be eliminated from the study if the quality of the available data is insufficient.

3.3 Georgia Study: Phase 1 Summary

The following section provides a description of the Phase 1 steps in the Georgia study—initial project selection, data collection, and building screening for adequate data. The analysis completed in Phase 1 is used to determine the buildings that will advance to Phase 2.

3.3.1 Initial Project Selection

FEMA initiated the Georgia study in 2010 with the cooperation of the Georgia Emergency Management Agency (GEMA). The two agencies worked together to develop a project list for the study based on the following:

- **Area of Interest** – Five Georgia counties (Chattooga, Cobb, DeKalb, Douglas, and Gwinnett).
- **Hazard Type** – Riverine flooding.
- **Project Type** – Building modification projects (acquisition and demolition/rebuilding). Of the 29 projects that were selected, 28 projects involved the acquisition and demolition of residential homes. The other project, the Trion City Schools Project, involved demolishing an elementary school and high school and constructing a single K-12 (kindergarten through 12th grade) school at a site outside the 500-year floodplain.
- **Study Baseline** – Mitigation was completed between August 1, 1997, and December 15, 2009. The study baseline date for one project (PDMC-PJ-04-GA-2007-001) extends beyond the September 2009 event because the project closeout date of December 14, 2009, was used instead of the demolition date, which was unknown.

3.3.2 Data Collection

The 29 projects that were selected for the study had a total of 185 buildings. Three buildings had not been acquired prior to the

September 2009 event and were removed from the study, leaving 182 buildings. Total project cost, study baseline, and building data for the remaining 182 buildings were obtained from a building database provided by GEMA. FEMA Disaster Assistance Employees obtained information for the database from the HMA project files for the projects included in the study. GEMA provided additional information pertaining to data inconsistencies and missing data. The following is a summary of the data collected from the building database:

- **Total Project Cost –** Total project cost includes all costs associated with the mitigation project. The total project cost was inflated to 2010 dollars.
- **Study Baseline –** The building database included three types of dates: (1) date of recorded deed, (2) demolition date, and (3) project closeout date. The date of recorded deed was preferred for the study baseline. If the date of recorded deed was not available, the demolition date was the next preferred date. If the demolition date was not available, the project closeout date was used. Eleven buildings in DeKalb County had project closeouts date of March 31, 2005, but had been mitigated before Hurricane Ivan occurred in September 2004. The acquisition dates for the 11 buildings were obtained from GEMA, and these dates were used as the study baseline date in order to include potential losses from Hurricane Ivan.
- **Building Location –** Building locations were plotted using the latitudes/longitudes from the building database and Geographic Information System (GIS) software. The locations were verified using a web mapping service. Building locations were found to be consistent with the latitudes/longitudes provided by GEMA.
- **Building Information –** The building database provided the construction type, number of floors, square footage, and BRV. Of the 182 buildings, 34 buildings had walkout basements. All buildings were residential with the exception of the Trion City Schools. The building database listed the school as having one building, but two buildings on the site were mitigated (elementary school and high school). Of the residential buildings, four were condominiums, and each condominium had eight subunits. The BRVs of all buildings were provided as a cost per square foot in 2009 values. The values were inflated to 2010 dollars.
- **FFEs –** FFEs were available for all buildings except for the building at 2985 Leasa Court, Marietta (Cobb County). For this property, the ground elevation at the building location was derived in GIS from 10-meter topographic data obtained from the U.S. Geological Survey (USGS) National Elevation Dataset.

Topographic data are the best available data in the vicinity of the building. The topographic data were then used in conjunction with standard factors of height above grade from FEMA's loss estimation system, Hazards U.S. – Multi-Hazard (HAZUS-MH) (FEMA, 2009b), to estimate the FFE based on foundation type. These factors are provided in **Table 3.1**. FFEs that are derived using this method may be less accurate than surveyed FFEs but can be used when necessary.

Table 3.1

HAZUS-MH FFE Offset Standards

Foundation Type	FFE (feet above grade)
Basement	4
Crawl	3
Slab	1

FFE = first floor elevation
HAZUS-MH = Hazards U.S. – Multi-Hazard

3.3.3 Building Screening

The three buildings eliminated from the study were acquisition projects. They are listed in **Table 3.2**. The remaining 182 buildings were advanced to Phase 2.

Table 3.2

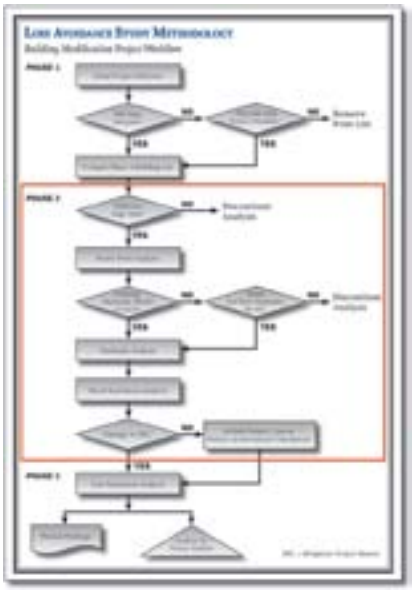
Buildings Eliminated in Phase 1

Project Number	Street Number and Street Name	City	County
PDMC-PJ-04-GA-2007-006	3158 Beech Drive	Decatur	DeKalb
PDMC-PJ-04-GA-2007-005	2403 Hunting Valley Drive	Decatur	DeKalb
FMA-2007-PJ2	3213 Barkside Court	Chamblee	DeKalb

Section Four:

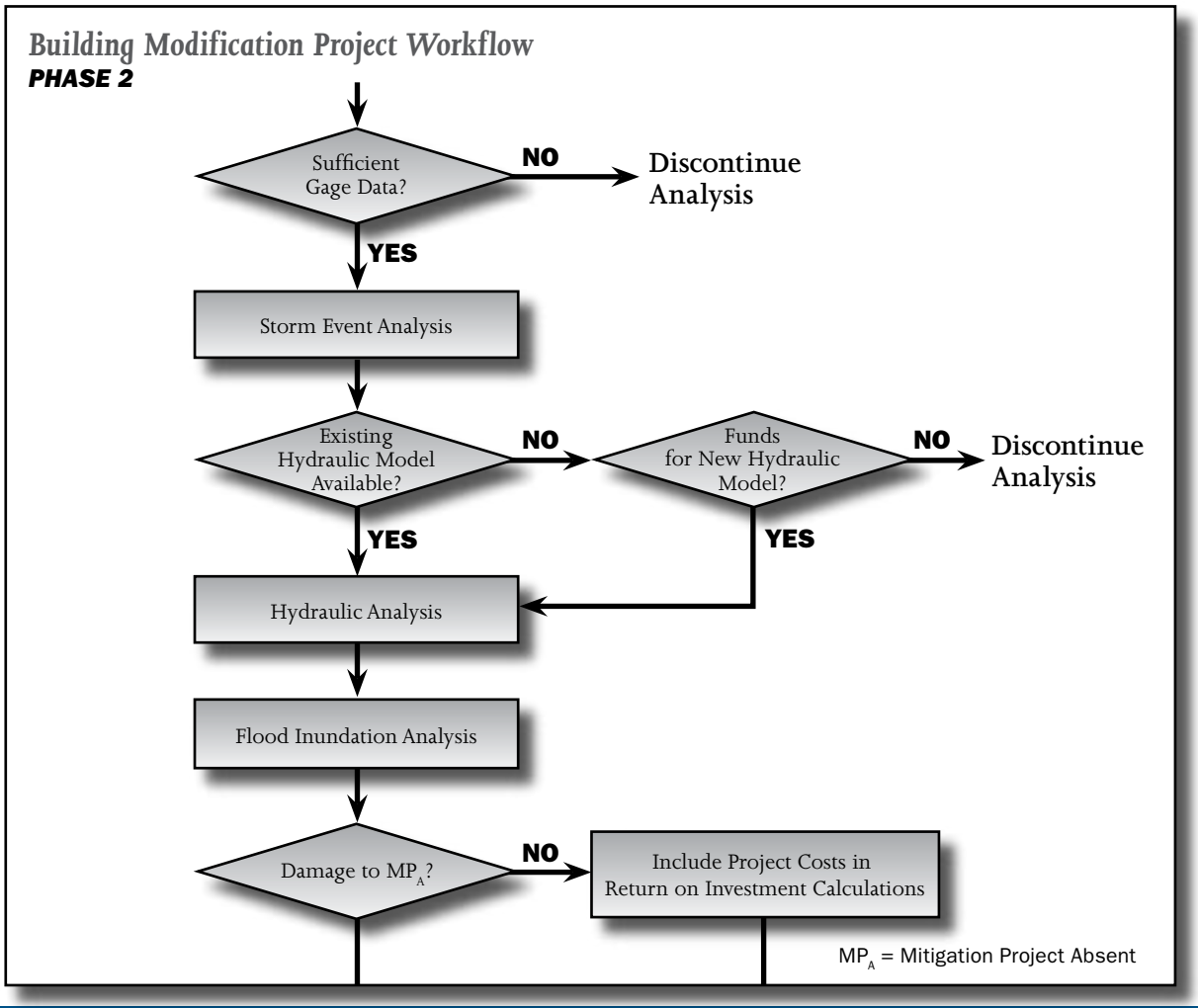
Phase 2 – Physical Parameter Analysis

This section contains a discussion of Phase 2, Physical Parameter Analysis, for building modification projects. Phase 2 consists of a Storm Event Analysis, Hydraulic Analysis, and Flood Inundation Analysis. The steps for completing Phase 2 are shown in **Figure 4.1**.



- **Storm Event Analysis** – Conducted to identify potentially damaging events that occurred since the study baseline and to assess the availability of high water marks (HWMs) or stream/precipitation gage readings for the events.
- **Hydraulic Analysis** – Conducted to determine water surface elevations (WSEs) at the project site from known storm events based on how flows move through the project area.
- **Flood Inundation Analysis** – Conducted to determine the depth of flooding that would have occurred in each building in the MP_A scenario (and in the MP_C scenario for elevation projects) because of the storm events.

Figure 4.1



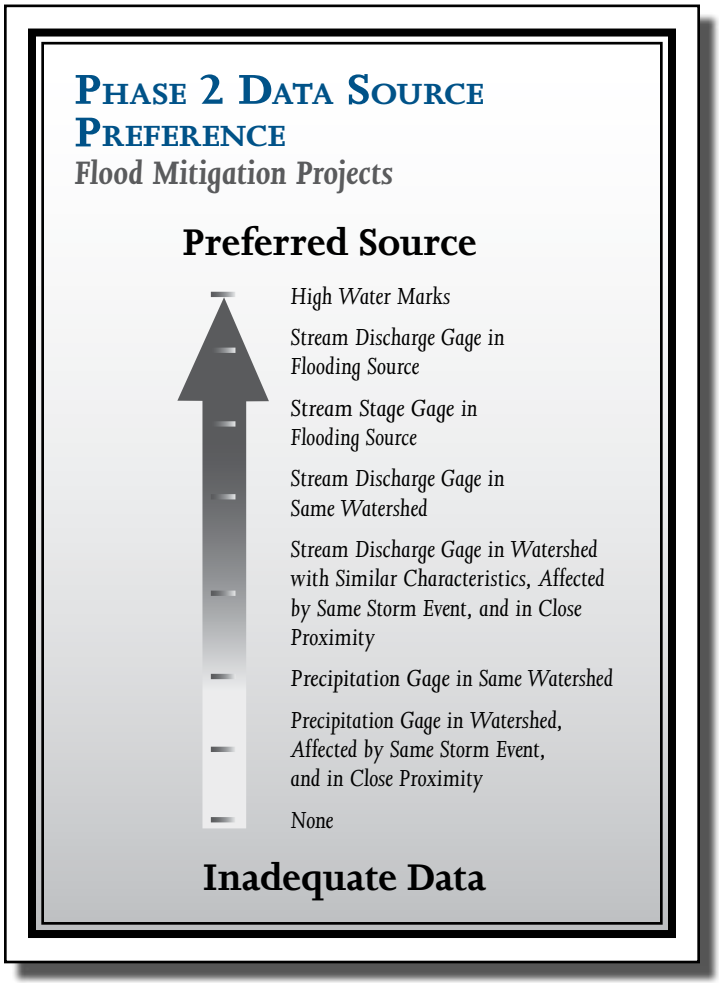
For more information on the methodology for Phase 2, see *Loss Avoidance: Riverine Flood Methodology Report* (FEMA, 2010a).

4.1 Storm Event Analysis

An LAS of a flood mitigation project can be conducted only if at least one storm event severe enough to have caused damage in the MP_A scenario has occurred since the study baseline for that project. For some projects, there may be multiple storms that could have caused damage in the MP_A scenario since the study baseline.

The purpose of the Storm Event Analysis is to determine the storm event data, if any, that are available and which events occurred since the study baseline that can be included in the LAS. Data that can be used in the study may be in the form of HWMs from floods, stream gage data, or precipitation gage data. **Figure 4.2** provides the order of preference for storm event data. If HWMs were not recorded for the events of interest, the availability of sufficient stream gage data should be determined. The stream gage must be in or near the study area and have a period of record that includes the event(s) of interest. Stream gage data may include measurements of stage, discharge, or both.

Figure 4.2



When no stream gages are available, precipitation gages must be located. If precipitation gages are used, a hydrologic analysis must be completed to convert rainfall data into discharge rates at the project site. If no storm event data are available for the project area, regression equations estimating the discharge-area relationship between a nearby gaged site and the ungaged site can be used.

A list of peak events since the study baseline is compiled from the gage data during Phase 2 if the scope of the study calls for the analysis of more than one event. If sufficient gage data for a particular flooding source cannot be applied to the area, the buildings along that flooding source must be eliminated from the study.

4.1.1 Georgia Study: Storm Event Analysis

The first step in the Storm Event Analysis was to determine whether measured storm information was available for the flooding sources that were proximate to the buildings being considered in the study. The data sources available in Georgia for determining whether a storm event could have caused damage in the MP_A scenario included HWMs, stream gage data, and precipitation gage data. HWMs were not available on all flooding sources and were recorded only for Hurricane Ivan in September 2004 and the September 2009 event. The 2004 HWMs and selected 2009 HWMs collected in Douglas County were used for the Georgia study, as described in **Section 4.2.1.1**. Events that occurred after initiation of the study in 2010, such as the May 2010 storm event, were not included in the study.

4.1.1.1 Gaged Flooding Sources

For events occurring after the study baseline, data were obtained for gages located near the communities included in the study. **Table 4.1** shows the county, gage name, gage type, operating agency, and USGS gage number or National Climatic Data Center (NCDC) call sign for the gages that were used in the Storm Event Analysis. **Figure 4.3** shows the location of these gages. The peak

Table 4.1

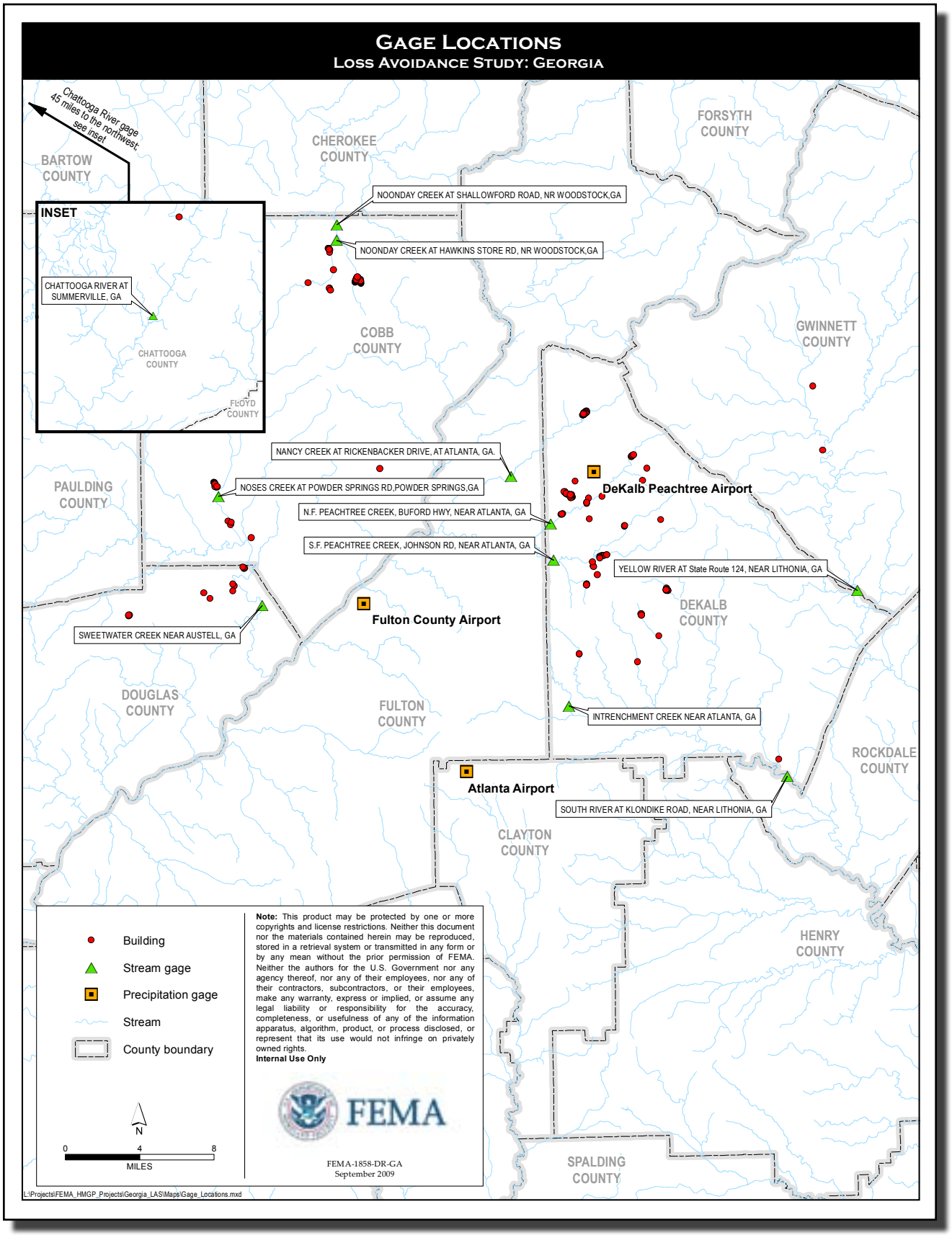
Gages Used in Storm Event Analysis

County	Gage Name	Gage Type	Operating Agency	USGS Gage Number or NCDC Call Sign
Chattooga	Chattooga River at Summerville	Stream	USGS	02398000
Clayton	Atlanta Airport	Precipitation	NCDC	KATL[1]
Cobb	Noonday Creek at Hawkins Store Road, near Woodstock	Stream	USGS	02392950
	Noses Creek at Powder Springs Road, at Powder Springs	Stream	NCDC	02336968
DeKalb	DeKalb Peachtree Airport	Precipitation	USGS	KPDK[1]
	Intrenchment Creek near Atlanta	Stream	USGS	02203700
	North Fork Peachtree Creek at Buford Highway, near Atlanta	Stream	USGS	02336120
	South Fork Peachtree Creek at Johnson Road, near Atlanta	Stream	USGS	02336240
	South River at Klondike Road, near Lithonia	Stream	USGS	02204070
Douglas	Sweetwater Creek near Austell	Stream	USGS/NWS	02337000
Fulton	Fulton County Airport	Precipitation	NCDC	KFTY[1]
	Nancy Creek at Rickenbacker Drive, at Atlanta	Stream	USGS/NOAA	02336360
Gwinnett	Yellow River at State Route 124, near Lithonia	Stream	USGS	02207120

1. KATL, KPDK, and KFTY are NCDC Call Sign Indicators

NCDC = National Climatic Data Center
NOAA = National Oceanic and Atmospheric Administration
NWS = National Weather Service
USGS = U.S. Geological Survey

Figure 4.3


GAGE LOCATIONS
LOSS AVOIDANCE STUDY: GEORGIA
Chattooga River gage 45 miles to the northwest, see inset
INSET
CHATTOOGA RIVER AT SUMMERVILLE, GA
CHATTOOGA COUNTY
FLOYD COUNTY
BARTOW COUNTY
CHEROKEE COUNTY
FORSYTH COUNTY
NOONDAY CREEK AT SHALLOWFORD ROAD, NR WOODSTOCK,GA
NOONDAY CREEK AT HAWKINS STORE RD, NR WOODSTOCK,GA
COBB COUNTY
GWINNETT COUNTY
NANCY CREEK AT RICKENBACKER DRIVE, AT ATLANTA, GA.
NOSES CREEK AT POWDER SPRINGS RD,POWDER SPRINGS,GA
PAULDING COUNTY
DeKalb Peachtree Airport
N.F. PEACHTREE CREEK, BUFORD HWY, NEAR ATLANTA, GA
S.F. PEACHTREE CREEK, JOHNSON RD, NEAR ATLANTA, GA
YELLOW RIVER AT State Route 124, NEAR LITHONIA, GA
DEKALB COUNTY
Fulton County Airport
SWEETWATER CREEK NEAR AUSTELL, GA
DOUGLAS COUNTY
FULTON COUNTY
INTRENCHMENT CREEK NEAR ATLANTA, GA
ROCKDALE COUNTY
Atlanta Airport
SOUTH RIVER AT KLONDIKE ROAD, NEAR LITHONIA, GA
CLAYTON COUNTY
HENRY COUNTY
SPALDING COUNTY
Building
Stream gage
Precipitation gage
Stream
County boundary
N
0 4 8
MILES
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September 2009
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discharges or stages were found from historical gage data and arranged in descending order, and the largest events were used in the study. See **Table 4.2** for a list of the events included in the LAS for each county.

For Noses Creek, peak annual data were available, but two events were noted as being affected by backwater. In order to determine the discharges for the two events, the following steps were taken. First, average daily discharges were obtained for the annual peak stage events that had corresponding peak discharges. Ratios of peak discharges to average daily discharges were calculated, and the ratios were averaged. Next, the average daily data for the two events with missing peak discharges were obtained. The average daily discharge was multiplied by the ratio determined in the previous step to estimate an annual peak discharge.

Table 4.2

Date and County of the Events Analyzed in the Georgia Study

County	Event Date
Chattooga	September 2009
Cobb	March 2006
	November 2006
	August 2008
	September 2009
DeKalb	September 2002
	May 2003
	September 2004
	March 2005
	July 2005
	June 2006
	August 2006
	December 2007
	July 2008
	September 2009
Douglas	May 2003
	June 2005
	September 2009
Gwinnett	May 2003
	July 2005
	October 2005
	November 2006
	August 2008
	September 2009

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 a selected time interval. For gages providing annual peak data, only the annual peak within a water year was selected for analysis. A water year is defined as the period between October 1 of one year and September 30 of the next and is designated by the calendar year in which it ends. For example, the year ending September 30, 2000, is called the 2000 water year. For events that were within 3 months of each other, only the largest event was included in the study.

4.1.1.2 Ungaged Sites

In Georgia, small flooding sources such as creeks and streams commonly do not have gages. The USGS has developed regression equations for urban streams in Georgia and published them in *Flood-Frequency Relations for Urban Streams in Georgia – 1994 Update* (USGS, 1995). The document includes a description of a method for calculating discharges at recurrence intervals for ungaged sites and was used when the recurrence interval was known. The general form of the regression equation is:

$$Q_t = a\left(A^b\right)\left(I^c\right)$$

Where:

Q_t = Peak discharge for recurrence interval t (in cubic feet per second [cfs])

A = Drainage area (in square miles)

I = Area that is impervious to infiltration (in percent)

a, b, c = coefficients that can change depending on the recurrence interval or geographic region

Peak flows at some ungaged sites were calculated by transferring the measured peak flows from a gage in a nearby watershed. The calculation was performed using the following equation, which is based on applying a ratio of the drainage areas to the USGS regression equations.[1]

$$Qu_t = \left(Qg_t\right)\left(\frac{Au}{Ag}\right)^x$$

1 Based on a visual inspection of aerial photos, the percentage of the drainage area that is impervious to infiltration is assumed for the Georgia study to be the same for both watersheds. This means that the term pertaining to imperviousness in the equation taken from the USGS document can be removed from the equation presented here. Therefore, the equation is shown without the term for imperviousness.

Where:

Qu_t = discharge at the ungaged site for recurrence interval t (in cfs)

Qg_t = discharge at gaged site for recurrence interval t (in cfs)

Au = contributing drainage area of ungaged site (in square miles)

Ag = contributing drainage area of gaged site (in square miles)

x = regional exponent, provided by the USGS (1995); for Regions 1 and 2, which generally cover the northern part of Georgia, the mean drainage area exponent is 0.70

The mean exponent (x) was selected for the region where the ungaged site was located. The peak discharge was calculated using a nearby gage only if the watersheds had similar characteristics and would have been affected by the same events. Precipitation data in the vicinity of both sites were compared to determine whether the watersheds were affected by the same storms.

In the Georgia study, the basin transfer method described above was used to estimate discharges on Shoal Creek and Little Noonday Creek, as follows:

- The discharges at the ungaged site on Shoal Creek were determined from data from a nearby gaged site (Intrenchment Creek near Atlanta, USGS 02203700; see **Figure 4.3**). The drainage area at the gage was 10.6 square miles. The applicable drainage area downstream of the properties on Shoal Creek was 7.1 square miles.
- The discharges at the mouth of Little Noonday Creek (with a drainage area of 7.2 square miles) were estimated from the gage on Noonday Creek at Hawkins Store Road, near Woodstock (USGS 02392950; see **Figure 4.3**) with a drainage area of 25.2 square miles.

At other ungaged sites with relatively small drainage areas (in this study, considered to be less than 3 square miles), peak flows were calculated using the rational method with precipitation data obtained from three nearby rainfall gages. In the rational method, the peak flow is calculated using the following equation:

$$Q = CIA$$

Where:

Q = Peak runoff (in cfs)

C = Dimensionless runoff coefficient, ranging from 0.25 to 0.4 for suburban residential land use

I = Rate of rainfall (in inches/hour)

A = Drainage area (in acres)

The peak runoff is determined using the average rate of rainfall that occurs over the time of concentration for the watershed. The rational method was used to determine peak flow rates on three flooding sources: Indian Creek, Cobbs Creek, and Poplar Creek. The time of concentration for the applicable drainage areas was determined using the Kirpich formula, reproduced below:

$$T_c = \frac{0.0078L^{0.77}}{S^{0.385}}$$

Where:

T_c = Time of concentration (in minutes)

L = length of main channel from headwater to outlet (in feet)

S = average watershed slope

The time of concentration determined for all three flooding sources was approximately 1 hour, so hourly rainfall rates were applicable. Rainfall data were analyzed for the following NCDC gages: Atlanta Airport, Fulton County Airport, and DeKalb Peachtree Airport (NCDC, 2010a). The gage locations are shown on **Figure 4.3**. Storm events resulting in high rainfall intensities at all three stations (at least 1.0 inch/hour) were assumed to have affected the surrounding watersheds. The peak rates of rainfall from all three stations were averaged to obtain the applicable peak rainfall for use in the rational method equation.

A slightly different approach was used for tributaries of major creeks. The flooding sources listed in **Table 4.3** were all cases in which a tributary was ungaged but the main creek had a stream gage with the appropriate period of record. The peak stages at the gages were found from the historical gage data, and the largest events were used in the study. For Noonday Creek Tributary 3, Morgan Lake Tributary, Stephenson Creek, Wildhorse Creek, and the Peavine Creek Tributary, the project buildings were in regions affected by backwater from the main stream. Thus, backwater from the main stream was causing flooding at the project buildings, and therefore the WSE at the main stream was used to estimate the elevation at the project buildings. For all other streams, the recurrence interval of each storm event on the main creek gage was

Table 4.3

Flooding Sources without Gages Near Communities with Project Sites

Gaged Flooding Source Used for Analysis	Ungaged Flooding Source
Intrenchment Creek	Shoal Creek
North Fork Peachtree Creek	Henderson Mill Creek
	Peachtree Branch of Henderson Mill Creek
Noses Creek	Wildhorse Creek
Noonday Creek	Little Noonday Creek
	Morgan Lake Tributary
	Noonday Creek Tributary 3
South Fork Peachtree Creek	Burnt Fork Creek
	Peavine Creek Tributary
	South Fork Peachtree Creek Tributary
South River	Stephenson Creek
Sweetwater Creek	Sweetwater Creek Tributary 1 – Douglas
	Sweetwater Creek Tributary 1 – Gwinnett

determined, and it was assumed that the corresponding recurrence interval would apply to flooding of the project buildings along the tributaries. The upstream WSEs could later be determined in the Hydraulic Analysis. **Table 4.3** shows the ungaged flooding sources and the corresponding gages used for analysis.

The Hydrologic Engineering Center Hydrologic Modeling System (HEC-HMS) rainfall-runoff model that was used for the Drew Valley Mitigation Flood Study (Dewberry, 2010a) was used to analyze North Fork Peachtree Creek Tributary A and the Unnamed Tributary to Northfork Peachtree Creek Tributary A. Under the assumption that peak events occurred during periods of high hourly rainfall and when other streams in the study area also experienced high peak flows, cumulative precipitation data were obtained from the DeKalb Peachtree Airport gage for three storm events. The rainfall data were not recorded in consistent time increments; rather, the increments ranged from 15 minutes to 6 hours. Therefore, it was necessary to plot the cumulative rainfall and manually read the data in 15-minute increments for input into the runoff model. The three events were routed through the model to determine peak flows for the two flooding sources.

4.1.1.3 Storm Event Analysis Summary

Of the events analyzed for the Georgia study, the September 2009 event was the most widespread, affecting most of the flooding sources. Fifteen flood events related to the September 2009 event were included in the study. As shown in **Table 4.2**, no county was affected by more than 10 flood events that would have caused damage in the MP_A scenario since the study baseline.

4.2 Hydraulic Analysis

A Hydraulic Analysis is used to determine the WSE for the events included in an LAS at the locations of interest. Hydraulic modeling may be used for the Hydraulic Analysis, based on peak flows determined in the Storm Event Analysis (see **Section 4.1**). Modeling uses 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 for the storm event(s) of interest.

If a flooding source has been studied in detail (e.g., for a FEMA Flood Insurance Rate Map), it may be possible to obtain a copy of the existing hydraulic model. Modifying the model may be possible simply by replacing the original flow data with flows for the event(s) 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. Water surface profiles in the Flood Insurance Study (FIS) based on the existing model may also be used to interpolate profiles for actual storm events.

If a hydraulic model is not available, a new model can be created using cross-section elevation data, roughness coefficients, boundary conditions, discharge (from the Storm Event Analysis), and data for any hydraulic structures, such as bridges or culverts, in the model area. If creating a new model is necessary, detailed topographic data for all river reaches of interest are necessary for the creation of channel cross sections. Outlier buildings or buildings located where adequate topographic data are not available should be eliminated from the study. If it is not possible to create a new hydraulic model, the buildings along that flooding source must be eliminated from the study.

4.2.1 Georgia Study: Hydraulic Analysis

A Hydraulic Analysis was used to determine the WSEs in the project areas. Three methods of determining WSEs were used in the Georgia study: determining HWMs directly adjacent to buildings, hydraulic modeling, and interpolating existing flood profiles in conjunction with gage data or HWMs.

4.2.1.1 High Water Marks

Flooding data such as HWMs following flood events are often recorded by Federal agencies such as FEMA, the USGS, and the USACE; State agencies; and local governments. HWMs are usually preferable for analysis and can produce the highest level of confidence in the estimate of losses avoided because they represent the actual water elevation observed for a particular event at a specific location. If enough HWMs were recorded in a particular community for a given storm event, it may be possible to create a digital flood surface using GIS software to interpolate WSEs for the entire project area, and hydraulic modeling would not be necessary.

HWM data were available for the September 2009 and September 2004 events for several flooding sources in the Georgia study (DeKalb County, 2004; Douglas County, 2009; Dewberry, 2010b), and the data points were adjacent to many of the buildings of interest. However, some of the HWM data for the September 2009 event contained discrepancies, such as inconsistent elevations and lack of survey certification. Therefore, only the HWMs from the September 2004 event and selected 2009 HWMs collected in Douglas County (Douglas County, 2009) were used to determine WSEs.

September 2004 Event

The applicable HWMs were generally in the immediate vicinity of the buildings and could be used directly as the WSEs for the 2004 event. On Nancy Creek, the results of the hydraulic model with the 2004 storm event flows show that the change in WSEs between the most upstream and downstream buildings was small (less than 0.3 foot). The only HWM for Nancy Creek was measured on Queens Way and was applied to the five buildings also located on Queens Way. The average difference between the HWM and the modeled WSE at that location was 0.7 foot, and the difference was added to all the modeled WSEs along Nancy Creek for the 2004 event to obtain more representative WSEs at the rest of the buildings on Nancy Creek.

On Indian Creek, HWMs were obtained at two locations in the vicinity of the buildings and had the same flood elevation. The modeled profile for the 2004 event showed a difference of more than 3 feet between the most upstream and most downstream properties along Indian Creek. It was assumed that the HWMs should apply only to the buildings directly adjacent to the collected HWMs or between the two HWMs. The WSEs for one building at the upstream end and two buildings at the downstream end were determined from the hydraulic model.

A comparison of the 2004 and 2009 HWMs on South Fork Peachtree Creek showed that the two events resulted in similar WSEs. HWMs for the September 2004 event were used to estimate the WSEs for the September 2009 event on several properties on tributaries to South Fork Peachtree Creek. The applicable HWMs were adjacent to the three Riderwood Drive properties on Burnt Fork Creek, the two Densley Drive properties on South Fork Peachtree Creek Tributary, and the 3636 Bishop Drive property on the Unnamed South Fork Peachtree Creek Tributary.

For eleven buildings[2] in DeKalb County, HWM data for the September 2004 event were available, but were not used to determine WSEs at these buildings. The demolition dates or project closeout dates for these buildings are after the September 2004 event. Therefore, the HWM data were not used, and losses for these buildings were not calculated for this event.

September 2009 Event

The applicable HWMs were located along Huey Creek in Douglasville and near Sweetwater Creek in Lithia Springs and Austell. In Douglasville, two HWMs were measured in the vicinity of three properties. The distance along Huey Creek between the two HWMs was used to estimate the WSEs at the properties.

In Lithia Springs, six HWMs were located in the vicinity of three properties. The HWM elevations did not appear to vary significantly in relation to the distance along Sweetwater Creek. Therefore, it was assumed the WSE at the properties would be best represented by the average elevation from all six HWMs, and the same value was applied to all three properties.

2 The eleven buildings are: 2157 Medfield Trail, Atlanta; 2319 Poplar Springs Drive NE, Atlanta; 2327 Poplar Springs Drive NE, Atlanta; 2333 Poplar Springs Drive NE, Atlanta; 2342 Nesbitt Drive, Atlanta; 2390 Drew Valley Drive, Atlanta; 2396 Drew Valley Drive, Atlanta; 3743 Kingswood Drive, Decatur; 621 Densley Drive, Decatur; 643 Cheviot Drive, Decatur; and 692 Heathmoor Place, Decatur.

In Austell, only one HWM was collected, which was at 23 Robin Road. The HWM was in the immediate vicinity of six properties on Robin Road and Wren Circle. Therefore, the HWM elevation was applied to all six properties.

4.2.1.2 Digital Hydraulic Modeling

When sufficient HWM data are not available, hydraulic modeling can be used to estimate flood depths. Hydraulic modeling uses discharges determined from the Storm Event Analysis in conjunction with detailed topographic data to estimate WSEs at a series of cross sections for the peak flow event(s) of interest. **Table 4.4** is a list of the flooding sources for which hydraulic modeling was used to estimate flood WSEs.

For seven flooding sources within the area of interest, the existing hydraulic modeling consisted of the hydraulic models from the FIS. In several cases, the existing model had been developed using the Hydrologic Engineering Center-2 (HEC-2) program or an older version of HEC-RAS and was updated to a newer version of HEC-RAS for the Hydraulic Analysis. When older programs were imported into a newer version of HEC-RAS, a minor adjustment at bridge and culvert structures was commonly required. The older versions of HEC-RAS allowed bridge and culvert structures to span the entire distance between the bounding upstream and downstream cross sections. The newer versions of HEC-RAS require a positive distance between the bounding cross sections and the bridge or culvert deck. When these modifications were required, the distance from the upstream cross section to the bridge or

Table 4.4

Flooding Sources with Hydraulic Modeling

Flooding Source	County	Source of Model	Type of Existing Model	Type of Model Used in Analysis
Indian Creek	DeKalb	FEMA	HEC-2	HEC-RAS
Little Noonday Creek	Cobb	FEMA	HEC-RAS	HEC-RAS
Nancy Creek	DeKalb	FEMA	HEC-RAS	HEC-RAS
Noonday Creek	Cobb	FEMA	HEC-RAS	HEC-RAS
North Fork Peachtree Creek	DeKalb	FEMA	HEC-RAS	HEC-RAS
North Fork Peachtree Creek Tributary A	DeKalb	Dewberry	HEC-RAS	HEC-RAS
Noses Creek	Cobb	FEMA	HEC-RAS	HEC-RAS
South Fork Peachtree Creek	DeKalb	FEMA	HEC-RAS	HEC-RAS
Unnamed Tributary of North Fork Peachtree Creek Tributary A	DeKalb	Dewberry	HEC-RAS	HEC-RAS

FEMA = Federal Emergency Management Agency
HEC-2 = Hydrologic Engineering Center 2
HEC-RAS = Hydrologic Engineering Center River Analysis System

culvert was increased slightly, and the bridge or culvert deck width was decreased slightly.

For two flooding sources, North Fork Peachtree Creek Tributary A and the Unnamed Tributary of North Fork Peachtree Creek Tributary A, the hydraulic modeling was obtained from the *Drew Valley Mitigation Flood Study* (Dewberry, 2010a). According to the FEMA Flood Insurance Rate Map for DeKalb County, the unnamed tributary has not been studied using either detailed or approximate methods. The *Drew Valley Mitigation Flood Study* included a HEC-RAS model of Tributary A and the unnamed tributary. The unnamed tributary affects 15 buildings in DeKalb County included in the Georgia study, and Tributary A affects 10 buildings along its banks. During the Storm Event Analysis, a rainfall-runoff model was used to determine peak flows for the two flooding sources. The flows for Tributary A were modeled using normal depth as the downstream boundary condition. The resulting WSEs at the confluence with the unnamed tributary were then used as the downstream boundary condition for the unnamed tributary during the hydraulic modeling.

For the buildings affected by flooding along North Fork Peachtree Creek, a modified HEC-RAS model was created from the existing HEC-RAS model for the creek, which had been used for the FIS. The existing model for North Fork Peachtree Creek extends from the DeKalb County boundary to approximately 3,800 feet upstream of Pleasantdale Road. Because of differing versions of the HEC-RAS program, the upstream distances at all bridge and culvert structures were changed from zero to 1 foot, and the deck widths were reduced by 1 foot.

Because the model included several flow change locations, the discharges determined in the Storm Event Analysis could not be input directly into the model. To determine the discharge at each flow change location for each studied event, the ratio of each storm event discharge to the FIS 10-year event discharge at the gage location was calculated. This ratio was applied at all flow change locations. The full extent of the model was used to determine WSEs because the model encompassed both the location of the affected buildings and the gage used in the analysis. The normal depth boundary condition from the existing model was used, and the Manning's n coefficient was changed consistently along the entire reach until the WSEs at the gage location were equal to the stage height recorded during the storm events.

For the buildings affected by flooding along South Fork Peachtree Creek, a modified HEC-RAS model was created from the existing

HEC-RAS model for the creeks, which had been used for the FIS. For South Fork Peachtree Creek, the existing model extends from the DeKalb County boundary to a point approximately 5.7 miles upstream. Because of differing versions of the HEC RAS program, the upstream distances at all bridge and culvert structures were changed from zero to 1 foot and the deck widths were reduced by 1 foot.

Because the model included several flow change locations, the discharges determined in the Storm Event Analysis could not be input directly into the model. To determine the discharge at each flow change location for each studied event, the same method that was used for North Fork Peachtree Creek was used. Instead of the normal depth, stage heights from the gage were used as the known WSE downstream boundary conditions because the FIS profile for South Fork Creek showed the WSEs for all events to be flat between the downstream end of the model and the gage location.

The existing model for Noonday Creek extends from the Cobb County boundary to approximately 350 feet upstream of New Salem Road. The existing model did not require modifications and was used as received with the latest version of HEC-RAS. The same method that was used for North Fork Peachtree Creek was used to determine flows at each flow change location, although a ratio with the 25-year event was used for the September 2009 event. The normal depth boundary condition from the existing model was used, and the Manning's n coefficient was changed consistently along the entire reach until the WSEs at the gage location were equal to the stage height recorded during the storm events.

Similar to Noonday Creek, the existing model for Little Noonday Creek did not require adjustment. The model extends from the confluence of Little Noonday Creek and Noonday Creek to approximately 2,000 feet upstream of Liberty Hill Road. Because no gage was available on this tributary, it was assumed that the storm events affecting Noonday Creek also affected Little Noonday Creek. The basin transfer method (see **Section 4.1.1.2**) was used to determine storm event discharges at the mouth of Little Noonday Creek.

Because the tributary model included several flow change locations, the discharges determined in the Storm Event Analysis could not be input directly into the model. In order to determine the discharge at each flow change location for each studied event, a ratio of the storm event discharge to the FIS 10-year discharge at the mouth of Little Noonday Creek was calculated. This ratio was applied at all flow change locations. As a downstream boundary condition, the

modeled main branch WSE at the confluence with the tributary was used.

The existing model for Noses Creek did not require adjustment. The model extends from Noses Creek's confluence with Sweetwater Creek to approximately 500 feet upstream of Kennesaw Avenue. The same method that was used for North Fork Peachtree Creek was used to determine flows at each flow change location. The WSE on Sweetwater Creek was used as the downstream boundary condition.

The existing model for Nancy Creek, which had been used for the FIS, extends from approximately 0.5 mile downstream to approximately 2.6 miles upstream of the studied properties. In order to get a working model, the upstream distance at the Interstate 285 culvert was changed from 0 to 1 foot, and the deck width was reduced by 1 foot. Discharges at flow change locations were determined using the same method used for North Fork Peachtree Creek. The normal depth boundary condition from the existing model was used, and because the gage location was not encompassed by the model extents, no other changes were made.

The existing FIS model for Indian Creek extends about 14,000 feet upstream from the confluence with Snapfinger Creek. For this study, the model was truncated to include the reach from Durham Park Road to just upstream of Memorial Drive. The upstream distances at road crossings were changed from zero to 1 foot, and the deck widths were reduced by 1 foot. In the original model, the road crossings had been modeled as bridges. A field investigation indicated that the three structures in the portion of the model being reviewed were actually culverts. Therefore, these road crossings were changed from bridges to culverts, and dimensions were adjusted to match measurements determined during the field investigation. The only major adjustment occurred at Durham Park Road, where the observed culvert opening was significantly larger than the bridge opening area in the original model. The flows calculated downstream of Memorial Drive from the Storm Event Analysis were all less than the 10-year flow reported in the FIS. The ratio of each storm event discharge to the FIS 10-year discharge was calculated. This ratio was applied at all flow change locations in the existing model for each storm event. The downstream boundary condition was based on normal depth using a slope of 0.003.

4.2.1.3 Interpolation of Existing Flood Profiles

Hydraulic Analyses may also be performed by interpolating existing flood profiles if a digital version of the hydraulic model is not available. The first step requires the determination of the WSE for the flood of interest at a single location along the flood profile. Methods for this step vary depending on whether the Storm Event Analysis uses gages that provide discharge data or stage data. For the Georgia study, all gages used for interpolation provided both stage and discharge data. Using the stage data, the flood elevation at the gage location was determined by adding the gage datum elevation referenced to National Geodetic Vertical Datum of 1929 (NGVD29) to the gage height for each storm event. Once the WSE of the storm event was determined at the gage location, the WSEs along the flooding source for each storm event were determined through interpolation of the existing FIS flood profiles. **Table 4.5** is a list of the flooding sources in the Georgia study for which this method was used.

Table 4.5

Flooding Sources that Used FIS Profiles

County	Flooding Source
Chattooga	Chattooga River
DeKalb	Burnt Fork Creek
	Henderson Mill Creek
	Peachtree Branch of Henderson Mill Creek
	Peavine Creek Tributary
	Shoal Creek
	South Fork Peachtree Creek Tributary
	Stephenson Creek
Douglas	Sweetwater Creek
	Sweetwater Creek Tributary 1 – Douglas
Gwinnett	Sweetwater Creek Tributary 1 – Gwinnett
	Yellow River

FIS = Flood Insurance Study

When existing profiles are used, standard interpolation methods can be applied when the storm event elevations at the gage location fall between the lowest (10-year event when FIS profiles are used) and highest (500-year event when FIS profiles are used) profiles. For example, for events between the 10-year and 50-year FIS profiles, the following relationship was applied to solve for $Stage_2$:

$$\frac{Gage_1 - 10yr_1}{50yr_1 - 10yr_1} = \frac{Stage_2 - 10yr_2}{50yr_2 - 10yr_2}$$

Where:

$Gage_1$ = WSE at the gage location for a particular storm event

$Stage_2$ = WSE at a second location for a particular storm event

$10yr_1$ = 10-year WSE at the gage location determined from the FIS profile

$10yr_2$ = 10-year WSE at a second location determined from the FIS profile

$50yr_1$ = 50-year WSE at the gage location determined from the FIS profile

$50yr_2$ = 50-year WSE at a second location determined from the FIS profile

In many instances, storm event elevations were above the 500-year event or below the 10-year event. In these instances, it was assumed that between two locations along the flood profile for an event smaller than the 10-year event (or larger than the 500-year event), the average water surface slope would be the same as the water surface slope of the 10-year flood profile (or the 500-year flood profile) between the same two locations.

4.3 Flood Inundation Analysis

For building modification 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).

Most Flood Inundation Analyses and mapping are conducted using GIS software. Cross sections used in the Hydraulic Analysis are digitized and attributed with peak WSEs for the events of interest. Flood elevations are then interpolated between cross sections 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. For elevation and relocation projects, MP_C conditions must also be analyzed. WSEs are also extracted and exported into a table format to be compared to the MP_C FFE.

When MP_A and MP_C FFE data are available, the WSE at a building is extracted from the water surface layer, and the FFE is subtracted directly from the WSE to determine the depth of flooding in each building for each condition. 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 (see **Table 3.1**), based on the type of foundation, from the overall flood depth. In determining WSEs, ground surface elevations, and FFEs, consistent use of the same vertical datum is confirmed to ensure that the calculations of water depth are correct.

4.3.1 Georgia Study: Flood Inundation Analysis

If digital hydraulic modeling was used in the analysis, the cross sections from the model were digitized and attributed with peak WSEs. Using the ARCGIS-3D extension, a triangulated irregular network (TIN) was created based on the flood elevations associated with each cross section, thereby interpolating a digital representation of flood WSEs between cross sections. A similar process was performed on FIS cross sections using WSEs obtained from the interpolation of FIS flood profiles in combination with storm event elevations at gage or HWM locations.

The geocoded structure location points were used to extract the WSE of the modeled flood event at each building. The depth of flooding for each building was determined by subtracting the FFE from the WSE.

The vertical datum of the WSEs should be consistent with the vertical datum used for reporting structure FFEs in an LAS. The hydraulic models and flood profiles used in the study were reported relative to either the NGVD29 or North American Vertical Datum of 1988 (NAVD88). All WSEs were converted to NGVD29 except in Cobb County, where the difference between NAVD88 and NGVD29 was negligible. According to GEMA, the vertical datum for the FFEs of all buildings was NGVD29, with the exception of buildings in Douglas County under PDM-2007-PJ3, which may be NAVD88. The latitude and longitude coordinates for the buildings under PDM-2007-PJ3 were entered into the USGS VERTCON program. It was determined that the difference between NGVD29 and NAVD88 was less than 0.25 foot for these properties. Because the FFEs were often rounded to the nearest foot, it was assumed that the conversion factor would be within the accuracy of the elevations and that no conversion between NGVD29 and NAVD88 was therefore required.

In the Trion City Schools Project, a new K-12 school was constructed well above the elevation of the rest of the City of Trion and outside the 500-year floodplain. Discussions with Trion City

School officials confirmed that the school in its current location has not been flooded during any event. Therefore, flooding conditions for the MP_C scenario were not assessed, and physical damage to the school was not determined.

4.4 Georgia Study: Phase 2 Summary

The methodology in Phase 2 (Physical Parameter Analysis) varied depending on the information available at the site of the building. At some sites, the hydrologic and/or hydraulic information was inadequate to perform an accurate analysis. Ten buildings were eliminated in Phase 2 because of insufficient hydrologic and hydraulic data, leaving 172 buildings to advance to Phase 3 (see **Table 4.6**).

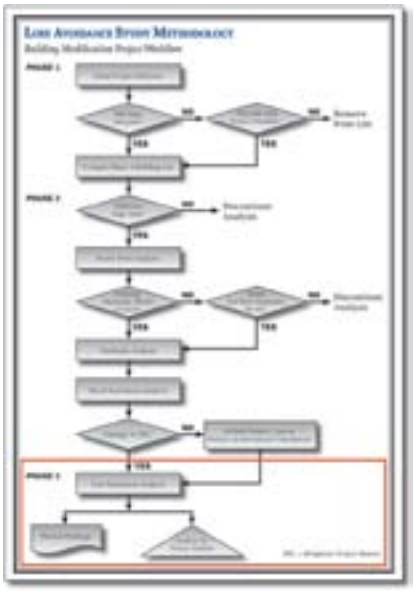
Table 4.6

Buildings Eliminated in Phase 2

Project Number	Street Number and Street Name	City	County	Flooding Source
1033-0123	2731 Cedarbook Drive	Marietta	Cobb	Noonday Creek Tributary 3
	2741 Cedarbook Drive			
	2657 Lee Ann Drive			
1209-0042	3582 Brookfield Lane	Decatur	DeKalb	Cobbs Creek
FMA-2006-PJ2	3209 Highland Drive	Smyrna	Cobb	Poplar Creek
PDM-2007-PJ3	3695 Miller Street	Lithia Springs	Douglas	Miller Creek
	3904 Yates Road			Beaver Creek
PDMC-PJ-04-GA-2007-006	3150 Bobbie Lane	Atlanta	DeKalb	Cobbs Creek
	991 Fayetteville Road			Sugar Creek
RFC-2007	481 Landover Drive	Decatur	DeKalb	South Fork Peachtree Tributary

Section Five:

Phase 3 – Loss Estimation Analysis



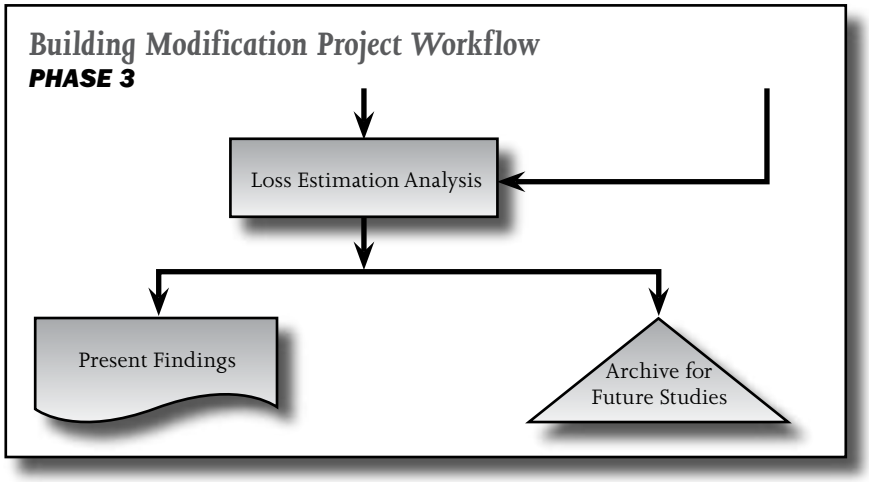
The final phase of an LAS consists of a Loss Estimation Analysis in which the value of the losses avoided are estimated, based on the effectiveness of the mitigation project in storm events since the study baseline, and compared to the project investment to calculate an ROI. This section provides a description of the methodology that was used in Phase 3 for the Georgia study. The methodology is illustrated in **Figure 5.1**.

The two major tasks in Phase 3 are:

- Calculating losses avoided
- Calculating the ROI

For detailed information on Phase 3 methodology, see *Loss Avoidance: Riverine Flood Methodology Report* (FEMA, 2010a).

Figure 5.1



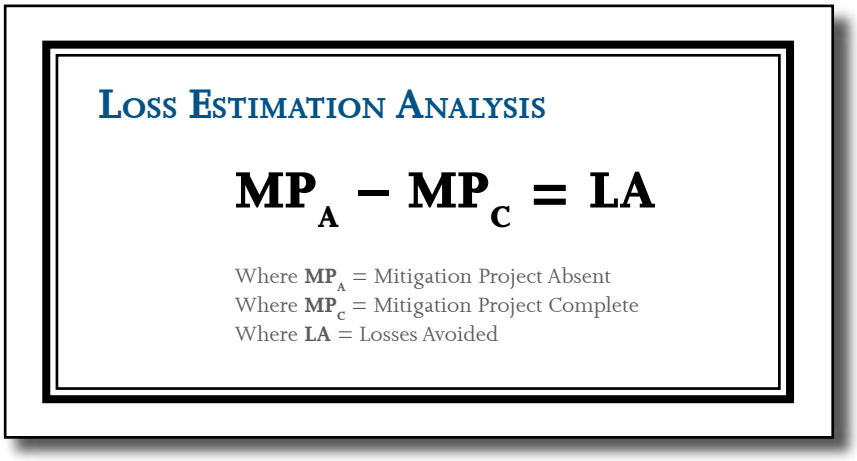
5.1 Approach to Calculating Losses Avoided

In Phases 1 and 2 of a building modification LAS, the following information is determined:

- The storm events that have occurred since the study baseline that would have caused damage 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 and MP_C scenarios, estimated from the Flood Inundation Analysis

In Phase 3, the dollar value estimate of the losses (damage) is calculated for the MP_A and MP_C scenarios using the flood depth at each building for events occurring after the study baseline. To calculate losses avoided (in dollars), MP_C damage is subtracted from the MP_A damage, using the formula presented in **Figure 5.2**. The losses are adjusted to 2010 values. For acquisition projects, there is no MP_C damage because the building no longer exists. Therefore, losses avoided are equal to MP_A damage.

Figure 5.2



5.2 Loss Categories

Once the Flood Inundation Analysis is complete and the potentially affected buildings have been identified, flood damage must be evaluated. **Table 5.1** reflects the potential damage types for any flood mitigation project. As shown in the table, potential damage is divided into loss categories. Loss categories generally include physical damage, loss of function, emergency protective measures, and nontraditional benefits, all of which contain multiple loss types. The following subsections discuss the loss categories that are relevant to the Georgia study.

5.2.1 Physical Damage

For building modification projects, physical damage is limited to the direct damage to the building and its contents. Physical damage can be estimated using either:

- Historical damage from events of similar size
- FEMA Benefit-Cost Analysis (BCA) Tool Version 4.5 (FEMA, 2009a)[3] depth-damage functions (DDFs) and known flood

3 All references to the FEMA BCA Tool in this document are to the Benefit-Cost Analysis Tool, Version 4.5 (FEMA, 2009a).

Table 5.1

Loss Estimation Types and Categories

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 Protective Measures	• Debris Removal Services • Governmental Expense
Nontraditional Benefits	• Emergency Response Services • Avoidance of Mental Stress and Anxiety • Fire Suppression • Hazardous Materials Cleanup • Historic and Cultural Heritage Preservation • Floodplain and Wetland Protection • Recreational Opportunities • Volunteers and Nongovernmental Organizations • Reduced Insurance Transaction Costs Including Project Worksheets

Source: FEMA (2007a)

depths (developed during the Flood Inundation Analysis) for buildings

When available, actual repair costs (or replacement costs if a 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, the National Flood Insurance Program (NFIP) 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 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, nonprofit 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 historical information is not available, the losses must be estimated. Established depth-damage relationships are commonly used for estimating losses caused by flood hazards. These relationships, which have been developed by FEMA, the USACE, and other agencies using observed data from historical events and expert elicitation, generally identify the loss that is likely to occur at certain intervals (e.g., flood depths). For example, the FEMA BCA Tool was developed to standardize determinations of cost-effectiveness for mitigation projects and includes damage curves for determining damage based on the severity of an event. The damage curves included in the FEMA BCA Tool can be adapted to an LAS. For the flood module of the FEMA BCA Tool, default DDFs are included for various residential, public, and commercial types of buildings based on information from FEMA's expert elicitation and the USACE. The modules include curves for building damage and building contents damage. See **Appendix A** for the DDFs used in this study.

5.2.1.1 Building Damage

If historical building damage information from similar events is not available, the damage must be estimated. To evaluate the building damage, the following steps must be followed for each building:

- An inventory of the building must be completed to determine characteristics such as type of building, number of floors, and FFE. This type of information is generally obtained from project files or site visits or by searching community databases such as tax assessment and parcel data.
- A determination of the BRV for each inundated building must be made. Only the BRV, and not the fair market value of the building, should be used. The BRV can be estimated based on values provided by local officials or local contractors, or by using nationally recognized cost-estimating guides.

Once the BRV and building type are known, damage for various flood scenarios can be estimated using the flood DDFs discussed previously. To do so, the following steps should be taken:

- A selection of the appropriate DDF for the building type must be made. Then, the flood depth (determined through the Flood Inundation Analysis) must be correlated with the appropriate

percent damage ratio from the DDF to estimate the percent damage to each building.

- The percent damage ratio must be multiplied by the BRV to calculate the building damage for the flood event.

If the percent damage determined from the DDF exceeds 50% for a typical building, the building should be assumed to be substantially damaged and would be replaced rather than repaired. In those instances, the building damage should be calculated as equal to the total BRV. It should be noted that the substantial damage threshold can vary. For example, if the building is extremely substandard, the threshold would be lower, and if the building is historic, the threshold may be higher.

5.2.1.2 Contents Damage

If historical contents damage information from similar events is not available, the damage must be estimated. The process used to calculate damage to contents within each building is similar to calculating damage to the building.

- The value of the contents may be determined through owner interviews, insurance information, and/or tax records. The estimation of contents damage should include a consideration of the depth of flooding in relation to the damage.
- When the actual value of the contents is unknown, damage to the contents can be estimated. First, the contents value may be estimated by multiplying the appropriate contents-to-building value ratio by the BRV. The flood depth (determined through the Flood Inundation Analysis) must be correlated with the appropriate percent damage from the DDF to estimate the percent damage to the contents. The percent damage must be multiplied by the total contents value to calculate the contents damage for the flood event.

5.2.2 Loss of Function

For building modification projects, loss-of-function damage is defined as the economic impact to an individual or the community that occurs because of physical damage to the building. Loss-of-function damage 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 are completed. Loss-of-function costs associated with damage to a business could be loss of business income, temporary relocation to another building, or lost wages for employees. Loss-of-function

costs resulting from damage to public buildings could be the loss of critical public services, such as police and fire departments.

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 Tool contains methodologies and values that can be used to calculate loss of function. The *HAZUS MH MR4 Flood Model Technical Manual* (FEMA, 2009b) contains methods similar to the FEMA BCA Tool 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 provide a more accurate representation of a project area than the national or regional values from tools such as the FEMA BCA Tool 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.

5.2.2.1 Displacement Expense

Displacement time is the period during which occupants are displaced from a building in order for repairs to be made. The loss is therefore associated with the cost of renting a temporary space during the displacement. Displacement should be included in the analysis only if a temporary alternate location is necessary to continue the function of the damaged building while it is being repaired.

The losses associated with displacement can be calculated once a determination of per-unit costs for the displacement of occupants is made. The FEMA BCA Tool provides standard values that can be used to calculate costs for displacement, based on a national average of rental costs per unit area. For example, the costs for residential displacement include rental costs for temporary facilities, which are estimated as $1.44 per square foot per month. If area-specific rental costs are available, they will produce a more appropriate estimate of the actual displacement expense and should be used. Area-specific values can be determined through historical information, information from real estate agents and rental companies, or emergency assistance organizations such as the American Red

Cross. The FEMA BCA Tool also provides standard values for one-time displacement costs. These costs are based on building use and include one-time costs such as moving fees and utility hookup fees.

Flood depths must be correlated with the appropriate displacement time in the DDF, and the number of displaced days must be multiplied by the displacement expense for each day to calculate the loss.

5.2.2.2 Disruption Expense

Lost time can be incurred by individuals who must take pre-disaster preventative measures, clean up or repair damage, manage insurance claims, or deal with other disaster-related matters. The basic economic concept is that personal time has value, regardless of formal employment compensation. Therefore, it can be assumed that 1 hour of work is equal to 1 hour of leisure time because the "opportunity cost" of a leisure hour is equal to the wage earned for an hour of work. To compute disruption time, the following steps should be taken:

- Determine the average employee per-hour wage and benefits amount. If available, local averages should be used. However, the current national average for wages and benefits from the U.S. Department of Labor, State average, or regional average can also be used.
- Determine the number of disrupted residents. If the number of residential buildings affected is known, the average number of adults per household (from census data or community demographic data) can be used to estimate the total number of adult residents disrupted.
- Determine the time of disruption. The FEMA BCA Tool does not provide a standardized curve, so an estimate based on the amount of disruption time must be used. The calculated disruption time should be used for each adult in the household.
- Multiply the number of lost hours due to disruption by the value of average wages for all affected residents.

5.2.2.3 Loss of Public Service

If a public building closes temporarily because of a flooding event, there is a potential for a loss of public service. For example, public services may include those provided by public works departments, police stations, libraries, or courthouses. Private, nonprofit organizations such as schools and hospitals can also be included because they essentially provide public services.

The first step in valuing loss of public service is to determine whether the service is critical or noncritical because the loss of public service calculation varies by type of service and the site of the facility. For the Georgia study, the only public service involved is Trion City Schools, which is a noncritical facility.

Standard values do not currently exist for estimating the value of public services. Additionally, public agencies do not calculate the value of the actual costs of the loss of public services. The estimated value of the loss of noncritical public service buildings can be estimated by following this procedure:

- Determine the economic impact of each loss day of operation. Currently, FEMA estimates the value of noncritical public services based on the costs necessary to provide the public service. Generally, the daily costs of providing service are determined using the annual operating budget for the particular service.
- Determine the number of lost days or the total number of days the public service would be unavailable because of flooding. This calculation uses the FEMA BCA Tool functions to calculation loss of function time.
- Multiply the daily economic impact of the loss of public service by the number of lost days.

5.2.3 Emergency Protective Measures

The cost of emergency protective measures includes the costs related to response and recovery activities conducted by local, State, and Federal government agencies as a result of a hazard event. Examples of emergency protective measures are removing health and safety hazards and removing debris. Although there are many types of emergency protective measures, debris removal was the only type included in the Georgia study. These 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 impact 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.

5.2.3.1 Debris Removal Services

Severe storms or torrential rains can cause overflow of rivers and streams. Flood debris from these events may consist of sediment, wreckage, and personal property deposited on public and private property. Structural damage to buildings can also result from inundation but is usually limited to the floodway and the floodplain area immediately adjacent to the waterway.

Construction and demolition debris can be defined as damaged components of buildings and other structures and includes lumber and wood, gypsum wallboard, glass, metal, roofing material, tile, carpeting and floor coverings, window coverings, pipe, concrete, fully cured asphalt, equipment, furnishings, and fixtures. This type of flood debris is typically generated during cleanup or demolition of the flooded building.

Removal of construction byproducts generated by repairs or rebuilding is typically covered by insurance policies or included in the overall cost for reconstruction projects. Debris is often removed from private property by the homeowner or by a commercial hauling company but may also be removed by the community.

The *Nontraditional Benefits Methodology for Loss Avoidance Studies* (FEMA, 2009c) provides an estimation method for cost of debris removal. The algorithm for estimating cleanup costs in the MP_A scenario is:

$$C_A = \sum_{t=1}^{T} V_t (D)(C)$$

Where:

C_A = cost of debris removal in the MP_A scenario

T = total for all debris types t

V_t = volume of debris type t (in cubic yards)

D = distance debris must be transported (in miles)

C = cost of haulage (in dollars per cubic yard per mile)

To determine the value of losses avoided for debris removal, the analyst must determine how both the volume and type of debris will change in the MP_C scenario.

5.2.4 Nontraditional Benefits

Nontraditional benefits refer to a class of damage and costs associated with hazard events that are often not quantified when assessing the benefits of hazard mitigation projects. The nontraditional benefit types applicable to the Georgia study include avoidance of mental stress and anxiety, recreational opportunities, and reduction in insurance transaction costs. The following subsections discuss these benefit types.

5.2.4.1 Avoidance of Mental Stress and Anxiety

People can experience acute and chronic psychological problems such as stress, exhaustion, nightmares, depression, and despair following a disaster. Unfortunately, little research has been conducted on the economic impact of these problems.

Parker et al. (1987) found that flood victims in Swalecliffe, England, were more concerned about intangible impacts than direct damage. The intangible impacts were long-term health effects, loss of irreplaceable memorabilia, stress, and worry about future flooding. These results suggest that the unpriced (non-market) values of flood losses may be greater than those that are priced.

Bennet (1970) conducted an often-quoted study of the health effects of a flood in Bristol, England, in 1968. The results of the study include the finding that:

> Surgery attendances rose by 53 per cent, referrals to hospital and hospital admissions more than doubled. In all respects the men appeared less able to cope with the experience of disaster than the women did (p. 454).

A number of studies have found significant mental health impacts associated with floods, wildfires, and hurricanes (Chamberlain et al., 1981; Mental Health Research and Evaluation Centre, 1985; Smith et al., 1990). The studies used surveys to estimate the proportion of the disaster-affected population that was adversely affected and the number of the days of debilitation. The monetary value of the number of days lost through debilitation is usually not provided.

Disasters have a substantial impact on mental health despite the provision of welfare teams to assist the affected population. According to Read Sturgess and Associates (2000), residents of Benalla, Australia, were still traumatized 18 months after the 1993 Benalla Floods despite intensive support to the community.

Examples of expenditures on mental health after disasters are as follows:

- Following Hurricane Floyd in South Carolina in 1999, FEMA awarded a grant of $100,000 for crisis counseling for the approximately 6,500 persons who were affected by the storm, the equivalent of an average of approximately $15.38 per person ($21.29 per person in 2010 dollars).
- After the terrorist attacks in New York City in September 2001, Project Liberty, the largest federally funded crisis counseling program in history, was launched to assist victims and their families. With funding of approximately $154.7 million, the program is estimated to have reached 2.5 million people for an average expenditure of $61.88 per person, equivalent to $80.73 per person in 2010 dollars.
- Following Hurricane Katrina in 2005, the Substance Abuse and Mental Health Services Administration awarded approximately $20 million to the State of Mississippi to provide crisis counseling services to the population (more than 300,000 persons) in 47 counties, resulting in an average expenditure of approximately $66.58 per person, which is equivalent to $77.19 in 2010 dollars.

The mental stress and anxiety benefit may apply to many natural hazards, including floods. Cost data for crisis counseling can be obtained from FEMA Crisis Counseling program data, local governments, community-based organizations, faith-based organizations, other nongovernmental organizations, and private-sector entities that provide crisis counseling services.

5.2.4.2 Recreational Opportunities

Mitigation of some hazards may protect recreational sites or add open space for recreational uses. Acquisition and demolition of numerous contiguous parcels, or acquisition of parcels adjacent to existing recreational opportunities, may increase open space that provides opportunities for recreation. For example, constructing a drainage culvert may prevent a recreational area from being flooded, and creating a wetland may provide recreational opportunities.

Only the loss or gain of recreational opportunities is discussed in this section. However, some mitigation projects can protect the improved/maintained values associated with environmental recreational assets including walking tracks, campground, and other facilities.

The USACE has issued an economic guidance memorandum that describes the daily value for recreation opportunities

(USACE, 2009). According to the memorandum, general recreation is valued between $3.54 and $10.63 per person per day (2010 dollars). General recreation includes activities that are attractive to the majority of outdoor users and require access and facilities. It is likely that in most cases, mitigated properties providing recreational opportunities would provide activities on the lower end of the range of values. These values could be used to determine the economic value associated with changes in recreational opportunities.

According to the *Nontraditional Benefits Methodology for Loss Avoidance Studies* (FEMA, 2009c), the algorithm below is the common approach used in the literature to quantify impacts associated with recreation.

$$R = \sum_{i=1}^{I} d_i (y_i)(v_i)(s_i)$$

Where:

R = recreational values

I = total for all affected parks i in the study area

d_i = number of days that a park is available/unable to provide service

y_i = value of a day of recreation for park i

v_i = average daily attendance (total people) of the park i

s_i = substitution value[4] (between 0 and 1) for park i

5.2.4.3 Reduced Insurance Transaction Costs

A flood mitigation project is intended to reduce or eliminate long-term risk to people and property from the effects of flooding. When a flood mitigation project is successful, it is likely there will be an associated reduction in the number of claims that are made to either:

- Private insurance companies
- NFIP for properties with federally backed flood insurance
- The PA Program (public agencies and certain private, nonprofit entities with debris management, emergency service, and physical damage expenses)

A transaction cost is the cost incurred in making an economic exchange. With regard to flood insurance, transaction costs include all of the material and labor costs associated with preparing an insurance claim or PW.

4 The substitution value is a subjective measure of the extent to which a site can be replaced by an alternative site after a disaster.

In addition, when properties are acquired and maintained as open space in perpetuity, the NFIP experiences a reduction in operating costs for every policy that is eliminated. Such savings in operating costs may be considered losses avoided, which are appropriate for inclusion in an LAS. Note that insurance rate reductions are a transfer payment and are therefore not appropriate for an LAS.

When a mitigation project reduces the number of PWs that would need to be completed, there will be a reduction in the costs required to develop and administer the PWs. According to the *Nontraditional Benefits Methodology for Loss Avoidance Studies* (FEMA, 2009c), a potential algorithm for determining the saving in transaction costs for PWs is:

$$PW_A = N_A(C)$$

Where:

PW_A = cost of developing and administering PWs in the MP_A scenario

N_A = number of PWs related to the mitigation project

C = average cost to develop and administer a PW

In addition, the following equation should be used to calculate the savings in transaction costs for flood insurance:

$$FI_A = H_A(I)$$

Where:

FI_A = cost of administering flood insurance in the MP_A scenario

H_A = number of NFIP policy holders or households relocated from floodprone areas though acquisition or relocation mitigation projects

I = current operating cost per NFIP policy

5.3 Georgia Study: Calculating Losses Avoided

The Georgia study included an evaluation of the following loss categories:

- Physical damage (damage to buildings and building contents)
- Loss of function (displacement costs and disruption expenses)
- Emergency protective measures (debris removal)

- Nontraditional benefits (avoidance of mental stress and anxiety, recreational opportunities, and reduced insurance transaction costs)

The following subsections discuss the loss categories, calculation methods, and assumptions for evaluating the losses avoided for the buildings included in the Georgia study. The loss estimation methods for the Trion City Schools Project are provided in **Appendix B**.

5.3.1 Georgia Study: Physical Damage

The physical damage assessed for the Georgia study included both building and building contents damage.

5.3.1.1 Building and Building Contents Damage

The methodology described in **Section 5.2.1** was used to calculate building and building contents damage for the MP_A and MP_C scenarios. Based on the building type, the appropriate building DDF from the FEMA BCA Tool was selected. Building damage was estimated based on the depth of flooding in the building determined during the Flood Inundation Analysis for each storm event. BRVs were inflated to 2010 values. Similarly, the building contents damage for each event was calculated based on the building contents DDFs. The value of the contents was based on building-to-contents value ratio by building type.

The following building and building contents DDFs were used for the Georgia study:

- **Residential –** One story without basement
- **Residential –** Two story without basement
- **Residential –** Three story without basement
- **Residential –** Split level without basement
- **Nonresidential –** Schools, engineered building type

Of the 172 buildings that were advanced to Phase 3, 34 residential buildings had walkout basements that were finished, unfinished, or partially finished. Information about walkout basements was provided by GEMA. According to the FEMA BCA Tool DDFs, if a building has an area with a floor below grade with at least one side at the same level as the adjacent ground level, it has a walkout basement. For finished basements, the FFE should be based on the elevation of the walkout basement and damage estimated based on a multistory building without a basement. For example, a one-story building with a walkout basement should be regarded as a two-story

building without a basement. The FFE should then correspond to the elevation of the walkout basement, not the elevation at the first story. This enables the appropriate building and building contents damage to be estimated from the lowest level of water entry. The Georgia study did not include any buildings with basements that were not walkout basements.

5.3.2 Georgia Study: Loss of Function

Loss-of-function costs for each residential building included displacement costs and disruption costs. For the Trion City Schools Project, loss of function was considered in a different manner because the schools did not displace to a temporary facility nor did students miss any school days for the overall school year. See **Appendix B** for a detailed discussion of loss of function for Trion City Schools.

5.3.2.1 Displacement Expense

Displacement costs include the extra costs incurred when occupants of a residence are displaced to temporary quarters while repairs are being made. For single-family residential buildings, the displacement cost provided by the FEMA BCA Tool is $1.44/square foot/month. This value includes rental costs and one-time displacement costs such as moving fees and utility hook-ups. This value was used in conjunction with the building square footage and the FEMA BCA Tool DDF for displacement time (per the structure type) to estimate displacement costs for single-family residential buildings. For the four condominiums, a displacement cost of $0.65/square foot/month and a one-time displacement cost of $0.88/square foot were used, per the FEMA BCA Tool guidance for a "RES3" multifamily dwelling. These values were used in conjunction with the building square footage and the FEMA BCA Tool displacement time DDF for a residential two-story building without a basement.

5.3.2.2 Disruption Expense

Disruption costs were estimated for single-family residential buildings and condominiums in similar ways. The FEMA BCA Tool guidance states that the FEMA standard value of labor is $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. According to the U.S. Census Bureau, the average number of adults per household in 2009 was

1.94 (U.S. Census Bureau, 2009). The assumption, therefore, was two adults per building.

5.3.3 Georgia Study: Emergency Protective Measures

Costs for emergency protective measures included debris removal costs associated with demolition of the buildings and building contents following acquisition. For example, after the September 2009 event, DeKalb County and the cities of Austell and Powder Springs in Cobb County had special flood debris pickup programs for residential neighborhoods; however, most residents of unincorporated areas needed to contact private trash haulers or carry debris to the landfill (DeKalb County, 2009; Ellis, 2009).

5.3.3.1 Debris Removal Services

To assess the reduction in debris removal costs for mitigated buildings, a methodology was developed that is similar to the cost estimation method described in the *Nontraditional Benefits Methodology for Loss Avoidance Studies* (FEMA, 2009c). Only the costs for removal of debris generated from damaged buildings and contents were included as MP_A damage. The quantity of vegetative and sediment debris are likely to be similar in the MP_A and MP_C scenarios. Therefore, the cost of removal of this type of debris was not included in the LAS. The algorithm for estimating debris removal costs in the MP_A scenario was:

$$C_A = \sum_{e=1}^{E} \sum_{b=1}^{B} \sum_{t=1}^{T} V_t (C)$$

Where:

C_A = cost of debris removal in the MP_A scenario

E = total number of storm events e

B = total number of buildings b

T = total for all debris types t

V_t = volume of debris type t (in cubic yards)

C = cost of haulage and disposal (in dollars per cubic yard)

To apply this approach, it was necessary to determine the volume and type of debris associated with the mitigated buildings. The method for estimated volume generated varied depending on whether the building was residential or nonresidential.

Estimating Debris from Residential Buildings

FEMA has two methodologies for estimating volume of debris. The *Public Assistance Debris Management Guide* (FEMA, 2007)[5] provides a methodology to predict the volume of debris generated from a totally destroyed single-family home, inclusive of structure, contents, and vegetative debris. HAZUS-MH (FEMA, 2009b) provides an estimation methodology that predicts the weight of building-related flood debris by major component (finishes, structural components, and foundation materials) but does not address building contents or vegetative debris. For the Georgia study, the methodology described in the *Public Assistance Debris Management Guide* was selected because it provides estimates for building contents and predicts debris volume instead of debris weight.

The *Public Assistance Debris Management Guide* provides a methodology for forecasting the quantity of debris generated by destroying a residential building. The formula for estimating demolition and contents debris from a single-family home is:

$$V_t = (L)(W)(S)(0.20)(VCM)$$

Where:

V_t = the volume of debris (in cubic yards)

L = length of building (in feet)

W = width of building (in feet)

S = height of building (in number of stories)

VCM = Vegetative Cover Multiplier (assumed to be 1)[6]

This estimation method generates results for a building with a total loss. Complete demolition of the building would be assumed to occur only when the structural damage to the building is greater than 50%. This is a common assumption when using the FEMA BCA Tool DDFs.

The *Public Assistance Debris Management Guide* also provides an estimation of building contents in residential buildings for the purpose of estimating flood debris. The amount of personal property in an average flooded single-family home was approximated as the following:

5 All references to the *Public Assistance Debris Management Guide* in this report are to FEMA (2007).

6 The VCM is a measure of the amount of vegetative debris within a subdivision or neighborhood. Because MP_A and MP_C scenarios include similar amounts of vegetative debris, the VCM was assumed to be 1 for the purpose of calculating losses avoided.

- 25 to 30 cubic yards for homes without a basement
- 45 to 50 cubic yards for homes with a basement

For the residential buildings evaluated in the Georgia study, the maximum volume for building contents debris was assumed to be 30 cubic yards for homes without a basement and 50 cubic yards for homes with a basement. For condominiums, the maximum volume for building contents debris was assumed to be 240 cubic yards to account for all eight units within a condominium. The maximum volume for construction and demolition debris was assumed to be the total debris, V_t, minus the contents debris.

Estimating Debris from Nonresidential Buildings

The *Public Assistance Debris Management Guide* also provides a methodology for forecasting debris quantities from nonresidential buildings. The formula for estimating demolition and contents debris from other building types is:

$$V_t = (L)(W)\frac{0.33}{27}$$

Where:

V_t = volume of debris (in cubic yards)

L = length of building (in feet)

W = width of building (in feet)

0.33 = constant to account for the "air space" in the building

27 = conversion factor from cubic feet to cubic yards

For the Georgia study, this methodology was used to estimate debris associated with a total loss at Trion City Schools in Chattooga County.

Debris Volume from Inundation

The FEMA BCA Tool DDFs were used to estimate the volume of debris that would be generated during inundation when the building damage was less than 50%. The DDFs were used to estimate the building and contents damage, as a percentage, for each flood event.

To estimate the volume of contents debris for a residential building, the maximum contents debris was multiplied by the percent content damage estimated by the DDF. To estimate the quantity of building debris, the maximum quantity of debris associated with the structural components of the building (total debris minus contents debris) was multiplied by the percent building damage

predicted by the DDF. This calculation was made for each building, during each event.

For the nonresidential buildings of the Trion City Schools, the maximum volume of debris predicted by the estimation methodology for nonresidential buildings was multiplied by the percent building damage predicted by the DDF.

This methodology assumes that the percent damage predicted for the building and contents correlates with the volume of debris that would be generated when damage is less than a total loss.

Cost of Haulage

Debris clearance and removal involves the clearance, pickup, hauling, processing, and disposal of debris generated by the event. Estimates for the cost of haulage were obtained from a commercial hauling company (1-800-GotJunk?, 2010) for debris removal in areas evaluated in this study. Services from this company were not available for all areas in this study, but it was assumed that competitors would be able to service these areas at similar prices. The cost of removing one full truckload (approximately 400 cubic feet) ranged between $478 to $518, depending on location, or approximately $32.27 to $34.97 per cubic yard. The cost includes the cost of loading the truck, transportation, and disposal of construction/demolition materials and personal property.

For comparison, estimates were obtained from a different commercial hauling company for the Atlanta and north metro areas (Affordable Junk & Debris Removal, 2010). Areas serviced by this company are within a 40-mile radius of Marietta and include residences within the cities of Marietta, Kennesaw, Smyrna, Atlanta, Decatur, and Lawrenceville. The cost for hauling and disposal of construction and demolition debris and residential building contents debris was estimated to be $18 to $22 per cubic yard, depending on weight. The pricing includes loading, cleanup, fuel, and disposal fees. Pricing also assumed 2 hours of loading labor for two workers.

Implicit in both of these cost estimates is a limited hauling distance to a local disposal facility. Local disposal facilities for construction debris and household waste include:

- **Cobb County** – Solid Waste Transfer Station, 1897 County Services Parkway, Marietta
- **DeKalb County** – Seminole Road Landfill, 4203 Clevemont Road, Ellenwood

- **Douglas County** – Cedar Mountain Landfill, 1730 County Services Road, Douglasville
- **Gwinnett County** – BFI/Richland Creek Landfill, 5691 South Richland Creek, Buford

Because of the relatively short distance needed for transport, costs associated with the haulage distance are included in the estimates for properties mitigated in these counties.

The City of Trion is approximately 20 miles from the Walker County Sanitary Landfill located at 5120 North Marble Top Road in Chickamauga. Although a commercial hauling company was not identified for this area, it was assumed that competing hauling companies would be able to service this area at similar prices.

For the Georgia study, the more conservative estimate of $18 per cubic yard for pickup and removal of construction and demolition or contents debris was assumed for the cities of Marietta, Kennesaw, Smyrna, Atlanta, Decatur, and Lawrenceville. For all other cities with mitigated properties evaluated in the LAS, a debris haulage cost of $32.27 was assumed. Although the resident's cost for debris removal may have been subsidized by the city or county, the overall debris removal and haulage costs were assumed to be similar to the estimates received from these commercial hauling companies.

These costs do not include the labor or equipment costs for additional demolition of the damaged components of buildings and structures (e.g., lumber and wood, gypsum wallboard, glass, metal, roofing material, tile, carpeting and floor coverings, window coverings, pipe, concrete). The costs also do not include disposal of hazardous materials.

In summary, the following steps were taken to estimate the avoided debris removal costs:

- Using the results of the Hydraulic Analyses, whether or not each building would have flooded during each flood event studied was determined.
- The building and contents damage for each building during each flood event was estimated using the FEMA BCA Tool DDFs.
- The total quantity of debris that would be generated by destroying the building was estimated using FEMA's *Public Assistance Debris Management Guide* methodology. The value included both building and contents debris.
- For residential buildings, the percent contents damage estimated by the DDF, the total contents debris for the destroyed building, and the haulage cost were multiplied. The percent building

damage estimated by the DDF, the total building debris less contents debris for the destroyed building, and the haulage cost were then multiplied. These values were added to estimate debris removal costs per building per flood event.

- For nonresidential buildings, the percent building damage estimated from the DDF, the total volume of debris generated by destroying the building, and the haulage cost were multiplied.
- The debris removal costs for all storm events studied in the LAS were added.

5.3.4 Georgia Study: Nontraditional Benefits

Nontraditional benefits for the Georgia study included the avoidance of mental stress and anxiety, recreational opportunities, and reduced insurance transaction costs.

5.3.4.1 Avoidance of Mental Stress and Anxiety

The economic impact of mental health issues is manifested in medical costs such as crisis counseling and crisis assistance programs, but data on these impacts often are not readily available. In addition, the overall level of crisis counseling will not change as a result of several houses being acquired and demolished or one school being relocated. In order to obtain a general idea of the mental stress and anxiety effects on local citizens, several cities, counties, and local emergency management agencies were contacted.

According to a senior engineer who had been with the City of Decatur for 8 years, the City is not aware of any resident dealing with stress, anxiety, or mental health problems from flooding. In one instance, a resident was told the City would purchase her property prior to a PDM grant being awarded, but her primary frustration was that she owned a floodprone property after she had moved away from Decatur and wanted to sell it (John Madajewski, personal communication, August 2010).

Discussions with Douglas County government personnel confirmed that there was no evidence of any community effort to provide treatment for stress and anxiety. However, Douglas County was able to find two previous property owners who had benefited from the acquisition/demolition of their homes before the September 2009 event. One owner, whose house had been on Mountain Creek Way in Douglasville, expressed a sense of relief knowing that he had taken the necessary precautions to protect his family from future flooding. He also indicated that without the acquisition,

there would have been a "superabundance of depression" (Terence Jackson, personal communication, August 2010). In addition, the owner indicated that his stress and anxiety level would have been higher without the great service of the Douglas County Water and Sewer Authority, which provided helpful communication and support during the floods.

According to a senior engineer with the DeKalb County Public Works Roads and Drainage Division, residents of DeKalb County witnessed stress, exhaustion, and anxiety during the September 2009 event. His discussions with residents during several community meetings after the flood indicated that many were taken by surprise when water entered their homes. Many residents' homes were not in the 100-year floodplain, but they experienced major flooding because of the overwhelmed drainage infrastructure. The DeKalb County engineer also stated that the community set up help centers where citizens could get answers to their questions and apply for disaster assistance. The costs associated with the help centers are unknown (Terrence Simpkins, personal communication, August 2010).

In summary, mental stress and anxiety among community members as a result of flooding were present in several counties included in the Georgia study. However, no usable data were available to quantify the losses avoided. Therefore, the avoided costs due to mental stress and anxiety were not included in the study.

5.3.4.2 Recreational Opportunities

Aerial photographs from a web mapping service were used to determine the current land use of the properties included in the LAS. The most recent imagery is dated April 2010 and includes most of the properties in the study area; for the Trion City Schools property, the most recent imagery is dated September 2009.

The aerial imagery indicates that 5 buildings have yet to be demolished as of September 2010; 1 building was demolished, but the slab foundation was not removed; 4 buildings were demolished, but demolition debris materials were left onsite; and 172 buildings were demolished and the foundations were removed. Mitigation of these buildings primarily created open space.

Of the 172 properties in which both the building and foundation were removed, 130 had neighboring houses that were also removed, creating contiguous lots of open space. Three additional properties were located across the street from other demolition projects, and 39 properties were noncontiguous.

Two improvements were created on mitigated sites that were included in this study: a stormwater detention pond, the Drew Valley Stormwater Drainage Facility, which reduced flooding during the September 2009 event; and a small community playground, Wren Circle Park, which was inundated during this same event.

The Drew Valley Stormwater Drainage Facility is located in the Drew Valley area of DeKalb County (FEMA, 2009d). This project was funded primarily under the HMGP. The acquisition and demolition of five properties included in the Georgia study in Drew Valley provided an opportunity for the stormwater detention facility to be built at this location.

The net benefits of the detention pond project were not included in the Loss Estimation Analysis. Determining the net benefits would require a detailed analysis of the flood control benefits to downstream residents after the detention basin was constructed, the capital and operations and maintenance (O&M) costs associated with developing the pond, and a detailed hydrologic analysis of the detention pond. Such analyses are beyond the scope of this study. Additionally, this study does not include an assessment of losses avoided as a result of the construction of the detention pond. The study considers only the losses avoided through the acquisition/demolition of the buildings in the vicinity of the detention pond. The aggregate losses avoided, as reported in **Tables 5.3 and 5.4**, do not include losses avoided due to the construction of the detention pond.

Wren Circle Park is located at 2558 Wren Circle in Austell, Douglas County. Six mitigated properties that were evaluated in this study provided open space for the park. The playground has one play structure, a basketball goal, and no buildings. The park was flooded during the September 2009 event. Although attendance at the park is not monitored, the county estimates that approximately 10 to 12 people from the surrounding community use the park every day. Following the September 2009 event, the park was unusable for approximately 2 months because debris from the neighboring community washed onto the parkland. After the floodwaters receded, the play structure was cleaned, and surface materials, such as sand, were replaced (Raiford Peacock, Douglas County Parks & Recreation, Recreation Manager, personal communication, 2010).

The net recreational benefits for Wren Circle Park were not included in the Loss Estimation Analysis because of insufficient data. To determine the net recreational benefits, the costs resulting from park closure during the September 2009 event would need to be subtracted from the recreational benefits provided since the

date the park was opened. In addition, the capital and O&M costs associated with developing the park would need to be added to the total project cost. However, the recreational benefits since the park opened and the capital and O&M costs are currently unknown.

5.3.4.3 Reduced Insurance Transaction Costs

Insurance transaction costs are applicable to insured buildings that would have been affected in the MP_A scenario for the flood events studied. Because an acquisition project generally involves demolition of the building, the building is no longer present after project completion and will not incur flood damage. Therefore, no insurance transaction costs are associated with the MP_C scenario for acquisition/demolition projects. For the Trion City Schools Project, the new school was built well above the elevation of the 500-year flood. Discussions with current staff at Trion City Schools confirmed that the new school has not been flooded since it was constructed. Therefore, no insurance transaction costs are associated with the MP_C scenario for this project. For the MP_A scenario, it was assumed that the school had flood insurance.

To estimate insurance transaction costs, a different method than that described in **Section 5.2.4.3** was used. The NFIP adjustor fee schedule for gross losses was used to correlate building and building contents damage with the insurance adjuster's fees.

Insurance adjusters are paid for their services to process insurance claims according to the *NFIP Adjuster Fee Schedule* (FEMA, 2008). The current fee schedule (effective as of September 1, 2008) for claims related to gross losses is shown in **Table 5.2**. Claims for gross losses

Table 5.2

NFIP Fee Schedule for Claims Related to Gross Losses

Claim Range	Fee
$0.01 – $1,000.00	$375
$1,000.01 – $5,000.00	$600
$5,000.01 – $10,000.00	$800
$10,000.01 – $15,000.00	$925
$15,000.01 – $25,000.00	$1,025
$25,000.01 – $35,000.00	$1,175
$35,000.01 – $50,000.00	$1,400
$50,000.01 – $100,000.00	3%, but not less than $1,600
$100,000.01 – $250,000.00	2.3%, but not less than $3,000
$250,000.01 and up	2.1%, but not less than $5,750

Source: FEMA (2008)
NFIP = National Flood Insurance Program

refer to building coverage for the repair of actual physical damage (building and contents) from flood under the Standard Flood Insurance Policy, which meets all requirements and rates set by FEMA.

According to FEMA's *National Flood Insurance Program Adjuster Claim Manual* (FEMA, 2010b), the schedule fee includes all travel, photographs, reporting, telephone, and office investigation expenses to conclude the claim, including identification of possible subrogation, salvage, and fraud. Customarily, the claim files includes coverage verification; normal adjuster investigation documentation, including statements when necessary; building reports and investigations; damage verification; and other documentation relevant to the adjustment of the claim under the NFIP's and the insurance company's traditional claim adjustment procedures.

Although actual costs to process an insurance claim may vary according to insurance agency, staff experience, and other operating conditions, the NFIP adjuster fee schedule for gross losses can be used to approximate these transaction costs. According to the fee schedule, the adjuster fee varies with the amount of the claim. Adjuster fees are paid out according to the range in which the claim amount falls. The claim amount may include building and building contents damage.

All of the communities in the Georgia study currently participate in the NFIP. However, because it is unlikely that every building included in the study had flood insurance at the time of the flood events that were analyzed in the study, it was assumed that 50% of the buildings in the study had flood insurance.

When the *NFIP Adjuster Fee Schedule* to approximate insurance transaction costs is used, it is assumed that the building and building contents damage is equal to the flood claim. Under the NFIP, coverage includes both contents and structural damage. However, there are limitations on what is covered. For example, damage/loss is not covered for animals and livestock; licensed vehicles; jewelry, artwork, furs, and similar items valued at more than $2,500; money or valuable papers; and personal property that is not secured to prevent flotation and located in a building that is not fully enclosed (such as an open carport). In addition, there is limited coverage available for basements. Building coverage for basements does not extend to wallpaper, carpeting, and similar finishings. The only contents kept in a basement that are covered are air-conditioning units, clothes washers and dryers, food freezers, and food in food freezers.

To estimate the avoided insurance transaction costs, the following steps were taken:

- Using the results of the Hydraulic Analyses, whether or not each building would have flooded during each flood event studied was determined.
- The building and building contents damage to each building was estimated using the FEMA BCA Tool DDFs.
- The building and building contents damage were added to determine the total physical damage for each building. The total was assumed to be equal to the claim amount.
- The appropriate fee according to the claim amount for each building was determined using the *NFIP Adjuster Fee Schedule* for gross losses.
- The total insurance transaction costs per storm event were determined by adding the adjuster fees for all buildings.
- The total insurance transaction costs over all storm events studied in the LAS were determined.

The algorithm for estimating insurance transaction costs in the MP_A scenario is:

$$T_A = \sum_{e=1}^{E} \sum_{b=1}^{B} I_{eb}$$

Where:

T_A = the total insurance transaction cost for the MP_A scenario

E = total number of storm events e

B = total number of buildings b

I_{eb} = adjuster's fee for each building b and each flood event e

For acquisition projects, buildings are demolished and consequently, damage or insurance transaction costs associated with the MP_C scenario are zero. For the Trion City Schools Project, the new school was built in a location well above the 500-year flood level, and the new school has not experienced any flood damage since it was built. Therefore, the losses avoided for insurance transaction costs, R, are equal to total costs for the MP_A scenario.

$$R = T_A$$

In addition to the adjuster's fees, there are likely to be costs associated with processing the claims data from FEMA and the individual insurance company. No usable data for these costs could be found because of the many factors that could affect the costs. For example, the costs may depend on the adjuster's salary and experience, the availability of workers to work on the claims,

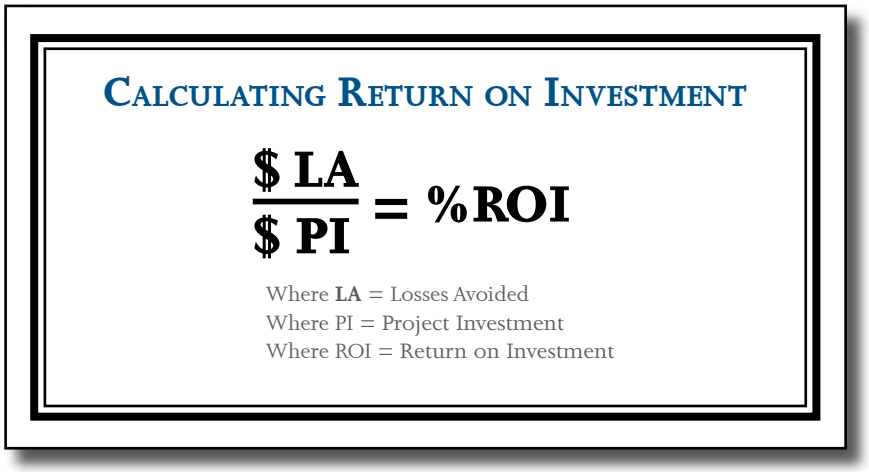
Table 5.3

Loss Estimation Results for Buildings in the Georgia Study

Analysis Information		Results by Loss Category												
		MP_A Scenario Damage						MP_C Scenario Damage						
		Physical Damage		Loss of Function		Emergency Protective Measures		Physical Damage		Loss of Function		Emergency Protective Measures		
County	Number of Buildings Included in Analysis	Damage to Building	Damage to Contents	Displacement Costs	Disruption Costs	Debris Removal Services	Reduced Insurance Transaction Costs	Damage to Building	Damage to Contents	Displacement Costs	Disruption Costs	Debris Removal Services	Reduced Insurance Transaction Costs	Total Losses Avoided (2010 Dollars)
Chattooga	1	$1,527,694	$554,923	$0	$0	$11,832	$43,735	$0	$0	$0	$0	$0	$0	$2,138,183
Cobb	61	$4,887,977	$2,057,918	$1,035,110	$1,172,846	$242,988	$83,054	$0	$0	$0	$0	$0	$0	$9,479,893
DeKalb	96	$5,764,004	$3,104,901	$1,141,023	$1,280,073	$269,420	$143,804	$0	$0	$0	$0	$0	$0	$11,703,226
Douglas	12	$1,081,042	$486,157	$311,974	$441,730	$86,144	$20,572	$0	$0	$0	$0	$0	$0	$2,427,618
Gwinnett	2	$690,097	$289,068	$400,483	$194,862	$82,626	$20,313	$0	$0	$0	$0	$0	$0	$1,677,449
Total	**172**	**$13,950,814**	**$6,492,967**	**$2,888,590**	**$3,089,511**	**$693,010**	**$311,478**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$27,426,369**

MP_A = Mitigation Project Absent
MP_C = Mitigation Project Complete

Figure 5.3



insurance company overhead costs, and other factors that are difficult to quantify. As a conservative measure, the additional costs associated with processing the claims data from FEMA and the individual insurance companies were not included in the Loss Estimation Analysis.

A summary of the losses avoided is presented in **Table 5.3**.

5.4 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** shows the formula used in calculating the ROI.

The denominator, Project Investment (PI), is the total project investment for the mitigation project being evaluated. PI does not represent the Federal investment alone. Rather, it is the total investment for the project made by all parties involved. Also, all of the losses avoided are calculated in 2010 values; therefore, the actual costs to mitigate each building should be adjusted to 2010 values.

The numerator, Losses Avoided (LA), represents the total losses avoided for the mitigation project being evaluated. The ROI may be calculated for one or multiple 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, by community, or for the entire 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.

5.4.1 Georgia Study: Calculating Return on Investment

In general, the more events that are evaluated in an LAS, the higher the ROI. The ROI was calculated in various ways to provide a series of data:

- An ROI was calculated for each individual building for each event that was analyzed. This information is reported by county (see **Appendices B through F**). These data are the basis for the ROI summaries.
- An ROI was calculated for each project (see **Appendix G**, **Table G.1**). For projects that included multiple buildings, the highest ROI (1141%) was from project 1311-0004 in Gwinnett County. The ROIs shown in **Table G.1** reflect only the damage and project costs related to the buildings that remained in the study after Phase 2.
- A total ROI was calculated for each event for each county, based on the cumulative avoided losses of all the buildings that would have been affected and the total cost to mitigate all of the buildings in that county. As shown in **Appendix G**, **Table G.2**, the September 2009 event affected the highest number of buildings of any event. The county with the highest ROI was Gwinnett County, which had an ROI of 562% for all events affecting the county.
- An ROI was calculated for each flood event analyzed in the study. The ROI for each event is shown in **Appendix G**, **Table G.3**. The September 2009 event had the highest losses avoided and the greatest number of buildings included in the study (169 of 172 buildings) because the event affected every county in the study area. The total ROI for the September 2009 event was 44%.
- An ROI was calculated for each building based on the cumulative avoided losses for all of the events that would have affected the building if the mitigation project had not been implemented (see **Appendices B through F**). The total losses

Table 5.4

Return on Mitigation Investment and Loss Estimation Results For Buildings in the Georgia Study

Analysis Information		Results By Loss Category								
County	Number of Buildings Included In Analysis	Building Damage	Contents Damage	Displacement Costs	Disruption Costs	Debris Removal Services	Reduced Insurance Transaction Costs	Total Losses Avoided (2010 Dollars)	Total Project Investment (2010 Dollars)	County ROI
Chattooga	1	$1,527,694	$554,923	$0	$0	$11,832	$43,735	$2,138,183	$6,428,806	33%
Cobb	61	$4,887,977	$2,057,918	$1,035,110	$1,172,846	$242,988	$83,054	$9,479,893	$8,628,622	110%
DeKalb	96	$5,764,004	$3,104,901	$1,141,023	$1,280,073	$269,420	$143,804	$11,703,226	$32,394,245	36%
Douglas	12	$1,081,042	$486,157	$311,974	$441,730	$86,144	$20,572	$2,427,618	$1,135,106	214%
Gwinnett	2	$690,097	$289,068	$400,483	$194,862	$82,626	$20,313	$1,677,449	$298,589	562%
TOTAL	**172**	**$13,950,814**	**$6,492,967**	**$2,888,590**	**$3,089,511**	**$693,010**	**$311,478**	**$27,426,369**	**$48,885,368**	**56%**

ROI = Return on Investment

avoided for each building represent the total MP_A damage minus the total MP_C damage for that building.

- A total ROI of 56% was calculated for the study as a whole, based on the cumulative losses calculated for all the buildings and the total cost of mitigation for all of the buildings. The ROI calculated for each county and the resulting ROI for the study are shown in **Table 5.4**. The aggregate losses avoided for all buildings was $27,426,369 and the aggregate project investment was $48,885,368 (both values in 2010 dollars). The ROI reflects all the losses avoided for events occurring after each building's study baseline date. The ROI will increase as additional storm events occur. More detailed loss calculations for each building and each event are provided in **Appendices B through F**.

The ROI of 56% for the entire study demonstrates that Georgia's investment in the building modification projects that were studied was successful. Building modification projects are expected to reduce loss from 30 to 100 years after project implementation depending on the type of project. The useful life of residential elevation projects is 30 years, and the useful life of acquisition and relocation projects is approximately 100 years.

The projects in the Georgia study have already demonstrated an ROI of 56%. The first mitigation activity included in the study was completed in 1997 (approximately 13 years ago), and other buildings were mitigated as recently as 2009. Because many of the buildings included in the study had a fairly recent project completion date, the ROI is not as high as one that would result from a study performed many years after the project completion dates. However, as additional floods occur, further losses will be avoided, and consequently the ROI will increase.

Section Six:
Considerations and Recommended Practices

This study yielded findings of potential value to future LASs. This section is a summary of the special considerations and unique practices that were used in the study in regard to data collection and availability and analysis methodology.

6.1 Data Collection and Availability

The buildings included in the Georgia study were dispersed throughout five counties and were affected by 32 flooding sources. The accuracy of the results was greatly increased because FFEs were available for all of the buildings in the study except one. Exact FFEs are always preferable to estimating FFEs from existing topographic data and applying standard HAZUS-MH offsets. Other building data for the Georgia study were provided by GEMA and represented information from GEMA project files.

The building at 3693 Finger Creek Drive in Lilburn (Gwinnett County) had a flood depth of approximately 28 feet for the September 2009 event. According to the building database provided by GEMA, the building has a walkout basement, and the FFE for this building was estimated using a 2-foot contour map. According to discussions with GEMA, the FFE for this building is 837 feet NGVD29 instead of the 838 feet NGVD29 that was listed in the building database provided by GEMA. The maximum damage allowed by the FEMA DDFs was applied to this building for purposes of loss estimation.

For the Trion City Schools Project, a comparison of the size of the flood events that were studied with those of historical floods affecting the schools was performed. The Physical Parameter Analysis determined that many of the flood events studied would not have resulted in flooding at the school buildings in the MP_A scenario, as shown by negative flood depths. Although a comparison of these events to previous similarly sized historical events shows that the school buildings would have likely flooded, historical damage for these events was not available. In addition, estimates of physical damage using the DDFs from the FEMA BCA Tool did not result in any damage for negative flood depths. Consequently, only physical damage for the September 2009 MP_A scenario was assessed.

6.2 Analysis Methodology

6.2.1 Nontraditional Benefits

Three types of nontraditional benefits were considered in the Georgia study: avoidance of mental stress and anxiety, recreational opportunities, and reduction in insurance transaction costs. Narrative responses from local cities, counties, and emergency management agencies provided a general idea of mental stress and anxiety effects. However, no usable data were available to quantify the avoidance of mental stress and anxiety.

Recreational opportunities created as a result of building demolition were assessed, but the net recreational benefits associated with Wren Circle Park were not included in the study because of insufficient data. In particular, the recreational benefits provided by the park since its opening date and the capital and O&M costs associated with the park were unknown. In addition, physical damage to the Trion ball fields was not included for the same reason.

Reduced insurance transaction costs involve the reduction in the number of claims that are made to private insurance companies and to the NFIP for properties with federally backed flood insurance. These costs are applicable to insured buildings that would have been affected in the MP_A scenario for the flood events studied. The reduction in transaction costs required to process these claims includes the material and labor costs associated with preparing an insurance claim. The NFIP adjuster's fee schedule for gross losses was used to correlate the amount of the building and building contents damage with the adjuster's fee. Although all of the communities included in the study currently participate in the NFIP, it is unlikely that every building in study had flood insurance at the time of the flood events studied. In order to account for this possibility, it was assumed that 50% of the buildings included in the study carried flood insurance.

The calculation for reduced insurance transaction costs could be refined by performing a detailed analysis of each property using BureauNet, a web-based database that contains information on all NFIP policies and claims since 1978. The analysis could determine whether property owners carried flood insurance at the time of a given storm event. For properties with confirmed flood insurance at the time of a given storm event, reduced insurance transaction costs would be considered an avoided loss in the MP_A scenario. An analysis using BureauNet could also determine whether the insurance policy included building coverage, building contents coverage, or both.

6.2.2 Trion City Schools Project

According to the Physical Parameter Analysis, the Trion elementary school and high school buildings would have flooded in the MP_A scenario during the September 2009 event. Other events studied would have produced negative flood depths, although these events were similar in size to historical events that did cause flood damage. Information regarding physical damage and loss of function was obtained through discussions with current school staff, the City of Trion, and the Trion Recreation Department. Physical damage included building and building contents damage to the schools in the MP_A scenario for the September 2009 event. However, information regarding building and building contents damage during historical events was not available according to discussions with Trion City School officials.

6.2.3 Buildings with Walkout Basements

The loss calculations for buildings with walkout basements could be refined by adjusting the FEMA DDFs for building, contents, and displacement in order to account for the portions of the basement that are unfinished or partially finished.

- For a residential building with a partially finished basement, it is recommended that damage be determined separately for the finished and unfinished portions. For example, a one-story, 1,000-square-foot house with a full basement with 600 square feet of finished area and 400 square feet of unfinished area, can be split into two structures. The finished portion can be represented by a "Residential – Two story without basement" DDF with the FFE corresponding to the level of the walkout basement (top of the finished basement floor). The building, building contents, and displacement functions should be adjusted so that there is zero damage below the elevation that flood waters can enter the house. The unfinished portion can be represented by a "Residential – One story with basement" DDF with the FFE corresponding to the level of the above-grade floor elevation (top of the first habitable floor). The DDFs do not need to be adjusted. Finally, the total damage can be determined by adding the damage associated with the finished and unfinished portions.
- For a residential building with a totally unfinished basement, the FFE should correspond to the level of the above-grade floor elevation (top of the first habitable floor). If the house is one story with an unfinished basement, the "Residential – One story with basement" DDF should be selected. If the house is two stories with an unfinished basement, the "Residential –

Two story with basement" DDF should be selected. The DDFs do not need to be adjusted in this case.

6.2.4 Disruption Costs

Estimation of disruption costs in the Georgia study was based on the assumption that there are two adults per household. The length of disruption was calculated using the estimate that each adult occupant is disrupted 40 hours plus 8 hours for every 1% in building damage. For future LASs, it may be beneficial to obtain area-specific county data from the U.S. Census Bureau in order to refine the calculation for disruption costs. Actual disruption time and costs are always preferred over estimated values. However, these data are often difficult to obtain from documented sources. Local officials may provide a general disruption time (hours or days) for people who could not work because of the need to clean up their houses.

Appendix A

Depth-Damage Functions

List of Tables

Table A.1

FEMA BCA Tool Version 4.5 Depth-Damage Functions: Residential

	DamageCurve	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
BUILDINGS	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
	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
	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
	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
	7	FIA (BCA Default)	Mobile Home	0.0	0.0	0.0	8.0	44.0	63.0	73.0	78.0	80.0	81.0	82.0	82.0	82.0	82.0	82.0	82.0	82.0	82.0	82.0	82.0
CONTENTS[1]	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
	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
	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
	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
	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
	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
	7	FIA (BCA Default)	Mobile Home	0.0	0.0	0.0	12.0	66.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0
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
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

BCA = Benefit-Cost Analysis
FEMA = Federal Emergency Management Agency
FIA = Federal Insurance Administration
ft = feet
HAZUS = Hazards U.S.
USACE = U.S. Army Corps of Engineers

1. The FEMA standard value for contents for 1-story, 2-story, and split-level residential buildings is 100% of the building replacement value (BRV).

Table A.2

FEMA BCA Tool Version 4.5 Depth-Damage Functions: Nonresidential																						
	DamageCurve	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
BUILDINGS[1]	1	BCA Default	Schools	0.0	0.0	0.0	0.0	13.0	21.5	26.7	32.7	36.2	39.7	41.6	44.5	46.4	48.5	48.5	48.5	48.5	48.5	48.5	48.5
CONTENTS[1]	1	BCA Default	Schools[2]	0.0	0.0	0.0	0.0	22.0	30.0	39.0	45.0	48.0	52.0	56.0	59.0	61.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0
DISPLACEMENT	1	HAZUS/New BCA	Nonresidential	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
LOSS OF FUNCTION	1	HAZUS/New BCA	Nonresidential	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

BCA = Benefit-Cost Analysis
BRV = building replacement value
FEMA = Federal Emergency Management Agency
ft = feet
HAZUS = Hazards U.S.

1. Only the first floor area is considered for estimating building and content damage.
2. For schools, the FEMA standard contents-to-BRV ratio is 6%. This ratio is multiplied by the BRV to obtain the value for contents.

Appendix B

Chattooga County:
Trion City Schools Project

Table of Contents

List of Figures and Tables

B1 Introduction

The Trion City School District is a public school system in the City of Trion, Chattooga County, Georgia. Trion is in northwestern Georgia, about 30 miles west of Interstate 75, 40 miles south of Chattanooga, Tennessee, and 90 miles northwest of Atlanta. Before the Trion City Schools Project was implemented in 1997, Trion City Schools consisted of a one-story elementary school building and an adjacent one-story high school building. The two schools were the only schools in the school district. They were located in the central part of Trion, across the Chattooga River from Mount Vernon Mills, Inc., a textile plant. The schools were adjacent to a residential area, town hall, and recreational facilities. The elementary school was built in 1948 and as of 1993, had 750 students. The high school was built in 1938 and as of 1993, had 435 students. The total number of faculty and staff in the two schools in 1993 was approximately 110.

Trion City Schools had a long history of flood damage prior to the implementation of the project. The schools were damaged by major floods in 1948, 1949, 1951, 1961, 1966, 1979, and 1982. The high school building was approximately 70 to 80 feet from the Chattooga River. The crawl space of the high school building was usually inundated by minor floods one to three times a year. During historical floods, most of the roads in Trion were closed because of flooding.

In February 1990, Trion City Schools was affected by the most devastating flood in its history. The flood resulted in 3 to 4 feet of water in the school buildings and substantial structural and latent damage to both the elementary school and high school. The 1990 flood prompted the need for the Trion City Schools Project. The project involved the construction of a new K-12 school outside the floodplain and demolition and razing of the two old schools. The new school was designed to protect the facility to above the 500-year flood level. The project was funded by the Federal Emergency Management Agency (FEMA) with Hazard Mitigation Grant Program funds from two disasters, FEMA-857-DR-GA and FEMA-1020-DR-GA. The total project cost was $4,465,893 (in 1997 dollars), and the project closeout date was August 5, 1997. **Table B.1** lists the basic components of the previous schools and the new school. **Figure B.1** shows the locations of the previous schools and the new school.

Following the demolition of the two schools, the City of Trion built two new ball fields on the open space. According to the City Clerk, the two fields were completed in 2002. At the same time, a press box and restroom facility were constructed at the three existing ball fields adjacent to the elementary school. The three fields existed

Table B.1

Trion City Schools Project Components

Facility	Address	First Floor Elevation (NGVD29)	Building Square Footage	Number of Students	Number of Faculty and Staff
Previous Elementary School	Park Avenue Trion, GA 30753	657 feet[1]	46,820	750[2]	110[2]
Previous High School	Dalton Street Trion, GA 30753	657 feet[1]	31,938	435[2]	
New K-12 School	919 Allgood Street Trion, GA 30753	770 feet[4]	139,000	1,400[3]	160[3]

NGVD29 = National Geodetic Vertical Datum of 1929

1. First floor elevation obtained from the Building Inventory provided by the Georgia Emergency Management Agency.
2. Per Federal Emergency Management Agency project files. Number of students, faculty, and staff as of 1993.
3. Per discussions with 2010 Trion City School staff. Number of students, faculty, and staff as of 2010.
4. First floor elevation obtained from Federal Emergency Management Agency project files for the Trion City Schools Project.

prior to the acquisition and demolition of the elementary school and high school.

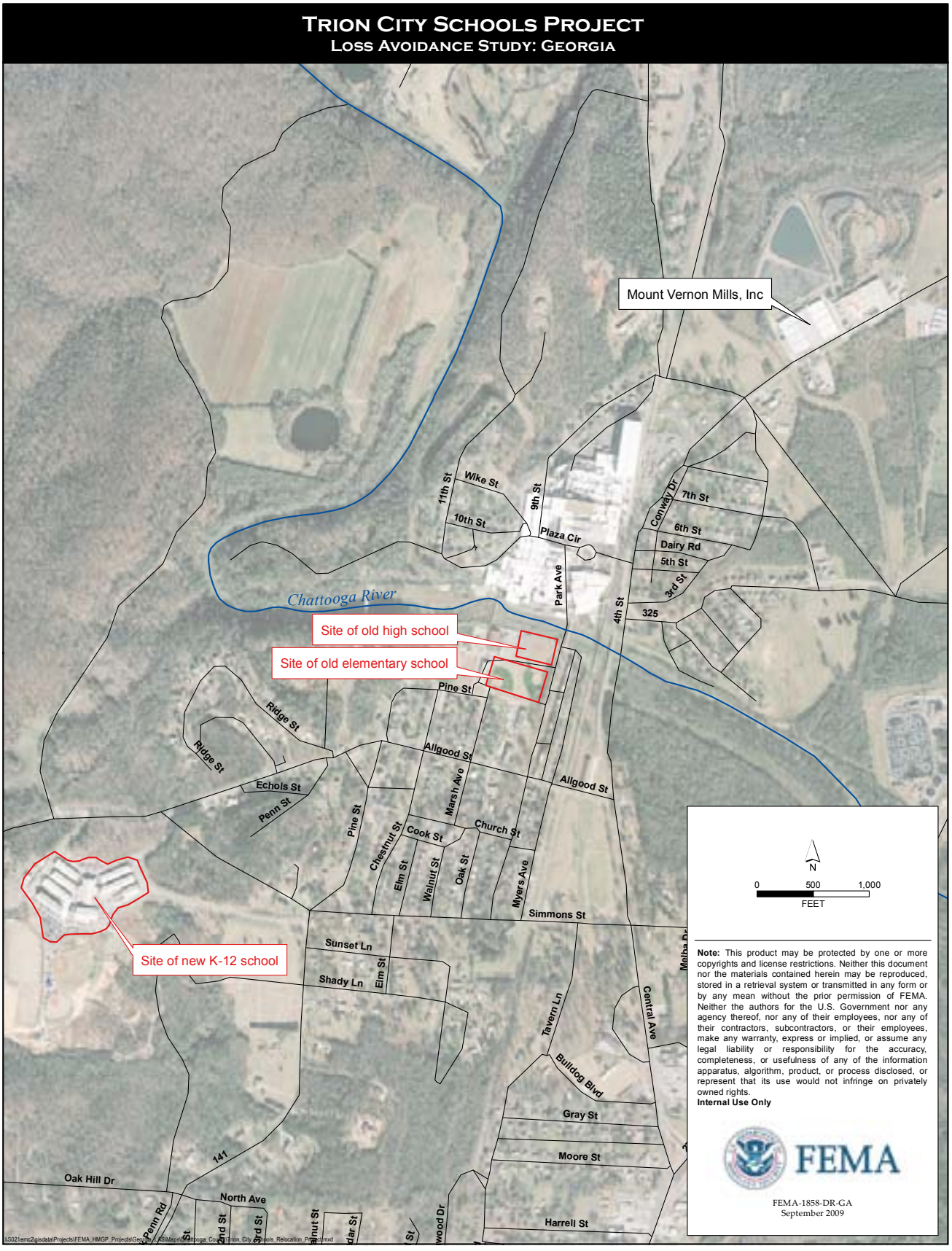
B2 Physical Parameter Analysis

Major storm events that flooded the school occurred in 1948, 1949, 1951, 1961, 1966, 1979, 1982, and 1990. U.S Geological Survey (USGS) peak stream flow data for these events are shown in **Table B.2**. According to the peak stream gage heights and stream flows, the 1990 event was the largest historical flood that affected the school, followed by the 1951 and 1949 events.

During the Physical Parameter Analysis, it was determined that five storm events since the project closeout date (August 5, 1997) could have caused damage to the Trion City Schools in the Mitigation Project Absent (MP_A) scenario. **Table B.3** lists the dates of the events, gage heights, stream flows, and expected depths of flooding at the Trion City Schools in the MP_A scenario.

Comparison of the gage heights for the five events studied with gage heights of historical flood events show that the April 2000 and November 2004 events were similar in size to the 1961 flood event, the February 2003 and September 2004 events were similar in size to the 1948 event, and the September 2009 event was similar to the March 1951 flood event. Therefore, it is likely that the damage incurred in the MP_A scenario of the events studied are similar to the damage incurred during the historical events of similar size.

Figure B.1


TRION CITY SCHOOLS PROJECT
LOSS AVOIDANCE STUDY: GEORGIA
Mount Vernon Mills, Inc
Chattooga River
Site of old high school
Site of old elementary school
Site of new K-12 school
Wike St
11th St
10th St
9th St
Plaza Cir
Park Ave
Conway Dr
7th St
6th St
Dairy Rd
5th St
3rd St
4th St
325
Pine St
Ridge St
Allgood St
Echols St
Penn St
Marsh Ave
Church St
Cook St
Chestnut St
Elm St
Walnut St
Oak St
Myers Ave
Simmons St
Sunset Ln
Shady Ln
Tavern Ln
Central Ave
Bulldog Blvd
Gray St
Moore St
Harrell St
Oak Hill Dr
North Ave
141
N
0 500 1,000
FEET
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FEMA
FEMA-1858-DR-GA
September 2009

Table B.2

Gage Data for Historical Floods that Affected Trion City Schools, 1948 to 1990

Water Year	USGS Peak Stream Flow Data For Chattooga River at Summerville, Georgia		
	Date	Gage Height (feet)	Stream Flow (cfs)
1948	2/13/1948	16.80	9,200
1949	11/28/1948	20.60	22,700
1951	3/29/1951	21.00	24,500
1961	2/23/1961	16.40	8,220
1966	3/4/1966	19.50	20,400
1979	3/4/1979	19.43	20,000
1982	1/4/1982	18.82	17,000
1990	2/16/1990	22.63	30,100

cfs = cubic feet per second
USGS = U.S. Geological Survey

Source: USGS (2010)

Table B.3

Gage Data and Expected Depth of Flooding at Trion City Schools for Storm Events Studied in the MP_A Scenario

USGS Peak Stream Flow Data for Chattooga River at Summerville, Georgia				Expected Depth of Flooding at Trion City Schools (feet)
Water Year	Storm Event	Gage Height (feet)	Stream Flow (cfs)	
2000	4/4/2000	16.13	8,250	–0.97
2003	2/23/2003	16.93	9,940	–0.17
2004	9/17/2004	16.67	9,370	–0.43
2005	11/25/2004	16.09	8,170	–1.01
2009	9/21/2009	21.19	23,500	5.54

cfs = cubic feet per second
MP_A = Mitigation Project Absent
USGS = U.S. Geological Survey

Source: USGS (2010)

The new school was built outside the 500-year floodplain on a hill at an elevation that is considerably higher than the rest of the town. According to the FEMA project files for the Trion City Schools Project, the elevation of the new school is 100 feet above the 500-year flood elevation (approximately 770 feet National Geodetic Vertical Datum of 1929 [NGVD29]). No flood event has occurred since the project completion date that was large enough to cause flood damage to the school. Discussions with school administrative staff confirmed

that the school did not experience any flood damage during the September 2009 event, the largest of the events studied.

B3 Loss Estimation Analysis

The losses avoided calculated for the Trion City Schools Project include physical damage, reduced insurance transaction costs for Project Worksheets (PWs), and debris removal service costs. Loss of function for Trion City Schools did not apply to the loss avoidance study because no flood events in the past have resulted in students missing any school days. A discussion of loss of function for the schools is included in this section, but no losses avoided were calculated.

B3.1 Physical Damage

Physical damage included building and building contents damage to the schools at their previous locations. Although the new ball fields constructed in 2002 experienced physical damage during the September 2009 event, these losses were not assessed because of insufficient data.

B3.1.1 Building and Building Contents Damage

According to **Table B.3**, the elementary school and high school buildings would have flooded during the September 2009 event in the MP_A scenario. The April 2000, February 2003, September 2004, and November 2004 events would have produced negative flood depths at the schools (indicating no flooding). Although these four events are similar in size to the historical floods in 1948, 1951, and 1961 that caused flood damage, costs of physical damage for these historical floods were not available, according to discussions with Trion City Schools. In addition, the FEMA project files indicated that records of damage in floods prior to 1990 were lost in the 1990 flood.

Building damage to the elementary school and high school in the September 2009 flood event was estimated using a building replacement value (BRV) of $70 per square foot (in 2009 dollars). This value was obtained from the building database provided by the Georgia Emergency Management Agency (GEMA). The depth-damage function (DDF) in the FEMA Benefit-Cost Analysis (BCA) Tool Version 4.5 for nonresidential buildings for a school with an engineered structure type was used in conjunction with the flood depths determined during the physical parameter analysis to estimate building damage.

Building contents damage to the two schools was estimated similarly by using the FEMA BCA Tool nonresidential building contents DDF for a school with engineered structure type. The default building-to-contents ratio of 6% was applied to the total BRV of each building to determine the value of contents. The appropriate percentage of building contents damage was determined according to the flood depths determined during the Flood Inundation Analysis.

Using the building and building contents DDFs, the total cost of building and building contents damage was determined to be $2,333,821 (in 2010 dollars). This value was compared to the damage for the 1990 flood event, which was available from Public Assistance (PA) Program documentation in the FEMA project files. According to the PA Program documentation, a total of $1,176,680 (in 1990 dollars) was spent to repair damage to buildings and contents as a result of the 1990 flood, including $417,328 for minor repairs, $445,821 for equipment, $32,559 for supplies and materials, $277,333 for textbooks, and $3,640 for other items. The PA Program documentation stated that no money was spent on removal/cleanup costs or temporary facilities. The total cost of damage, inflated to 2010 dollars, is $2,082,616. This value is similar, although slightly less, than the total cost estimated from the DDFs even though the 1990 flood was a larger event than the September 2009 event. As a conservative measure, the historical damage from the 1990 flood event was used in place of the estimated values obtained from the DDFs. Building damage was assumed to include the minor repairs and equipment costs. Building contents damage was assumed to include supplies and materials, textbooks, and other items.

B3.1.2 Physical Damage to Ball Fields

Costs for physical damage to the ball fields were not included in the Loss Estimation Analysis because the capital costs to construct the ball fields and the operations and maintenance (O&M) costs to maintain the ball fields are unknown. Therefore, it is not appropriate to include physical damage to the ball fields following their construction without including the capital and O&M costs as well. A qualitative discussion of physical damages to the ball fields is provided below. However, no quantitative values were included in the Loss Estimation Analysis.

Discussions with the Trion Recreation Department, which operates the ball fields, confirmed that the only flood event in which the two ball fields were damaged was the September 2009 event. According to the mayor of Trion, the soil on the ball fields was tested after the flood to make sure the fields were safe. Chemicals were placed on the fields to kill any harmful bacteria. The Trion Recreation

Department explained that the fencing around the existing three ball fields had to be replaced as a result of flood damage. The City Clerk explained that no baseball games or practices were missed because the September 2009 flood event occurred during the baseball off-season. The soil testing and repairs were completed before February 2010 when the baseball season and practice began. Therefore, no disruption to the baseball schedule occurred.

According to the City Clerk, all five ball fields were flooded during the September 2009 event, and the cost of the soil testing and restoration for all five ball fields to pre-flood condition was $59,720 (in 2010 dollars). The City Clerk and Recreation Department Director had a detailed breakdown of the costs for the three existing ball fields but not for the two new ball fields.

B3.2 Reduced Transaction Costs for Project Worksheets

Since rebuilding on a site outside the 500-year floodplain, Trion City Schools has not experienced any flood damage. The success of the project can be verified by a reduction in the number of claims that are made to the PA Program, resulting in reduced insurance transaction costs for preparing PWs.

The methodology described in **Section 5.2.4.3** was used to estimate the reduced insurance transaction costs for preparing PWs for the September 2009 MP_A scenario. Although this methodology applies primarily to private insurance companies and to the National Flood Insurance Program for residential properties with federally backed flood insurance, it is assumed that similar, if not higher, costs would be incurred for public facilities. The total transaction costs for the September 2009 event are $43,735 (2010 dollars).

B3.3 Debris Removal Services

Costs for debris removal services include the costs to dispose of flood debris and haul the debris to a disposal area. According to discussions with the school bookkeeper, during past floods, community citizens and prisoners from the local jail volunteered to clean up flood debris at the schools. The community citizens and prisoners likely consolidated the debris in preparation for disposal. The costs for debris removal services were estimated using the methodology discussed in **Section 5.2.3.1**. For the September 2009 event, the total debris removal cost is $11,832 (2010 dollars).

B3.4 Loss of Function

Loss-of-function costs for Trion City Schools were not calculated because discussions with the City of Trion and Trion City Schools confirmed that students have not missed a day of school as a result of any past flood event. Students have been able to fulfill the 180 school days required by the Georgia Board of Education. Discussions with the school's current financial director indicated that even during the largest flood experienced by the school in 1990, students did not miss a single day of school. Although students either had to shorten spring break by 2 days or attend school 2 days later into the summer, they still received 180 school days. Because no post-mitigation flood events are larger than the 1990 flood, it is assumed that students would have met the requirement for 180 school days. Therefore, no damage from missed school days was estimated.

During emergency school closures, the school did not relocate to a temporary location to continue operation. Students did not have home schooling or individual make-up work. They simply returned to school after the flood debris had been cleaned up and the school re-opened. In addition, discussions with the school financial director and several teachers confirmed that teachers and staff did not experience any change to their salaries as a result of any past flood events. Because students did not miss any school days, teachers were able to work for the full time required during the school year.

B3.5 Summary of Damage

Tables B.4 and **B.5** show the total losses avoided and the Return on Investment (ROI) for the Trion City Schools Project. The results of the Physical Parameter Analysis show that for the MP_A scenario, the previous elementary school and high school would have been flooded only during the September 2009 event because the other flood events would have generated negative depths. The total losses avoided for building damage and building contents damage are $1,527,694 (2010 dollars) and $554,923 (2010 dollars), respectively. Reduced insurance transaction costs and debris removal services apply to the September 2009 MP_A scenario only. The reduced insurance transaction costs are $43,735 (2010 dollars), and the cost of debris removal services is $11,832 (2010 dollars) for the September 2009 event.

Table B.4

SUMMARY OF LOSSES AVOIDED AND ROI CALCULATIONS IN CHATTOOGA COUNTY FOR ALL EVENTS

Building Number	Address	Mitigation Completion Date	2010 Value of Total Mitigation Cost	Sep-09 Losses Avoided	TOTAL LOSSES AVOIDED	ROI (%)
202	Trion City Schools	Aug-97	$ 6,428,806	$ 2,138,183	$ 2,138,183	33%

	TOTAL
Total Mitigation Costs:	$ 6,428,806
Total Losses Avoided:	$ 2,138,183
ROI:	**33%**

ROI = Return on Investment

Table B.5

Summary of Losses Avoided and ROI Calculations for Chattooga County, September 2009 Event

No.	Disaster/ Proj No	Project Type	Address	Flooding Source	Mitigation Completion Date	Building Type	BRV (2010$)	FFE (ft, NGVD29)	WSE for Event (ft, NGVD29)	Final Flood Depth (ft)	Building Damage ($)	Contents Damage ($)	Displacement Cost ($)	Disruption Cost ($)	Debris Removal Services ($)	Reduced Insurance Transaction Cost ($)	Total Losses Avoided ($)	Total Project Investment (2010$)	ROI
202	1857-005; 1020-001	Demolition / Rebuilding	Trion City Schools	Chattooga River	8/5/1997	School	$ 5,678,451.80	657.00	662.54	5.54	$ 1,527,693.68	$ 554,922.67			$ 11,831.91	$ 43,734.94	$ 2,138,183.21	$ 6,428,805.84	33.3%
										TOTAL	**$ 1,527,693.68**	**$ 554,922.67**	**$ -**	**$ -**	**$ 11,831.91**	**$ 43,734.94**	**$ 2,138,183.21**	**$ 6,428,805.84**	**33.26%**

BRV = building replacement value
FFE = first floor elevation
ft = feet
NGVD = National Geodetic Vertical Datum of 1929
ROI = Return on Investment
WSE = water surface elevation

Indicates nonresidential property

Appendix C

Cobb County: Summary of Losses Avoided and Return on Investment Calculations

List of Figures and Tables

Note: Event-specific maps depict only buildings that were included in the analysis of that event

Figure C.1

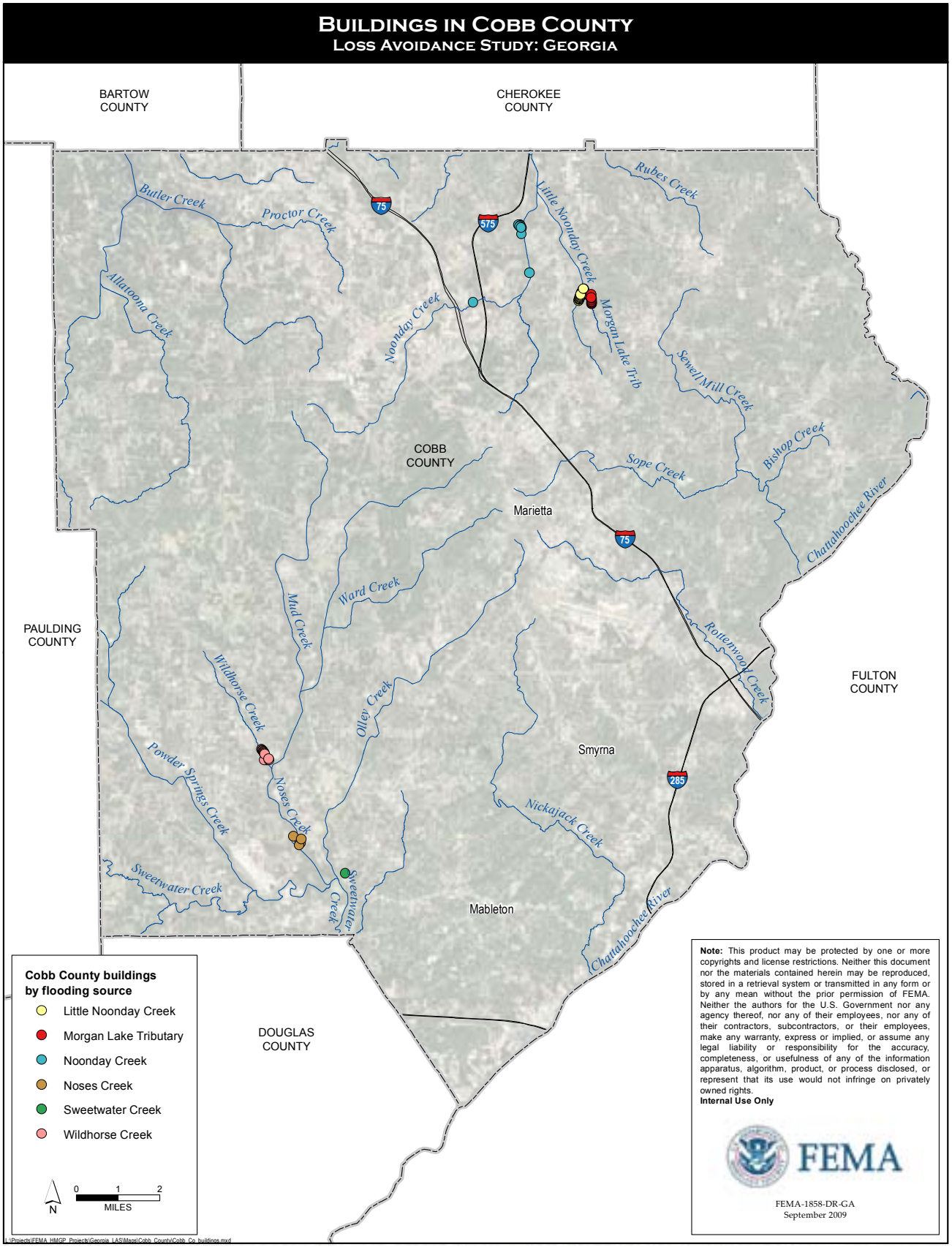
BUILDINGS IN COBB COUNTY
LOSS AVOIDANCE STUDY: GEORGIA
BARTOW COUNTY
CHEROKEE COUNTY
PAULDING COUNTY
COBB COUNTY
DOUGLAS COUNTY
FULTON COUNTY
Marietta
Smyrna
Mableton
Butler Creek
Proctor Creek
Allatoona Creek
Noonday Creek
Little Noonday Creek
Morgan Lake Trib
Rubes Creek
Sewell Mill Creek
Bishop Creek
Sope Creek
Chattahoochee River
Ward Creek
Mud Creek
Rottenwood Creek
Olley Creek
Wildhorse Creek
Powder Springs Creek
Noses Creek
Sweetwater Creek
Sweetwater Creek
Nickajack Creek
75
575
285
Cobb County buildings by flooding source
Little Noonday Creek
Morgan Lake Tributary
Noonday Creek
Noses Creek
Sweetwater Creek
Wildhorse Creek
N
0 1 2
MILES
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Figure C.2

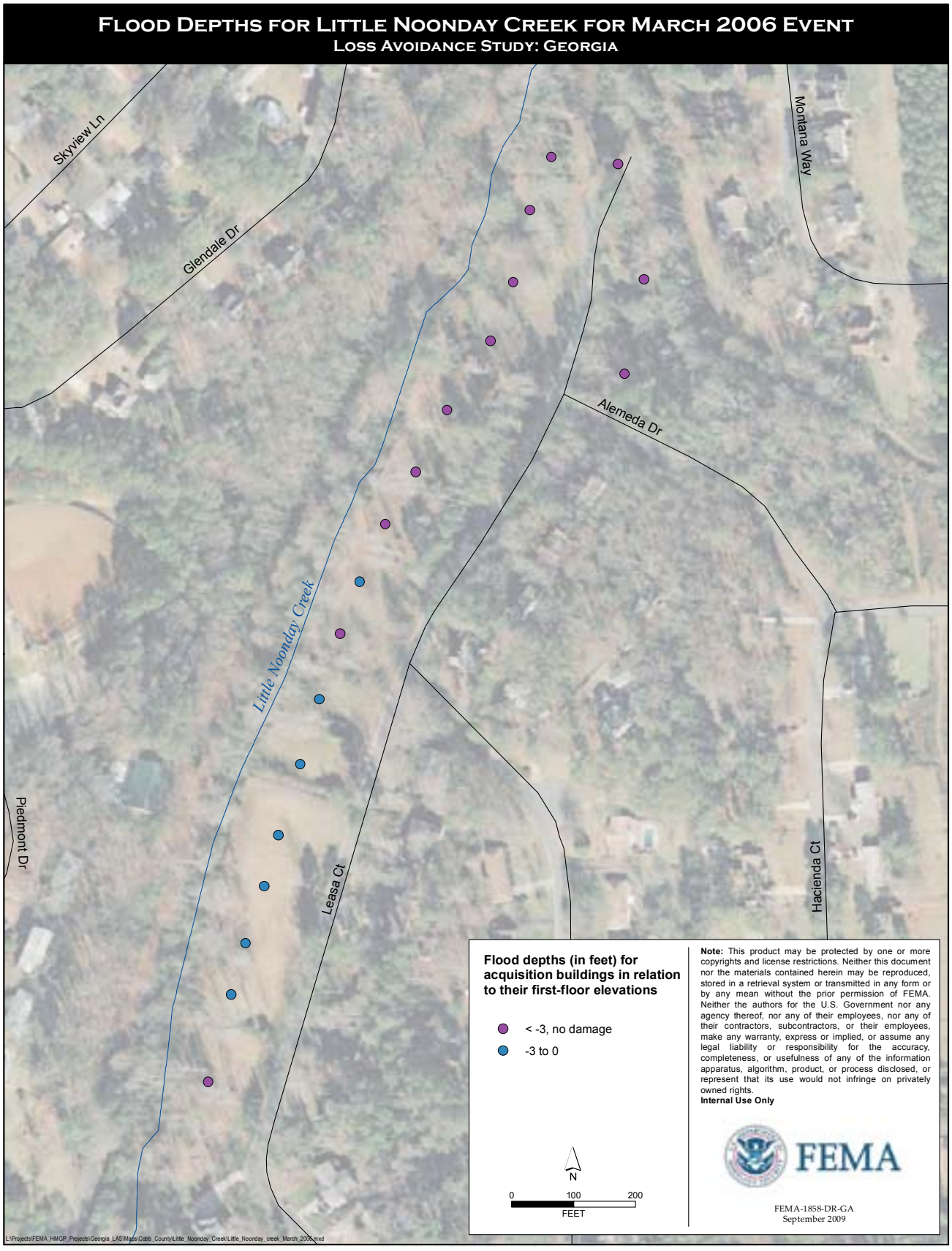
Flood Depths for Little Noonday Creek for March 2006 Event
Loss Avoidance Study: Georgia
Skyview Ln
Glendale Dr
Montana Way
Alemeda Dr
Little Noonday Creek
Piedmont Dr
Leasa Ct
Hacienda Ct
Flood depths (in feet) for acquisition buildings in relation to their first-floor elevations
< -3, no damage
-3 to 0
N
0
100
200
FEET
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Figure C.3

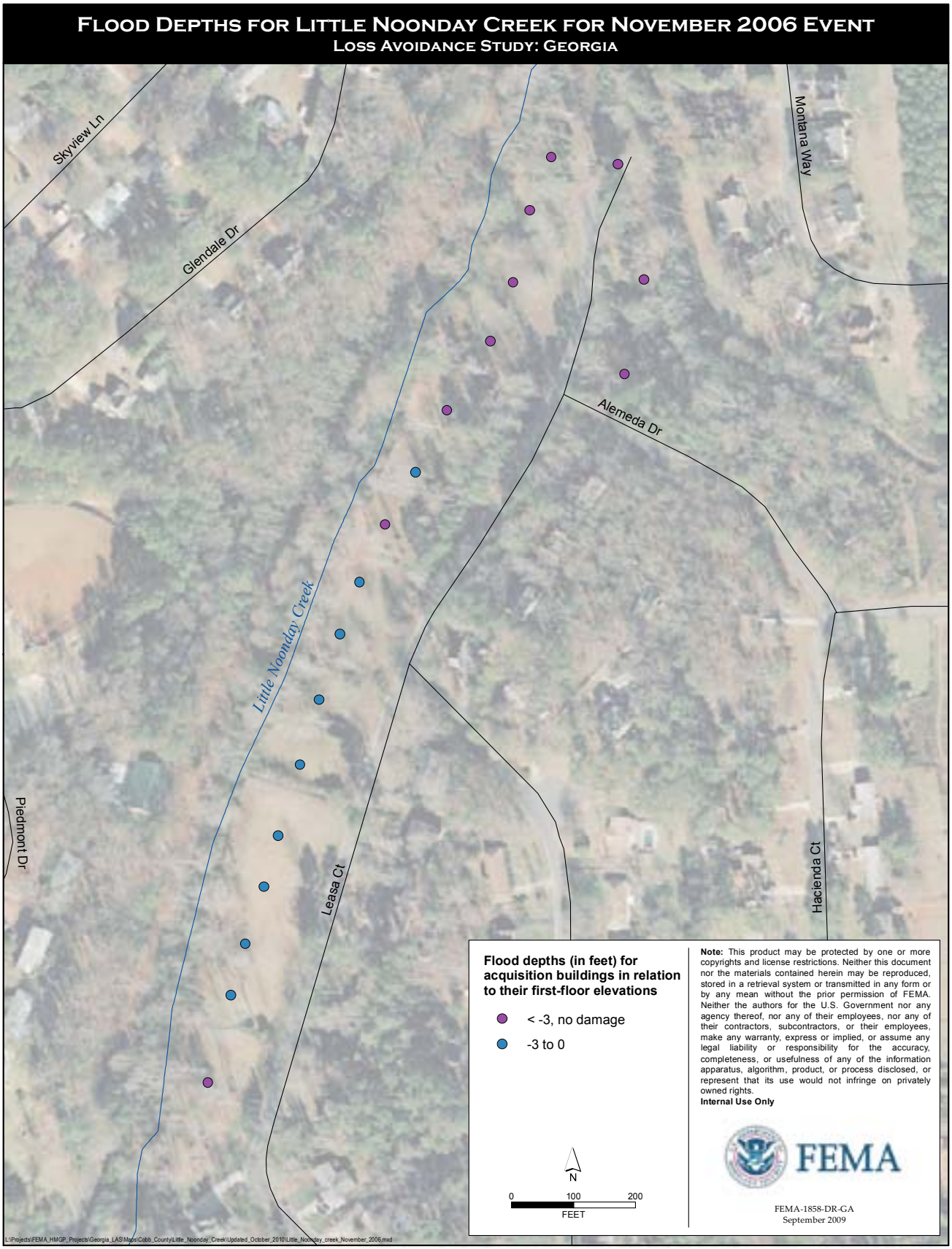
Flood Depths for Little Noonday Creek for November 2006 Event
Loss Avoidance Study: Georgia
Skyview Ln
Glendale Dr
Montana Way
Alemeda Dr
Little Noonday Creek
Piedmont Dr
Leasa Ct
Hacienda Ct
Flood depths (in feet) for acquisition buildings in relation to their first-floor elevations
< -3, no damage
-3 to 0
N
0
100
200
FEET
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Figure C.4

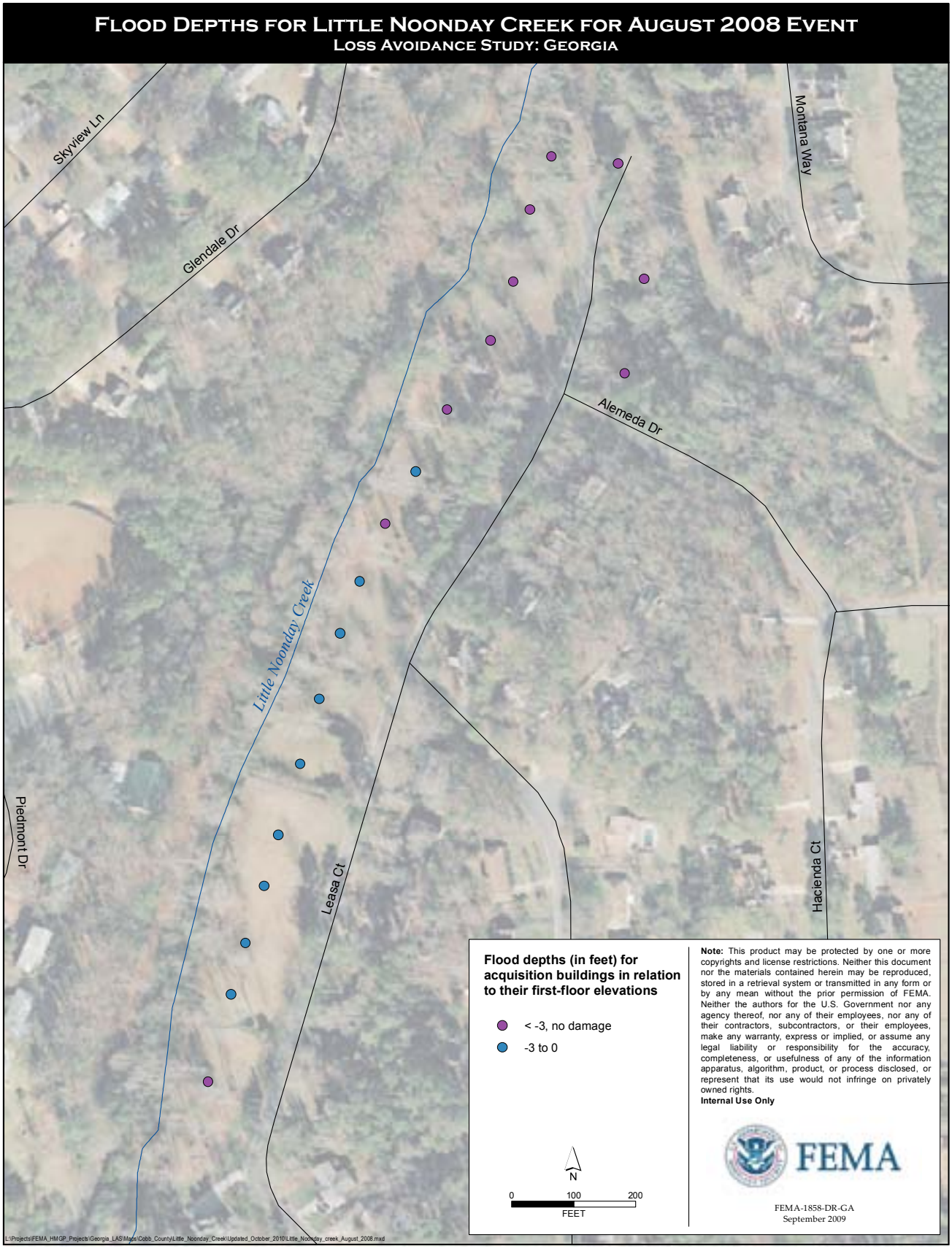
Flood Depths for Little Noonday Creek for August 2008 Event
Loss Avoidance Study: Georgia
Skyview Ln
Glendale Dr
Montana Way
Alemeda Dr
Little Noonday Creek
Piedmont Dr
Leasa Ct
Hacienda Ct
Flood depths (in feet) for acquisition buildings in relation to their first-floor elevations
< -3, no damage
-3 to 0
N
0
100
200
FEET
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Figure C.5

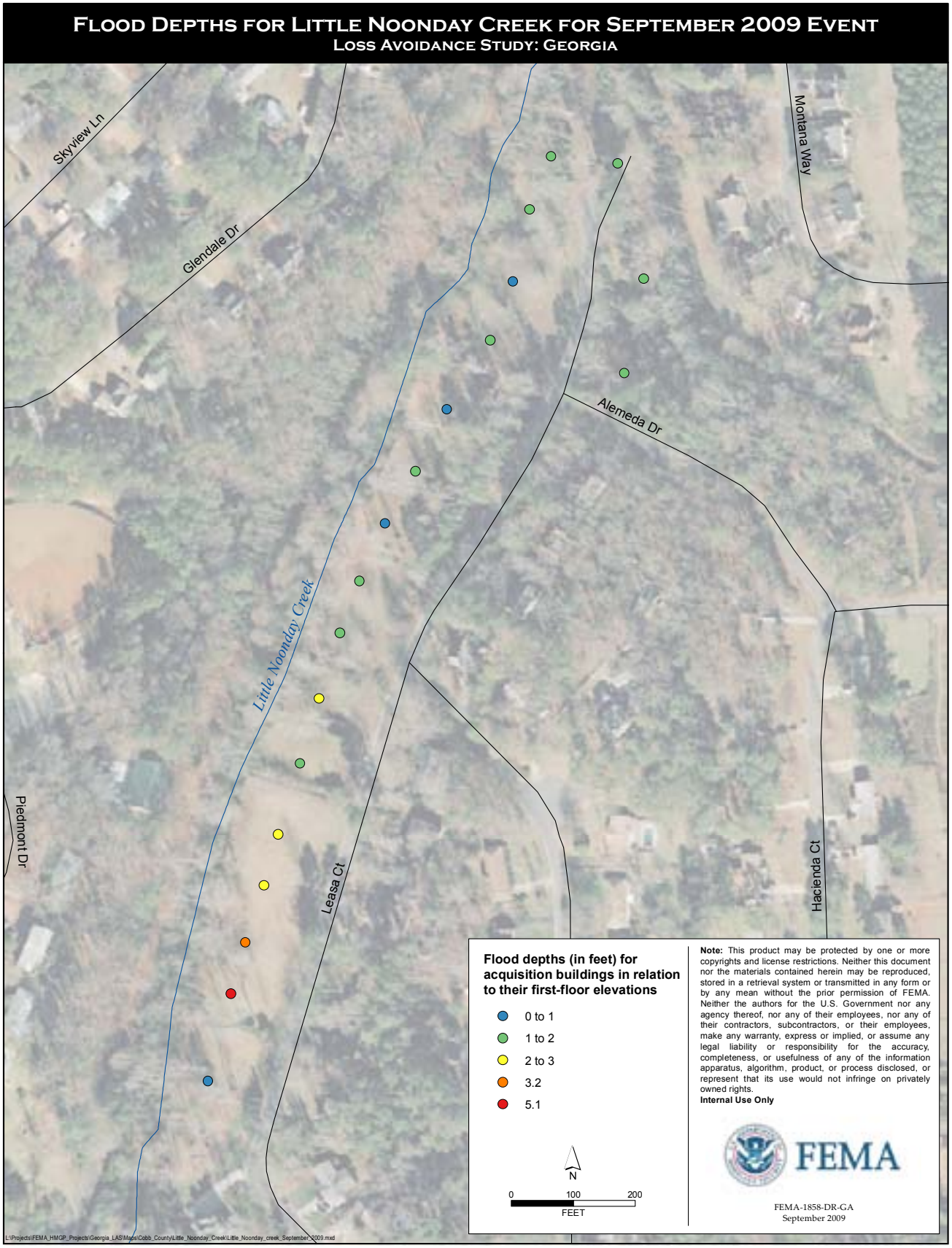
Flood Depths for Little Noonday Creek for September 2009 Event
Loss Avoidance Study: Georgia
Skyview Ln
Glendale Dr
Montana Way
Alemeda Dr
Little Noonday Creek
Piedmont Dr
Leasa Ct
Hacienda Ct
Flood depths (in feet) for acquisition buildings in relation to their first-floor elevations
0 to 1
1 to 2
2 to 3
3.2
5.1
N
0
100
200
FEET
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Figure C.6


Flood Depths for Morgan Lake Tributary for March 2006 Event
Loss Avoidance Study: Georgia
Townley Pl
Alemeda Dr
Crescent Dr
Hacienda Ct
Morgan Lake Tributary
Harold Dean Dr
Rio Montana Dr
Rio Ct
Marbrook Dr
Flood depths (in feet) for acquisition buildings in relation to their first-floor elevations
< -3, no damage
N
0 100 200
FEET
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Figure C.7


Flood Depths for Morgan Lake Tributary for November 2006 Event
Loss Avoidance Study: Georgia
Townley Pl
Alemeda Dr
Crescent Dr
Hacienda Ct
Morgan Lake Tributary
Harold Dean Dr
Rio Montana Dr
Rio Ct
Marbrook Dr
Flood depths (in feet) for acquisition buildings in relation to their first-floor elevations
< -3, no damage
N
0
100
200
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Figure C.8


Flood Depths for Morgan Lake Tributary for August 2008 Event
Loss Avoidance Study: Georgia
Townley Pl
Alemeda Dr
Crescent Dr
Hacienda Ct
Morgan Lake Tributary
Harold Dean Dr
Rio Montana Dr
Rio Ct
Marbrook Dr
Flood depths (in feet) for acquisition buildings in relation to their first-floor elevations
< -3, no damage
N
0 100 200
FEET
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Figure C.9


FLOOD DEPTHS FOR MORGAN LAKE TRIBUTARY FOR SEPTEMBER 2009 EVENT
LOSS AVOIDANCE STUDY: GEORGIA
Townley Pl
Alemeda Dr
Crescent Dr
Hacienda Ct
Morgan Lake Tributary
Harold Dean Dr
Rio Montana Dr
Rio Ct
Marbrook Dr
Flood depths (in feet) for acquisition buildings in relation to their first-floor elevations
< -3, no damage
-2 to 0
0 to 1
N
0
100
200
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Figure C.10

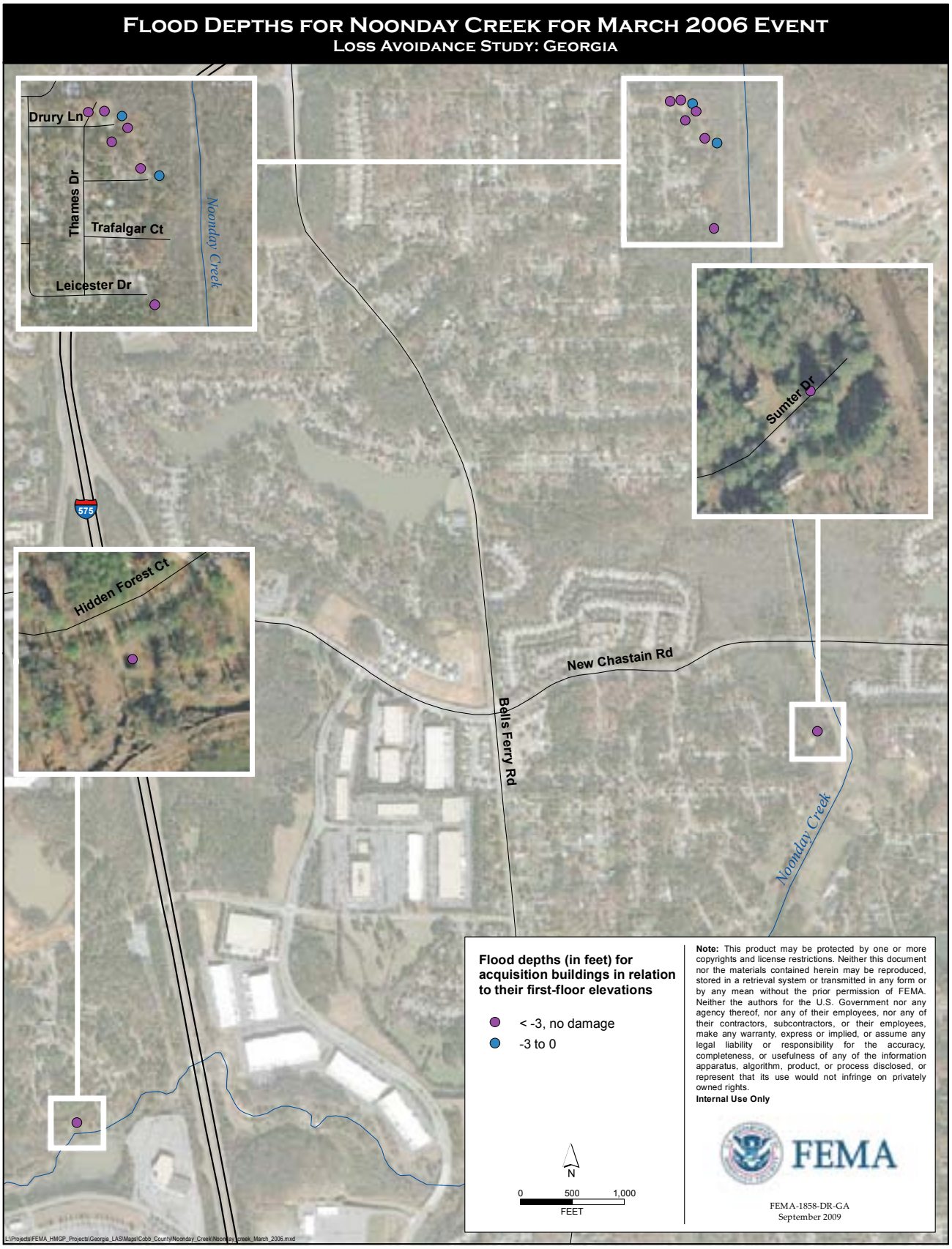
Flood Depths for Noonday Creek for March 2006 Event
Loss Avoidance Study: Georgia
Drury Ln
Thames Dr
Trafalgar Ct
Leicester Dr
Noonday Creek
Sumter Dr
575
Hidden Forest Ct
New Chastain Rd
Bells Ferry Rd
Noonday Creek
Flood depths (in feet) for acquisition buildings in relation to their first-floor elevations
< -3, no damage
-3 to 0
N
0 500 1,000
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Figure C.11

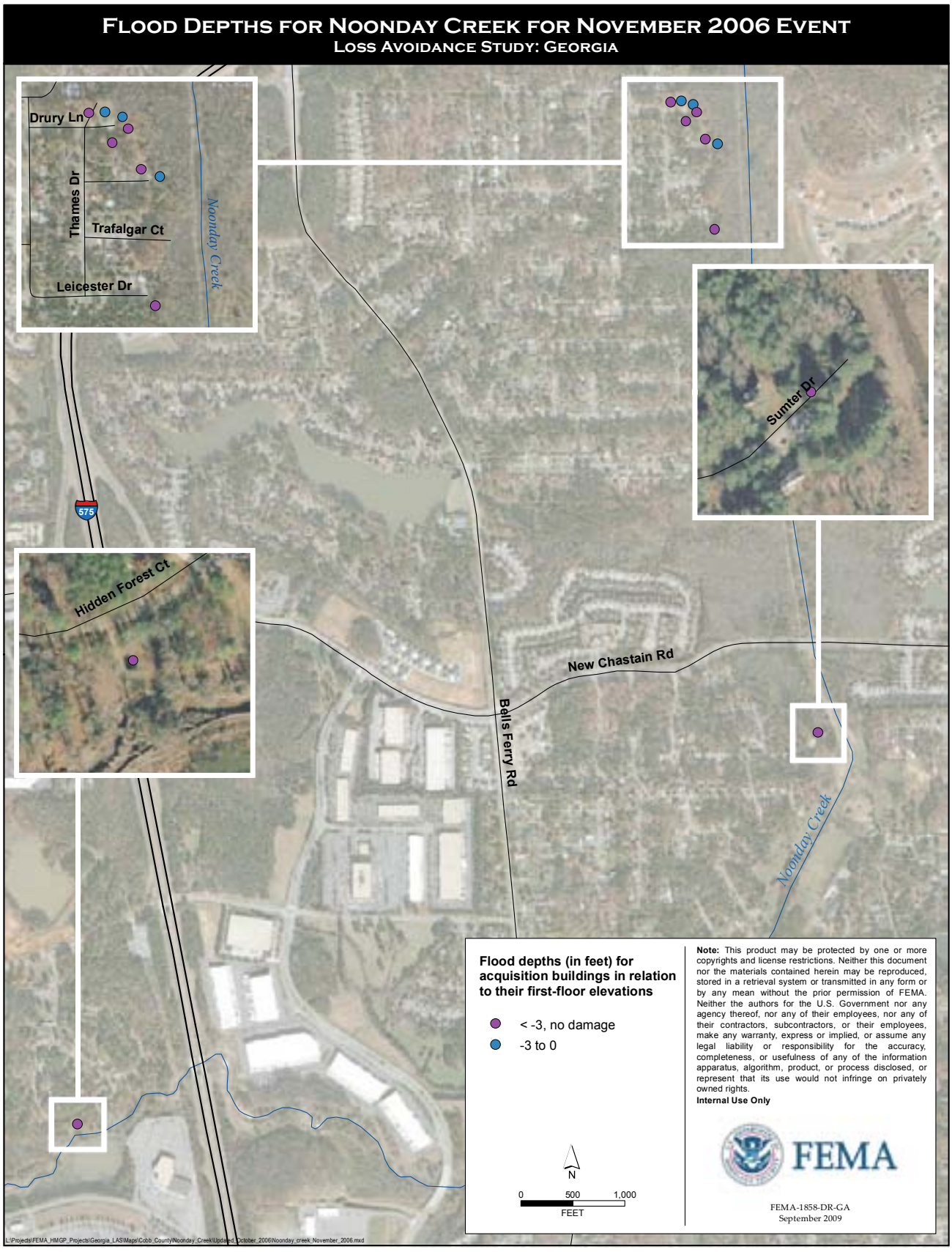
Flood Depths for Noonday Creek for November 2006 Event
Loss Avoidance Study: Georgia
Drury Ln
Thames Dr
Trafalgar Ct
Leicester Dr
Noonday Creek
Sumter Dr
575
Hidden Forest Ct
New Chastain Rd
Bells Ferry Rd
Noonday Creek
Flood depths (in feet) for acquisition buildings in relation to their first-floor elevations
< -3, no damage
-3 to 0
N
0 500 1,000
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Figure C.12

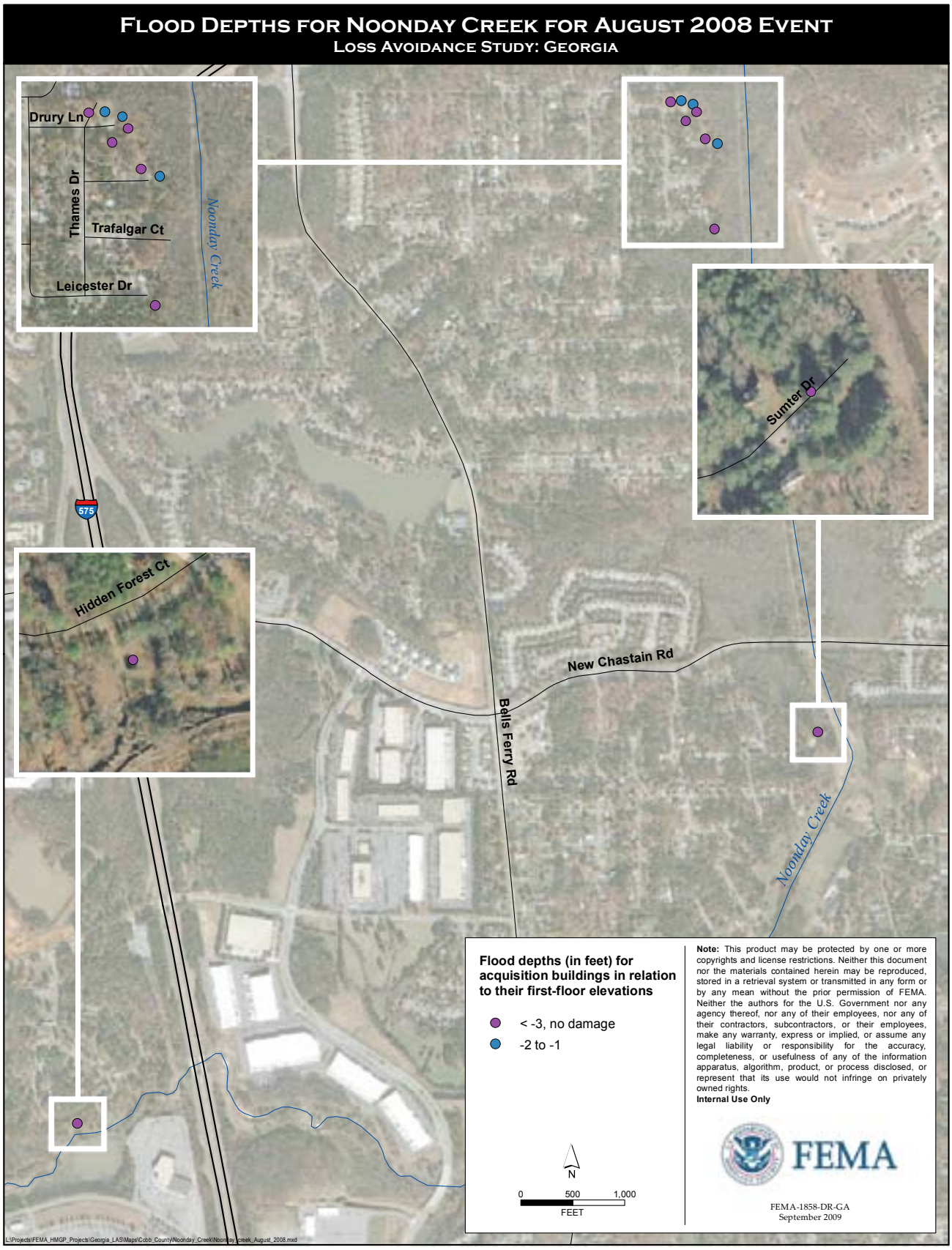
Flood Depths for Noonday Creek for August 2008 Event
Loss Avoidance Study: Georgia
Drury Ln
Thames Dr
Trafalgar Ct
Leicester Dr
Noonday Creek
Sumter Dr
575
Hidden Forest Ct
New Chastain Rd
Bells Ferry Rd
Noonday Creek
Flood depths (in feet) for acquisition buildings in relation to their first-floor elevations
< -3, no damage
-2 to -1
N
0 500 1,000
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Figure C.13

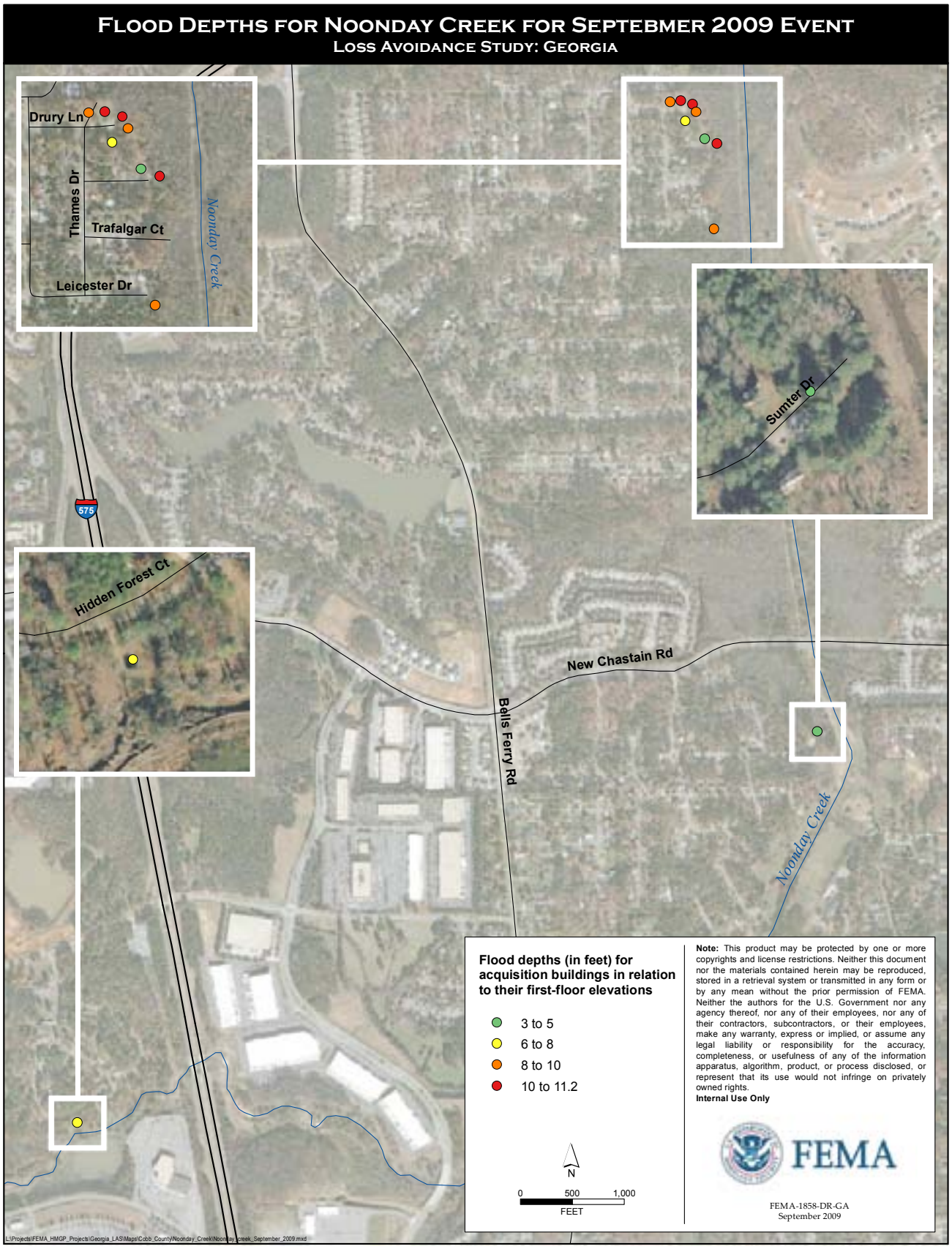
Flood Depths for Noonday Creek for Septebmer 2009 Event
Loss Avoidance Study: Georgia
Drury Ln
Thames Dr
Trafalgar Ct
Leicester Dr
Noonday Creek
Sumter Dr
575
Hidden Forest Ct
New Chastain Rd
Bells Ferry Rd
Noonday Creek
Flood depths (in feet) for acquisition buildings in relation to their first-floor elevations
3 to 5
6 to 8
8 to 10
10 to 11.2
N
0 500 1,000
FEET
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Figure C.14

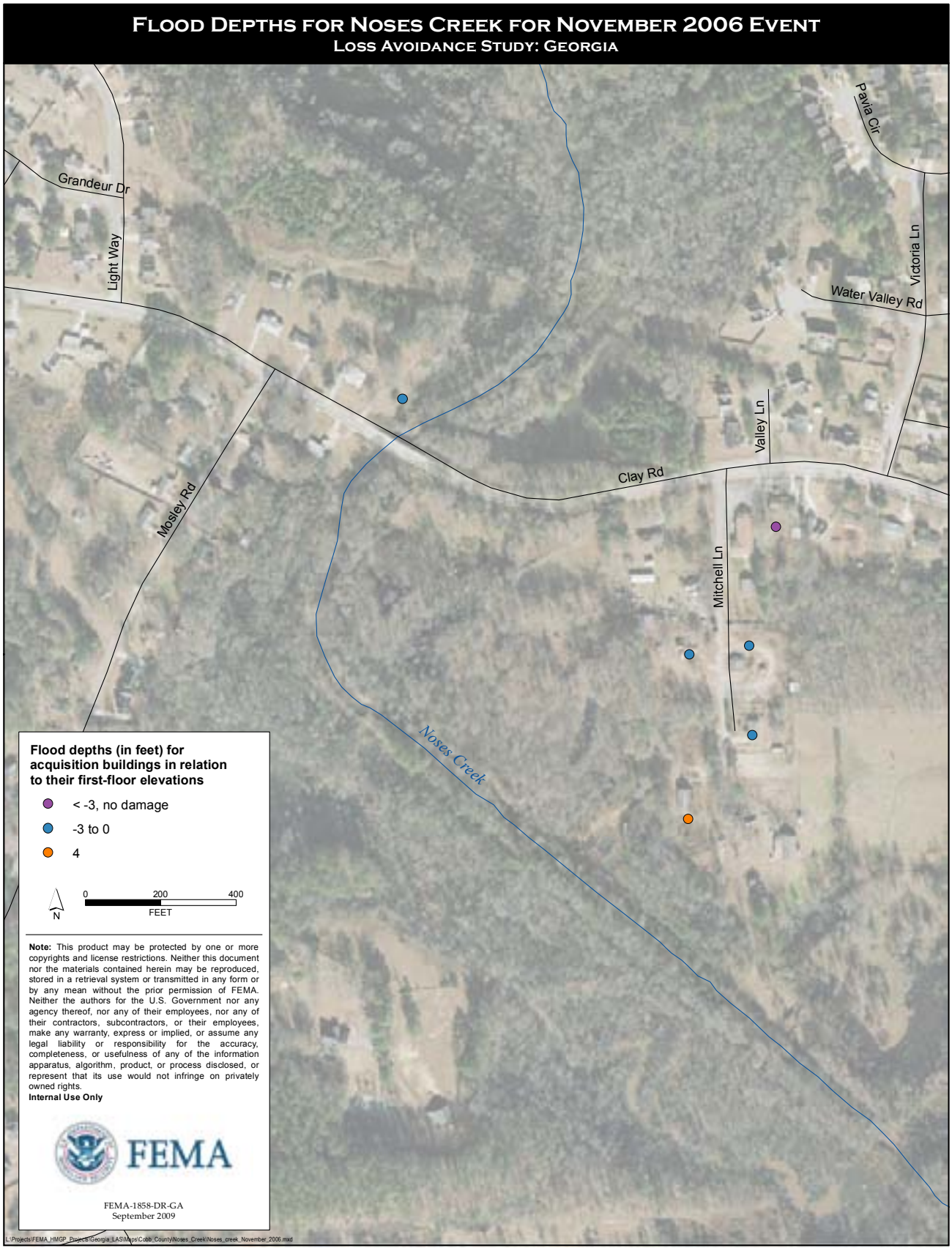
Flood Depths for Noses Creek for November 2006 Event
Loss Avoidance Study: Georgia
Pavia Cir
Grandeur Dr
Light Way
Victoria Ln
Water Valley Rd
Valley Ln
Clay Rd
Mosley Rd
Mitchell Ln
Noses Creek
Flood depths (in feet) for acquisition buildings in relation to their first-floor elevations
< -3, no damage
-3 to 0
4
N
0
200
400
FEET
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Figure C.15

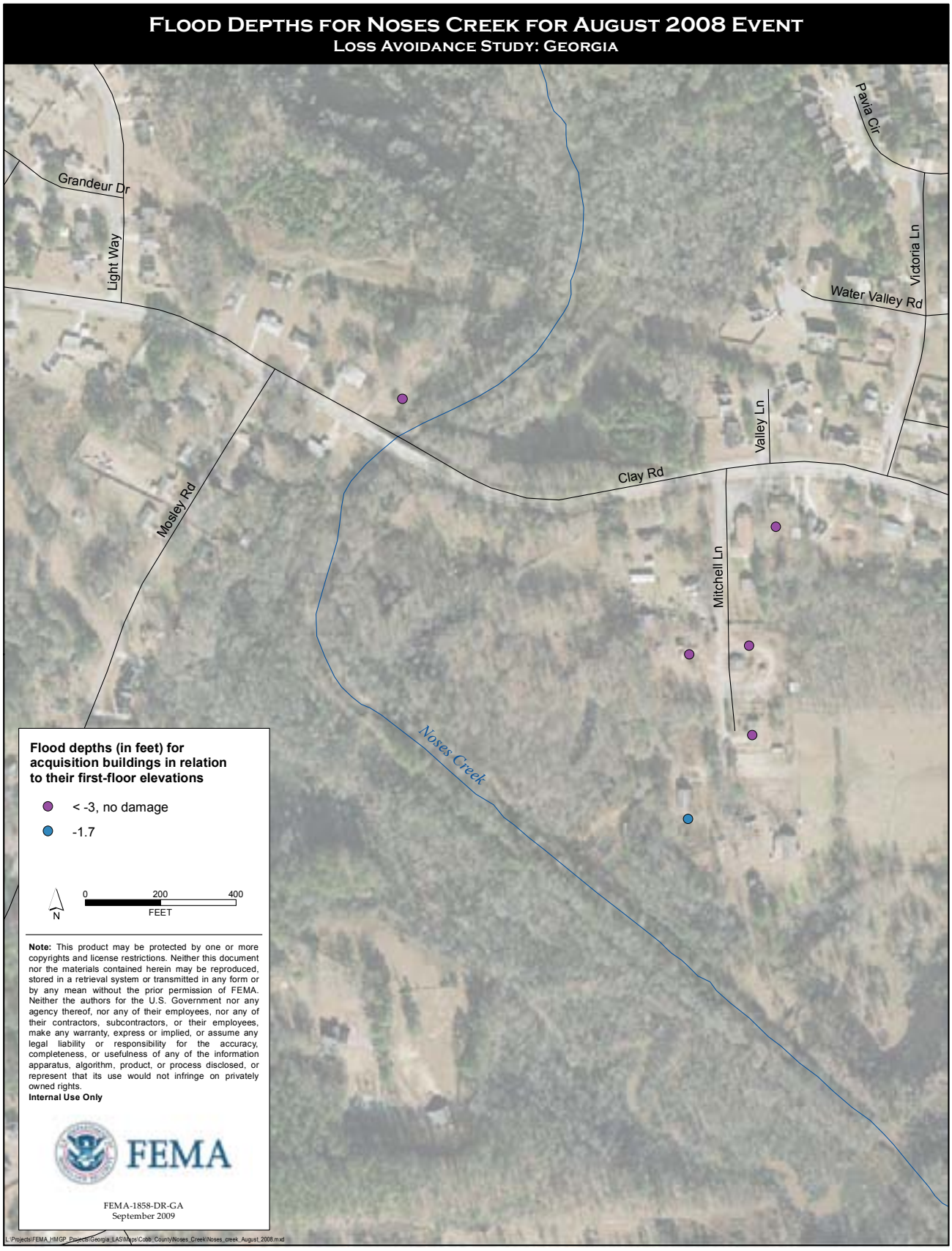
Flood Depths for Noses Creek for August 2008 Event
Loss Avoidance Study: Georgia
Grandeur Dr
Light Way
Pavia Cir
Victoria Ln
Water Valley Rd
Valley Ln
Clay Rd
Mosley Rd
Mitchell Ln
Noses Creek
Flood depths (in feet) for acquisition buildings in relation to their first-floor elevations
< -3, no damage
-1.7
N
0
200
400
FEET
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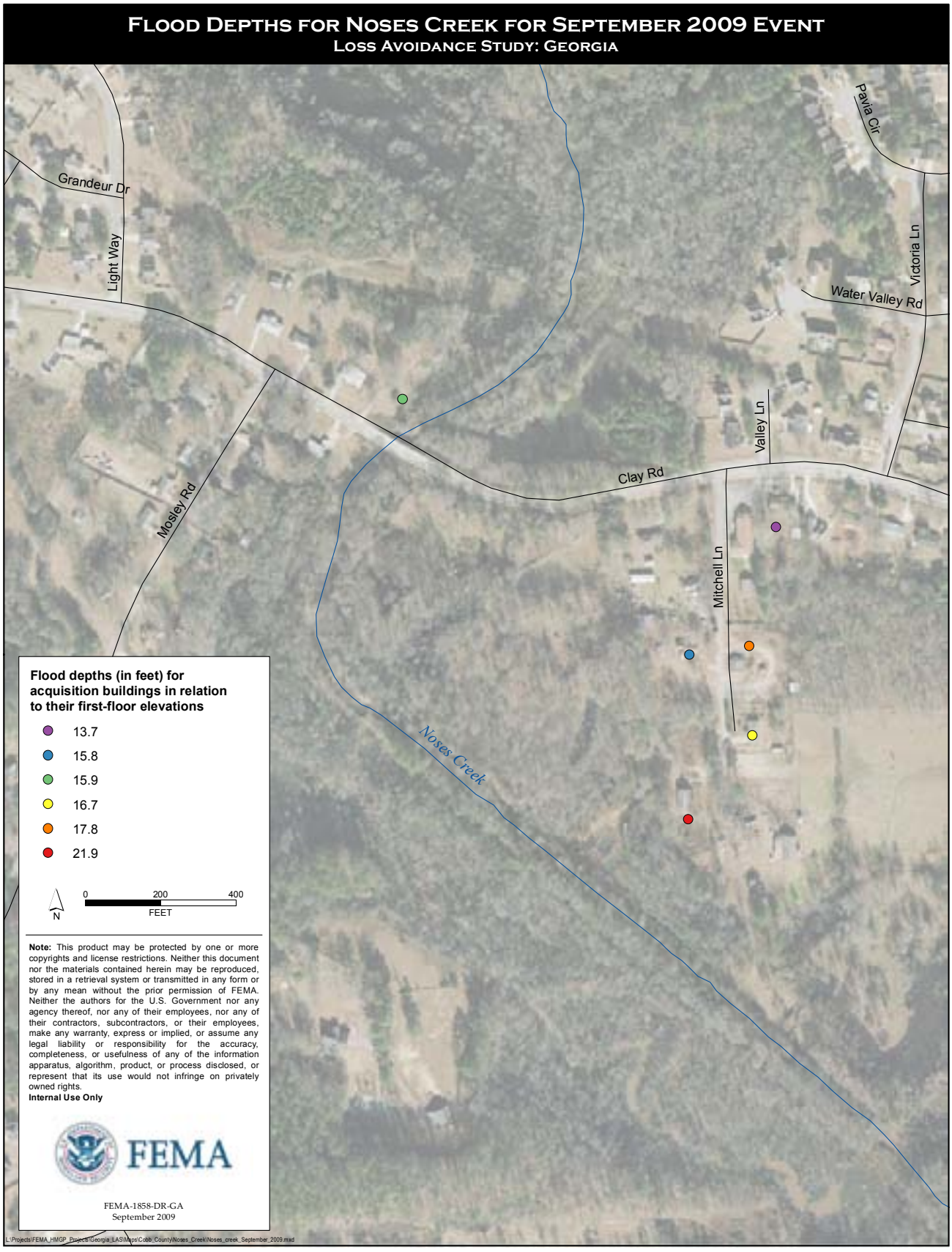
Figure C.16


Flood Depths for Noses Creek for September 2009 Event
Loss Avoidance Study: Georgia
Pavia Cir
Grandeur Dr
Light Way
Victoria Ln
Water Valley Rd
Valley Ln
Clay Rd
Mosley Rd
Mitchell Ln
Noses Creek
Flood depths (in feet) for acquisition buildings in relation to their first-floor elevations
13.7
15.8
15.9
16.7
17.8
21.9
N
0
200
400
FEET
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September 2009
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Figure C.17

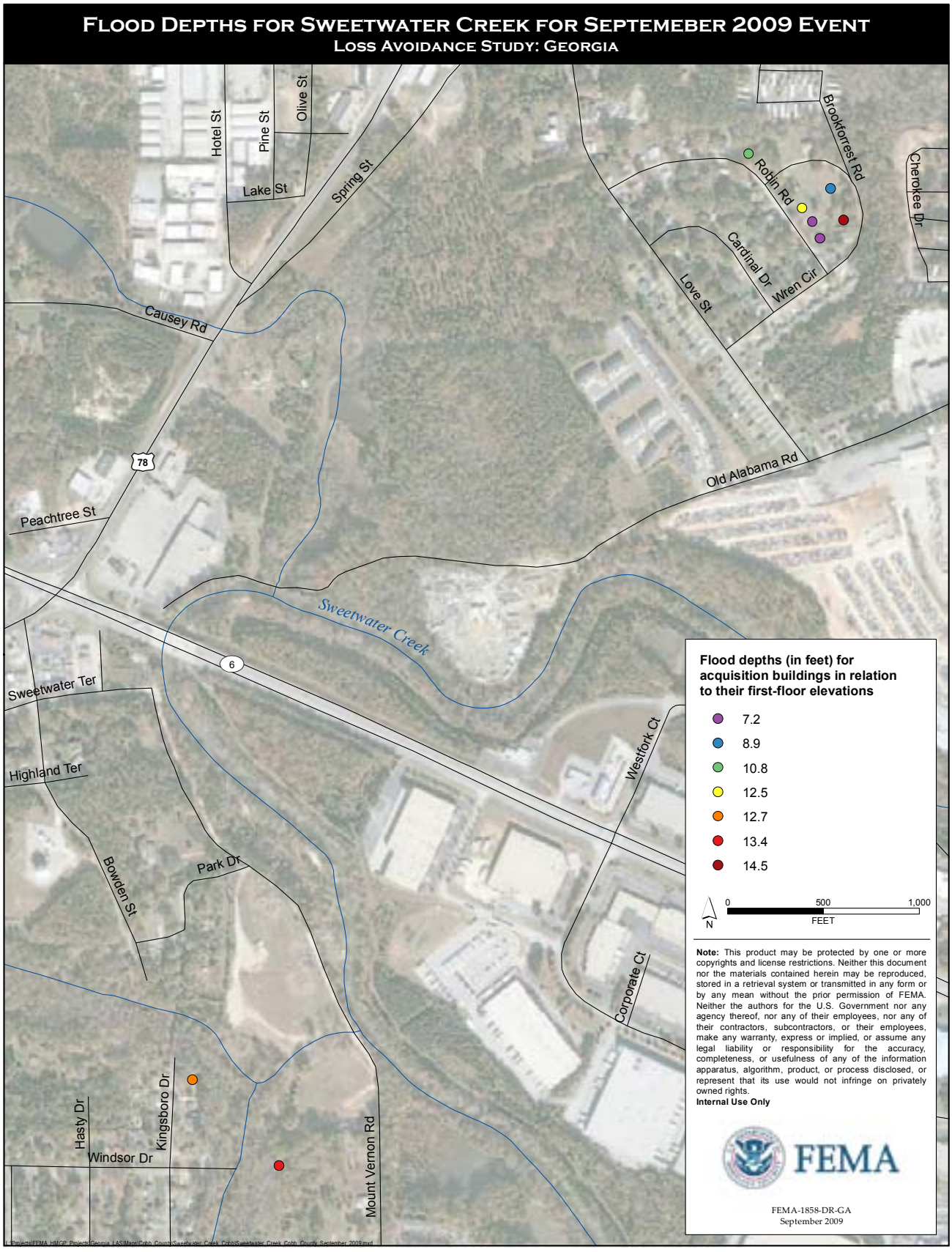
Flood Depths for Sweetwater Creek for Septemeber 2009 Event
Loss Avoidance Study: Georgia
Hotel St
Pine St
Olive St
Lake St
Spring St
Brookforrest Rd
Robin Rd
Cherokee Dr
Cardinal Dr
Wren Cir
Love St
Causey Rd
78
Old Alabama Rd
Peachtree St
Sweetwater Creek
6
Sweetwater Ter
Highland Ter
Westfork Ct
Bowden St
Park Dr
Corporate Ct
Hasty Dr
Kingsboro Dr
Windsor Dr
Mount Vernon Rd
Flood depths (in feet) for acquisition buildings in relation to their first-floor elevations
7.2
8.9
10.8
12.5
12.7
13.4
14.5
N
0
500
1,000
FEET
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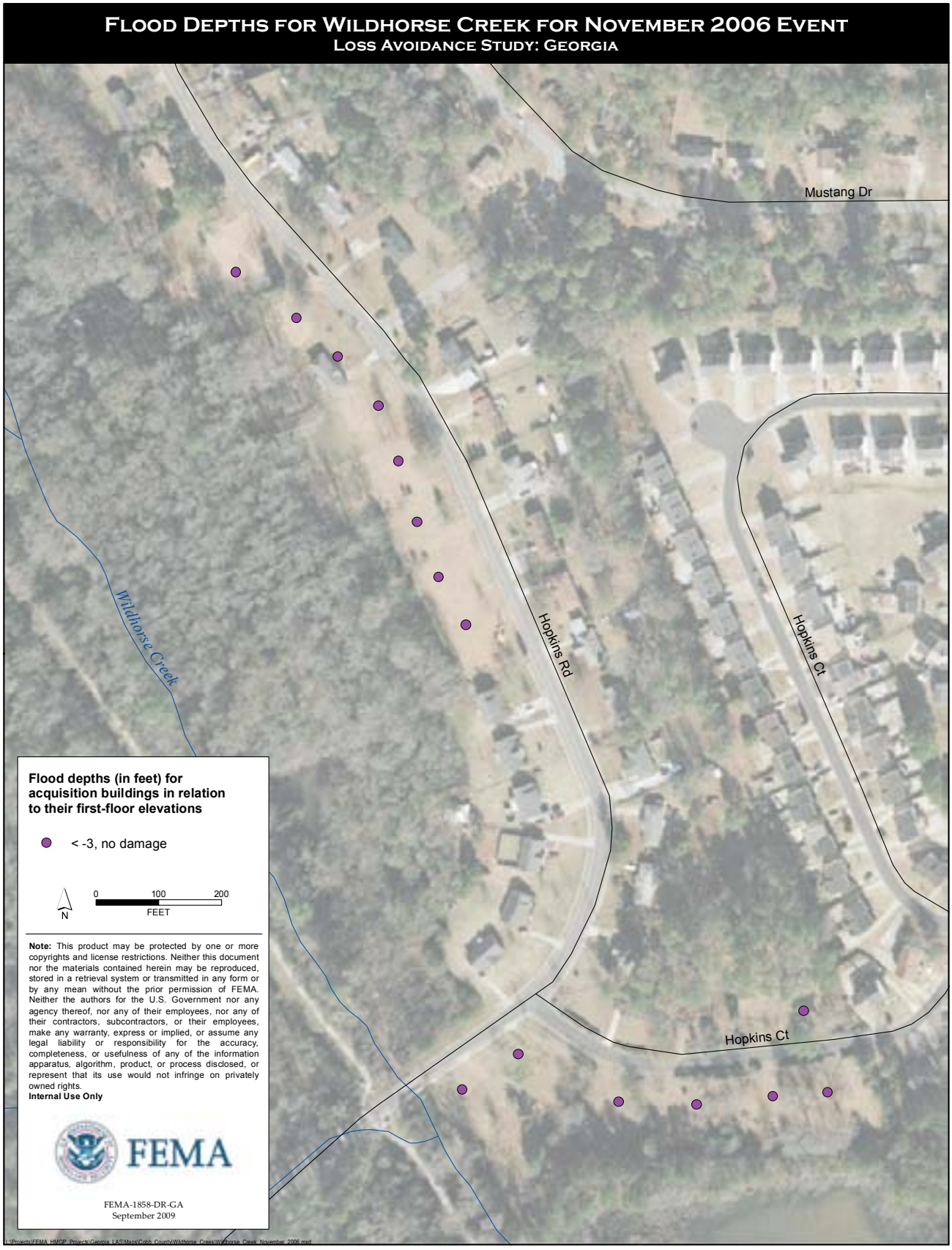
Figure C.18


Flood Depths for Wildhorse Creek for November 2006 Event
Loss Avoidance Study: Georgia
Mustang Dr
Hopkins Rd
Hopkins Ct
Hopkins Ct
Wildhorse Creek
Flood depths (in feet) for acquisition buildings in relation to their first-floor elevations
< -3, no damage
N
0
100
200
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September 2009

Figure C.19

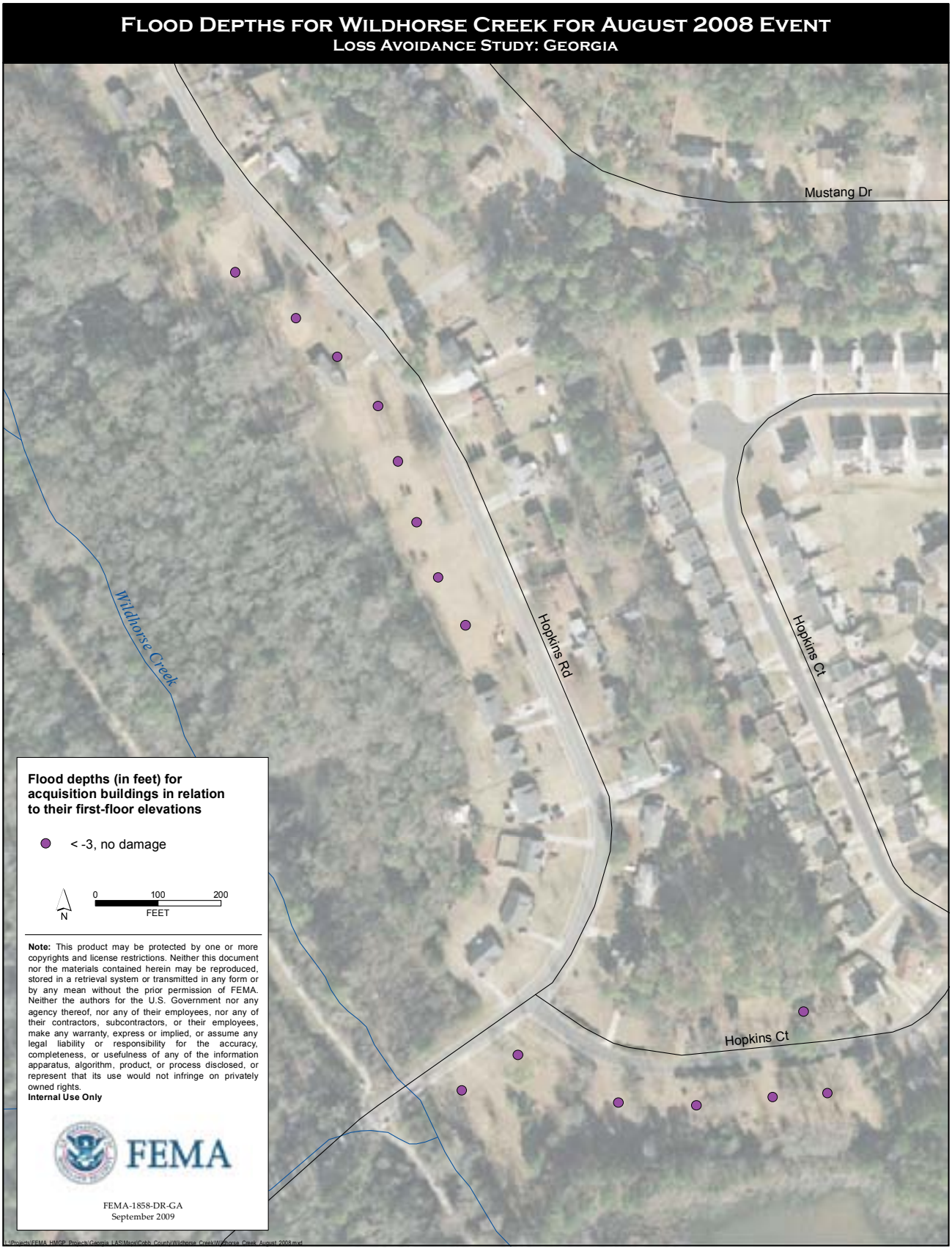
Flood Depths for Wildhorse Creek for August 2008 Event
Loss Avoidance Study: Georgia
Mustang Dr
Wildhorse Creek
Hopkins Rd
Hopkins Ct
Hopkins Ct
Flood depths (in feet) for acquisition buildings in relation to their first-floor elevations
< -3, no damage
N
0
100
200
FEET
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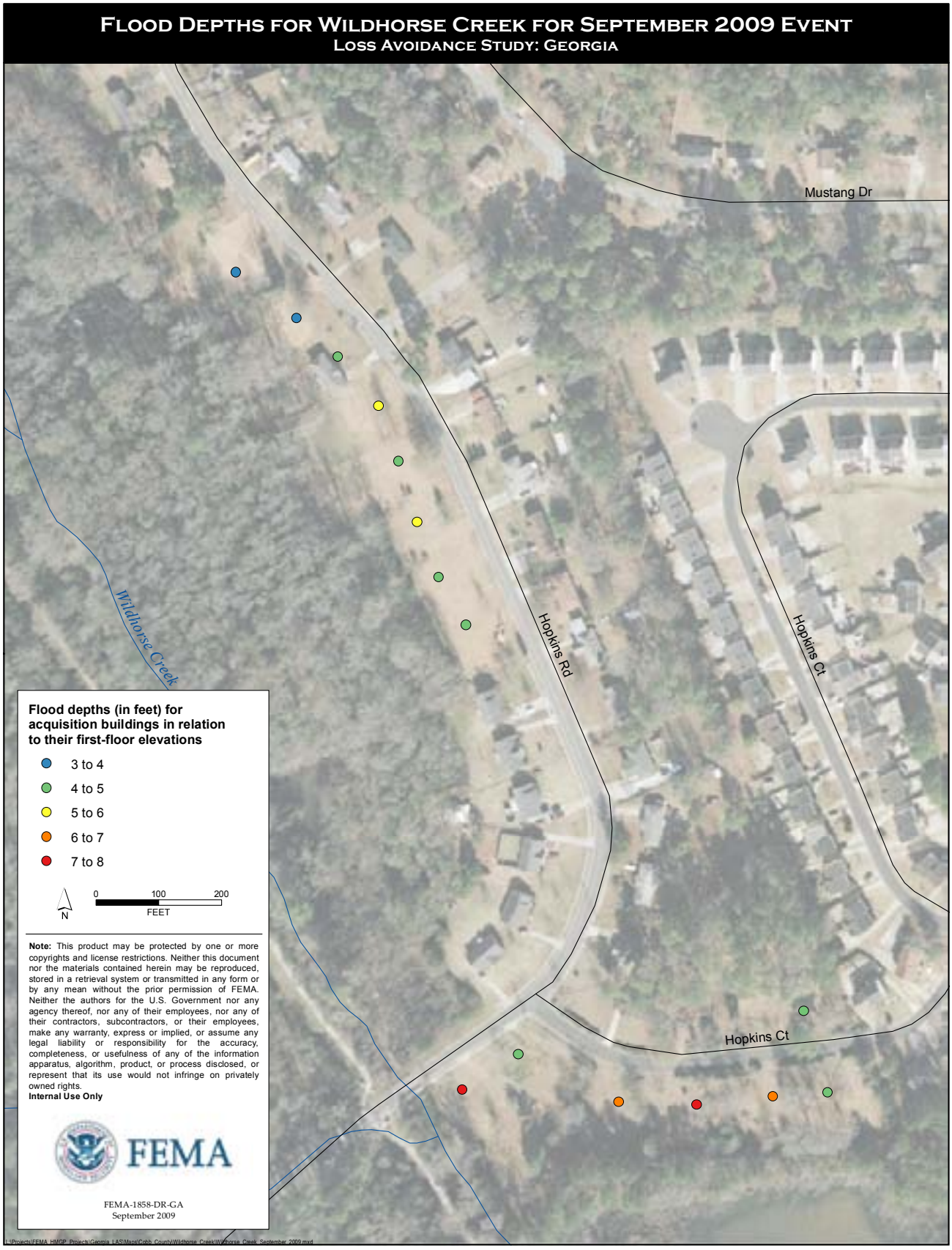
Figure C.20


Flood Depths for Wildhorse Creek for September 2009 Event
Loss Avoidance Study: Georgia
Mustang Dr
Hopkins Rd
Hopkins Ct
Hopkins Ct
Wildhorse Creek
Flood depths (in feet) for acquisition buildings in relation to their first-floor elevations
3 to 4
4 to 5
5 to 6
6 to 7
7 to 8
N
0
100
200
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September 2009

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Table C.1 (part 1 of 2)

Summary of Losses Avoided and ROI Calculations in Cobb County for All Events

Building Number	Address	Mitigation Completion Date	2010 Value of Total Mitigation Cost	Mar-06 Losses Avoided	Nov-06 Losses Avoided	Aug-08 Losses Avoided	Sep-09 Losses Avoided	TOTAL LOSSES AVOIDED	ROI (%)
198	3045 Leasa Ct, Marietta, GA 30066	May-04	$ 170,991	$ -	$ -	$ -	$ 96,175	$ 96,175	56%
199	3104 Leasa Ct, Marietta, GA 30066	May-04	$ 168,632	$ -	$ -	$ -	$ 90,474	$ 90,474	54%
200	3115 Leasa Ct, Marietta, GA 30066	May-04	$ 186,543	$ -	$ -	$ -	$ 55,489	$ 55,489	30%
79	161 Drury Ln, Kennesaw, GA 30144	Aug-05	$ 166,683	$ -	$ 2,424	$ -	$ 333,221	$ 335,645	201%
80	169 Hyde Park Ct NE, Kennesaw, GA 30144	Aug-05	$ 124,085	$ -	$ -	$ -	$ 320,173	$ 320,173	258%
81	159 Drury Lane, Kennesaw, GA 30144	Aug-05	$ 117,861	$ -	$ -	$ -	$ 253,581	$ 253,581	215%
84	2919 Hidden Forest Ct, Marietta, GA 30066	Aug-05	$ 163,444	$ -	$ -	$ -	$ 232,279	$ 232,279	142%
85	157 Drury Lane, Kennesaw, GA 30144	Aug-05	$ 142,118	$ -	$ -	$ -	$ 430,295	$ 430,295	303%
86	162 Drury Lane, Kennesaw, GA 30144	Aug-05	$ 143,283	$ -	$ -	$ -	$ 457,263	$ 457,263	319%
87	3997 Leicester Dr, Kennesaw, GA 30144	Aug-05	$ 138,773	$ -	$ -	$ -	$ 348,347	$ 348,347	251%
88	361 Sumter Dr, Marietta, GA 30066	Aug-05	$ 165,338	$ -	$ -	$ -	$ 110,100	$ 110,100	67%
90	160 Drury Lane, Kennesaw, GA 30144	Aug-05	$ 143,839	$ -	$ -	$ -	$ 180,967	$ 180,967	126%
91	167 Hyde Park, Kennesaw, GA 30144	Aug-05	$ 153,961	$ -	$ -	$ -	$ 152,935	$ 152,935	99%
92	2975 Leasa Ct, Marietta, GA 30066	Aug-05	$ 175,097	$ -	$ -	$ -	$ 72,022	$ 72,022	41%
93	2985 Leasa Ct, Marietta, GA 30066	Aug-05	$ 159,997	$ 34,027	$ 45,627	$ 43,613	$ 192,040	$ 315,307	197%
94	2991 Leasa Ct, Marietta, GA 30066	Aug-05	$ 167,446	$ -	$ 6,078	$ 5,349	$ 142,198	$ 153,625	92%
95	2995 Leasa Ct, Marietta, GA 30066	Aug-05	$ 174,575	$ -	$ -	$ -	$ 115,119	$ 115,119	66%
96	3005 Leasa Ct, Marietta, GA 30066	Aug-05	$ 161,557	$ -	$ -	$ -	$ 116,962	$ 116,962	72%
97	3015 Leasa Ct, Marietta, GA 30066	Aug-05	$ 158,111	$ -	$ -	$ -	$ 115,016	$ 115,016	73%
98	3025 Leasa Ct, Marietta, GA 30066	Aug-05	$ 159,328	$ -	$ -	$ -	$ 109,589	$ 109,589	69%
99	3035 Leasa Ct, Marietta, GA 30066	Aug-05	$ 178,633	$ -	$ -	$ -	$ 82,046	$ 82,046	46%
100	3055 Leasa Ct, Marietta, GA 30066	Aug-05	$ 160,606	$ -	$ -	$ -	$ 40,475	$ 40,475	25%
101	3065 Leasa Ct, Marietta, GA 30066	Aug-05	$ 173,071	$ -	$ -	$ -	$ 98,481	$ 98,481	57%
102	3075 Leasa Ct, Marietta, GA 30066	Aug-05	$ 172,199	$ -	$ -	$ -	$ 74,456	$ 74,456	43%
103	3084 Leasa Ct, Marietta, GA 30066	Aug-05	$ 158,586	$ -	$ -	$ -	$ 91,289	$ 91,289	58%
104	3085 Leasa Ct, Marietta, GA 30066	Aug-05	$ 168,141	$ -	$ -	$ -	$ 83,336	$ 83,336	50%
105	3094 Leasa Ct, Marietta, GA 30066	Aug-05	$ 161,432	$ -	$ -	$ -	$ 84,925	$ 84,925	53%
106	3095 Leasa Ct, Marietta, GA 30066	Aug-05	$ 193,167	$ -	$ -	$ -	$ 69,614	$ 69,614	36%
107	3105 Leasa Ct, Marietta, GA 30066	Aug-05	$ 161,142	$ -	$ -	$ -	$ 85,756	$ 85,756	53%
108	2900 Rio Montana Dr, Marietta, GA 30066	Aug-05	$ 148,142	$ -	$ -	$ -	$ 11,815	$ 11,815	8%
109	2910 Rio Montana Dr, Marietta, GA 30066	Aug-05	$ 143,480	$ -	$ -	$ -	$ 5,209	$ 5,209	4%
110	2920 Rio Montana Dr, Marietta, GA 30066	Aug-05	$ 179,934	$ -	$ -	$ -	$ 44,024	$ 44,024	24%
111	2930 Rio Montana Dr, Marietta, GA 30066	Aug-05	$ 184,299	$ -	$ -	$ -	$ 10,478	$ 10,478	6%
112	2950 Rio Montana Dr, Marietta, GA 30066	Aug-05	$ 199,039	$ -	$ -	$ -	$ 37,397	$ 37,397	19%
113	2970 Rio Montana Dr, Marietta, GA 30066	Aug-05	$ 192,011	$ -	$ -	$ -	$ 38,110	$ 38,110	20%
114	3005 Rio Montana Dr, Marietta, GA 30066	Aug-05	$ 193,980	$ -	$ -	$ -	$ -	$ -	0%
115	3015 Rio Montana Dr, Marietta, GA 30066	Aug-05	$ 177,850	$ -	$ -	$ -	$ -	$ -	0%
133	3464 Hopkins Road, Powder Springs, GA 30127	Jul-06	$ 165,925	$ -	$ -	$ -	$ 197,556	$ 197,556	119%
138	3420 Hopkins Court, Powder Springs, GA 30127	Aug-06	$ 158,267	$ -	$ -	$ -	$ 178,821	$ 178,821	113%

Table C.1 (part 1 of 2)

Summary of Losses Avoided and ROI Calculations in Cobb County for All Events

Building Number	Address	Mitigation Completion Date	2010 Value of Total Mitigation Cost	Mar-06 Losses Avoided	Nov-06 Losses Avoided	Aug-08 Losses Avoided	Sep-09 Losses Avoided	TOTAL LOSSES AVOIDED	ROI (%)
132	3474 Hopkins Road, Powder Springs, GA 30127	Oct-07	$ 47,847	$ -	$ -	$ -	$ 213,029	$ 213,029	445%
134	3484 Hopkins Road, Powder Springs, GA 30127	Oct-07	$ 149,609	$ -	$ -	$ -	$ 205,268	$ 205,268	137%
135	3494 Hopkins Road, Powder Springs, GA 30127	Oct-07	$ 77,870	$ -	$ -	$ -	$ 169,637	$ 169,637	218%
136	3504 Hopkins Road, Powder Springs, GA 30127	Oct-07	$ 167,611	$ -	$ -	$ -	$ 132,212	$ 132,212	79%
137	3415 Hopkins Court, Powder Springs, GA 30127	Oct-07	$ 130,881	$ -	$ -	$ -	$ 103,288	$ 103,288	79%
152	3020 Rio Montana Dr, Marietta, GA 30066	Jan-08	$ 177,194	$ -	$ -	$ -	$ -	$ -	0%
153	2980 Rio Montana Dr, Marietta, GA 30066	Jan-08	$ 182,529	$ -	$ -	$ -	$ 15,373	$ 15,373	8%
129	3434 Hopkins Road, Powder Springs, GA 30127	Mar-08	$ 129,298	$ -	$ -	$ -	$ 132,177	$ 132,177	102%
130	3444 Hopkins Road, Powder Springs, GA 30127	Apr-08	$ 125,945	$ -	$ -	$ -	$ 92,611	$ 92,611	74%
131	3454 Hopkins Road, Powder Springs, GA 30127	Apr-08	$ 57,478	$ -	$ -	$ -	$ 128,258	$ 128,258	223%
116	3425 Hopkins Court, Powder Springs, GA 30127	Jul-08	$ 124,304	$ -	$ -	$ -	$ 168,802	$ 168,802	136%
117	3435 Hopkins Court, Powder Springs, GA 30127	Jul-08	$ 86,017	$ -	$ -	$ -	$ 180,585	$ 180,585	210%
118	3445 Hopkins Court, Powder Springs, GA 30127	Jul-08	$ 125,733	$ -	$ -	$ -	$ 179,246	$ 179,246	143%
119	3565 Hopkins Road, Powder Springs, GA 30127	Jul-08	$ 96,465	$ -	$ -	$ -	$ 160,689	$ 160,689	167%
120	3575 Hopkins Road, Powder Springs, GA 30127	Jul-08	$ 34,945	$ -	$ -	$ -	$ 182,380	$ 182,380	522%
121	4781 Mitchell Lane, Austell, GA 30106	Jul-08	$ 57,923	$ -	$ -	$ -	$ 212,910	$ 212,910	368%
122	4798 Mitchell Lane, Austell, GA 30106	Jul-08	$ 50,782	$ -	$ -	$ -	$ 306,594	$ 306,594	604%
123	4825 Mitchell Lane, Austell, GA 30106	Jul-08	$ 42,456	$ -	$ -	$ -	$ 206,579	$ 206,579	487%
124	3192 Clay Rd, Austell, GA 30106	Jul-08	$ 38,522	$ -	$ -	$ -	$ 169,751	$ 169,751	441%
125	5288 Flint Hill Rd, Austell, GA 30106	Jul-08	$ 146,956	$ -	$ -	$ -	$ 302,531	$ 302,531	206%
127	4810 Mitchell Lane, Austell, GA 30106	Jul-08	$ 106,897	$ -	$ -	$ 7,878	$ 634,132	$ 642,010	601%
128	2981 Clay Rd, Austell, GA 30106	Jul-08	$ 59,795	$ -	$ -	$ -	$ 280,814	$ 280,814	470%
								TOTAL	
		Total Mitigation Costs:		$ 6,087,373	$ 6,411,565	$ 8,628,622	$ 8,628,622	$ 8,628,622	
		Total Losses Avoided:		$ 34,027	$ 54,129	$ 56,839	$ 9,334,898	$ 9,479,893	
		ROI:		**1%**	**1%**	**1%**	**108%**	**110%**	

ROI = Return on Investment

Indicates property was not mitigated at time of the storm event.

Table C.2 (part 1 of 2)

Summary of Losses Avoided and ROI Calculations for Cobb County, March 2006 Event

No.	Disaster/ Proj No	Project Type	Address	Flooding Source	Mitigation Completion Date	Building Type	BRV (2010$)	FFE (ft, NGVD29)	WSE for Event (ft, NGVD29)	Final Flood Depth (ft)	Building Damage ($)	Contents Damage ($)	Displacement Cost ($)	Disruption Cost ($)	Debris Removal Services ($)	Reduced Insurance Transaction Cost ($)	Total Losses Avoided ($)	Total Project Investment (2010$)	ROI
198	FMA-2002-PJ1	Acquisition	3045 Leasa Ct, Marietta, GA 30066	Little Noonday Creek	5/12/2004	2 story w/o basement	$ 247,277.71	942.00	939.22	-2.78	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 170,990.68	0.0%
199	FMA-2002-PJ2	Acquisition	3104 Leasa Ct, Marietta, GA 30066	Little Noonday Creek	5/12/2004	2 story w/o basement	$ 238,298.64	939.00	934.73	-4.27	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 168,632.42	0.0%
200	FMA-2001-PJ8	Acquisition	3115 Leasa Ct, Marietta, GA 30066	Little Noonday Creek	5/12/2004	Split level w/o basement	$ 262,915.43	939.00	933.95	-5.05	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 186,543.21	0.0%
79	1033-0123	Acquisition	161 Drury Ln, Kennesaw, GA 30144	Noonday Creek	8/30/2005	2 story w/o basement	$ 184,711.96	905.50	902.66	-2.84	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 166,682.74	0.0%
80	1033-0123	Acquisition	169 Hyde Park Ct NE, Kennesaw, GA 30144	Noonday Creek	8/30/2005	2 story w/o basement	$ 177,613.20	905.70	902.80	-2.90	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 124,085.22	0.0%
81	1033-0123	Acquisition	159 Drury Lane, Kennesaw, GA 30144	Noonday Creek	8/30/2005	1 story w/o basement	$ 130,841.72	905.80	902.65	-3.15	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 117,861.23	0.0%
84	1033-0123	Acquisition	2919 Hidden Forest Ct, Marietta, GA 30066	Noonday Creek	8/30/2005	3 story w/o basement	$ 222,257.52	934.50	929.86	-4.64	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 163,443.51	0.0%
85	1033-0123	Acquisition	157 Drury Lane, Kennesaw, GA 30144	Noonday Creek	8/30/2005	Split level w/o basement	$ 242,496.76	907.10	902.66	-4.44	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 142,117.73	0.0%
86	1033-0123	Acquisition	162 Drury Lane, Kennesaw, GA 30144	Noonday Creek	8/30/2005	2 story w/o basement	$ 276,894.90	907.40	902.70	-4.70	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 143,282.95	0.0%
87	1033-0123	Acquisition	3997 Leicester Dr, Kennesaw, GA 30144	Noonday Creek	8/30/2005	2 story w/o basement	$ 216,007.48	908.20	903.12	-5.08	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 138,773.35	0.0%
88	1033-0123	Acquisition	361 Sumter Dr, Marietta, GA 30066	Noonday Creek	8/30/2005	2 story w/o basement	$ 179,344.42	916.60	911.00	-5.60	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 165,337.99	0.0%
90	1033-0123	Acquisition	160 Drury Lane, Kennesaw, GA 30144	Noonday Creek	8/30/2005	2 story w/o basement	$ 187,268.83	910.40	902.74	-7.66	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 143,839.25	0.0%
91	1033-0123	Acquisition	167 Hyde Park, Kennesaw, GA 30144	Noonday Creek	8/30/2005	2 story w/o basement	$ 184,549.22	912.10	902.80	-9.30	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 153,960.87	0.0%
92	1033-0123	Acquisition	2975 Leasa Ct, Marietta, GA 30066	Little Noonday Creek	8/30/2005	2 story w/o basement	$ 244,605.64	949.00	944.28	-4.72	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 175,096.84	0.0%
93	1033-0123	Acquisition	2985 Leasa Ct, Marietta, GA 30066	Little Noonday Creek	8/30/2005	2 story w/o basement	$ 247,488.19	943.70	943.40	-0.30	$ 18,382.08	$ 9,431.98	$ -	$ 5,589.37	$ 623.27	$ -	$ 34,026.71	$ 159,997.29	21.3%
94	1033-0123	Acquisition	2991 Leasa Ct, Marietta, GA 30066	Little Noonday Creek	8/30/2005	2 story w/o basement	$ 246,561.66	945.00	942.89	-2.11	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 167,445.63	0.0%
95	1033-0123	Acquisition	2995 Leasa Ct, Marietta, GA 30066	Little Noonday Creek	8/30/2005	2 story w/o basement	$ 239,458.21	945.00	942.30	-2.70	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 174,575.16	0.0%
96	1033-0123	Acquisition	3005 Leasa Ct, Marietta, GA 30066	Little Noonday Creek	8/30/2005	2 story w/o basement	$ 246,664.61	944.50	941.79	-2.71	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 161,556.52	0.0%
97	1033-0123	Acquisition	3015 Leasa Ct, Marietta, GA 30066	Little Noonday Creek	8/30/2005	2 story w/o basement	$ 280,423.93	944.00	941.07	-2.93	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 158,110.57	0.0%
98	1033-0123	Acquisition	3025 Leasa Ct, Marietta, GA 30066	Little Noonday Creek	8/30/2005	2 story w/o basement	$ 242,535.95	943.00	940.42	-2.58	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 159,327.81	0.0%
99	1033-0123	Acquisition	3035 Leasa Ct, Marietta, GA 30066	Little Noonday Creek	8/30/2005	2 story w/o basement	$ 242,535.95	943.00	939.75	-3.25	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 178,632.62	0.0%
100	1033-0123	Acquisition	3055 Leasa Ct, Marietta, GA 30066	Little Noonday Creek	8/30/2005	2 story w/o basement	$ 249,799.93	943.00	938.61	-4.39	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 160,605.91	0.0%
101	1033-0123	Acquisition	3065 Leasa Ct, Marietta, GA 30066	Little Noonday Creek	8/30/2005	2 story w/o basement	$ 293,990.74	941.00	937.79	-3.21	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 173,071.01	0.0%
102	1033-0123	Acquisition	3075 Leasa Ct, Marietta, GA 30066	Little Noonday Creek	8/30/2005	2 story w/o basement	$ 280,286.11	941.00	936.72	-4.28	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 172,198.65	0.0%
103	1033-0123	Acquisition	3084 Leasa Ct, Marietta, GA 30066	Little Noonday Creek	8/30/2005	2 story w/o basement	$ 279,029.22	940.00	935.89	-4.11	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 158,585.88	0.0%
104	1033-0123	Acquisition	3085 Leasa Ct, Marietta, GA 30066	Little Noonday Creek	8/30/2005	2 story w/o basement	$ 271,015.62	940.00	935.48	-4.52	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 168,141.19	0.0%
105	1033-0123	Acquisition	3094 Leasa Ct, Marietta, GA 30066	Little Noonday Creek	8/30/2005	2 story w/o basement	$ 279,657.67	940.00	935.54	-4.46	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 161,431.89	0.0%
106	1033-0123	Acquisition	3095 Leasa Ct, Marietta, GA 30066	Little Noonday Creek	8/30/2005	2 story w/o basement	$ 283,009.37	940.00	934.65	-5.35	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 193,167.02	0.0%
107	1033-0123	Acquisition	3105 Leasa Ct, Marietta, GA 30066	Little Noonday Creek	8/30/2005	2 story w/o basement	$ 250,699.53	939.00	934.18	-4.82	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 161,142.08	0.0%
108	1033-0123	Acquisition	2900 Rio Montana Dr, Marietta, GA 30066	Morgan Lake Tributary	8/30/2005	1 story w/o basement	$ 100,936.70	950.17	943.80	-6.37	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 148,142.47	0.0%
109	1033-0123	Acquisition	2910 Rio Montana Dr, Marietta, GA 30066	Morgan Lake Tributary	8/30/2005	1 story w/o basement	$ 100,936.70	950.16	943.27	-6.89	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 143,479.87	0.0%
110	1033-0123	Acquisition	2920 Rio Montana Dr, Marietta, GA 30066	Morgan Lake Tributary	8/30/2005	2 story w/o basement	$ 212,420.51	947.73	942.68	-5.05	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 179,934.41	0.0%
111	1033-0123	Acquisition	2930 Rio Montana Dr, Marietta, GA 30066	Morgan Lake Tributary	8/30/2005	2 story w/o basement	$ 209,627.66	948.45	942.17	-6.28	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 184,299.07	0.0%
112	1033-0123	Acquisition	2950 Rio Montana Dr, Marietta, GA 30066	Morgan Lake Tributary	8/30/2005	2 story w/o basement	$ 209,956.23	945.81	940.95	-4.86	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 199,039.24	0.0%
113	1033-0123	Acquisition	2970 Rio Montana Dr, Marietta, GA 30066	Morgan Lake Tributary	8/30/2005	2 story w/o basement	$ 205,849.11	944.09	939.64	-4.45	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 192,010.56	0.0%

Table C.2 (part 2 of 2)

Summary of Losses Avoided and ROI Calculations for Cobb County, March 2006 Event

No.	Disaster/ Proj No	Project Type	Address	Flooding Source	Mitigation Completion Date	Building Type	BRV (2010$)	FFE (ft, NGVD29)	WSE for Event (ft, NGVD29)	Final Flood Depth (ft)	Building Damage ($)	Contents Damage ($)	Displacement Cost ($)	Disruption Cost ($)	Debris Removal Services ($)	Reduced Insurance Transaction Cost ($)	Total Losses Avoided ($)	Total Project Investment (2010$)	ROI
114	1033-0123	Acquisition	3005 Rio Montana Dr, Marietta, GA 30066	Morgan Lake Tributary	8/30/2005	1 story w/o basement	$ 135,346.94	947.79	938.56	-9.23	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 193,980.17	0.0%
115	1033-0123	Acquisition	3015 Rio Montana Dr, Marietta, GA 30066	Morgan Lake Tributary	8/30/2005	1 story w/o basement	$ 134,964.61	949.26	938.21	-11.05	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 177,850.03	0.0%
133	1560-0006	Acquisition	3464 Hopkins Road, Powder Springs, GA 30127	Wildhorse Creek	7/24/2006	1 story w/o basement	$ 119,735.44	901.60											
138	1560-0006	Acquisition	3420 Hopkins Court, Powder Springs, GA 30127	Wildhorse Creek	8/23/2006	1 story w/o basement	$ 102,601.91	901.47											
132	1560-0006	Acquisition	3474 Hopkins Road, Powder Springs, GA 30127	Wildhorse Creek	10/30/2007	1 story w/o basement	$ 122,499.96	900.60											
134	1560-0006	Acquisition	3484 Hopkins Road, Powder Springs, GA 30127	Wildhorse Creek	10/30/2007	1 story w/o basement	$ 119,735.44	901.10											
135	1560-0006	Acquisition	3494 Hopkins Road, Powder Springs, GA 30127	Wildhorse Creek	10/30/2007	1 story w/o basement	$ 97,647.86	901.60											
136	1560-0006	Acquisition	3504 Hopkins Road, Powder Springs, GA 30127	Wildhorse Creek	10/30/2007	1 story w/o basement	$ 117,617.76	902.00											
137	1560-0006	Acquisition	3415 Hopkins Court, Powder Springs, GA 30127	Wildhorse Creek	10/30/2007	1 story w/o basement	$ 88,109.81	902.12											
152	FMA-2006-PJ6	Acquisition	3020 Rio Montana Dr, Marietta, GA 30066	Morgan Lake Tributary	1/8/2008	Split level w/o basement	$ 97,928.73	946.00											
153	FMA-2006-PJ6	Acquisition	2980 Rio Montana Dr, Marietta, GA 30066	Morgan Lake Tributary	1/8/2008	Split level w/o basement	$ 94,822.23	944.00											
129	1560-0006	Acquisition	3434 Hopkins Road, Powder Springs, GA 30127	Wildhorse Creek	3/25/2008	1 story w/o basement	$ 153,260.91	903.10											
130	1560-0006	Acquisition	3444 Hopkins Road, Powder Springs, GA 30127	Wildhorse Creek	4/14/2008	1 story w/o basement	$ 96,950.85	903.30											
131	1560-0006	Acquisition	3454 Hopkins Road, Powder Springs, GA 30127	Wildhorse Creek	4/14/2008	1 story w/o basement	$ 119,735.44	902.10											
116	1554-0006	Acquisition	3425 Hopkins Court, Powder Springs, GA 30127	Wildhorse Creek	7/1/2008	1 story w/o basement	$ 86,815.40	899.57											
117	1554-0006	Acquisition	3435 Hopkins Court, Powder Springs, GA 30127	Wildhorse Creek	7/1/2008	1 story w/o basement	$ 92,035.65	898.65											
118	1554-0006	Acquisition	3445 Hopkins Court, Powder Springs, GA 30127	Wildhorse Creek	7/1/2008	1 story w/o basement	$ 92,035.65	899.40											
119	1554-0006	Acquisition	3565 Hopkins Road, Powder Springs, GA 30127	Wildhorse Creek	7/1/2008	1 story w/o basement	$ 92,035.65	901.65											
120	1554-0006	Acquisition	3575 Hopkins Road, Powder Springs, GA 30127	Wildhorse Creek	7/1/2008	1 story w/o basement	$ 92,035.65	898.85											
121	1554-0006	Acquisition	4781 Mitchell Lane, Austell, GA 30106	Noses Creek	7/1/2008	1 story w/o basement	$ 94,344.15	887.25											
122	1554-0006	Acquisition	4798 Mitchell Lane, Austell, GA 30106	Noses Creek	7/1/2008	1 story w/o basement	$ 143,008.72	889.25											
123	1554-0006	Acquisition	4825 Mitchell Lane, Austell, GA 30106	Noses Creek	7/1/2008	1 story w/o basement	$ 91,211.65	888.32											
124	1554-0006	Acquisition	3192 Clay Rd, Austell, GA 30106	Noses Creek	7/1/2008	1 story w/o basement	$ 69,760.87	889.15											
125	1554-0006	Acquisition	5288 Flint Hill Rd, Austell, GA 30106	Sweetwater Creek	7/1/2008	1 story w/o basement	$ 156,396.00	891.35											
127	1554-0006	Acquisition	4810 Mitchell Lane, Austell, GA 30106	Noses Creek	7/1/2008	2 story w/o basement	$ 350,703.67	883.09											
128	1554-0006	Acquisition	2981 Clay Rd, Austell, GA 30106	Noses Creek	7/1/2008	1 story w/o basement	$ 133,471.52	891.35											
										TOTAL	$ 18,382.08	$ 9,431.98	$ -	$ 5,589.37	$ 623.27	$ -	$ 34,026.71	$ 6,087,373.07	0.56%

BRV = building replacement value
FFE = first floor elevation
ft = feet
NGVD29 = National Geodetic Vertical Datum of 1929
ROI = Return on Investment
WSE = water surface elevation

Indicates property was not mitigated at time of the storm event.

Table C.3 (part 1 of 2)

Summary of Losses Avoided and ROI Calculations for Cobb County, November 2006 Event

No.	Disaster/ Proj No	Project Type	Address	Flooding Source	Mitigation Completion Date	Building Type	BRV (2010$)	FFE (ft, NGVD29)	WSE for Event (ft, NGVD29)	Final Flood Depth (ft)	Building Damage ($)	Contents Damage ($)	Displacement Cost ($)	Disruption Cost ($)	Debris Removal Services ($)	Reduced Insurance Transaction Cost ($)	Total Losses Avoided ($)	Total Project Investment (2010$)	ROI
198	FMA-2002-PJ1	Acquisition	3045 Leasa Ct, Marietta, GA 30066	Little Noonday Creek	5/12/2004	2 story w/o basement	$ 247,277.7	942.00	939.63	-2.37	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 170,990.7	0.0%
199	FMA-2002-PJ2	Acquisition	3104 Leasa Ct, Marietta, GA 30066	Little Noonday Creek	5/12/2004	2 story w/o basement	$ 238,298.6	939.00	935.19	-3.81	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 168,632.4	0.0%
200	FMA-2001-PJ8	Acquisition	3115 Leasa Ct, Marietta, GA 30066	Little Noonday Creek	5/12/2004	Split level w/o basement	$ 262,915.4	939.00	934.42	-4.58	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 186,543.2	0.0%
79	1033-0123	Acquisition	161 Drury Ln, Kennesaw, GA 30144	Noonday Creek	8/30/2005	2 story w/o basement	$ 184,712.0	905.50	903.52	-1.98	$ 108.6	$ 36.2	$ -	$ 2,275.2	$ 4.2	$ -	$ 2,424.2	$ 166,682.7	1.5%
80	1033-0123	Acquisition	169 Hyde Park Ct NE, Kennesaw, GA 30144	Noonday Creek	8/30/2005	2 story w/o basement	$ 177,613.2	905.70	903.64	-2.06	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 124,085.2	0.0%
81	1033-0123	Acquisition	159 Drury Lane, Kennesaw, GA 30144	Noonday Creek	8/30/2005	1 story w/o basement	$ 130,841.7	905.80	903.51	-2.29	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 117,861.2	0.0%
84	1033-0123	Acquisition	2919 Hidden Forest Ct, Marietta, GA 30066	Noonday Creek	8/30/2005	3 story w/o basement	$ 222,257.5	934.50	930.82	-3.68	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 163,443.5	0.0%
85	1033-0123	Acquisition	157 Drury Lane, Kennesaw, GA 30144	Noonday Creek	8/30/2005	Split level w/o basement	$ 242,496.8	907.10	903.51	-3.59	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 142,117.7	0.0%
86	1033-0123	Acquisition	162 Drury Lane, Kennesaw, GA 30144	Noonday Creek	8/30/2005	2 story w/o basement	$ 276,894.9	907.40	903.55	-3.85	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 143,282.9	0.0%
87	1033-0123	Acquisition	3997 Leicester Dr, Kennesaw, GA 30144	Noonday Creek	8/30/2005	2 story w/o basement	$ 216,007.5	908.20	903.91	-4.29	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 138,773.3	0.0%
88	1033-0123	Acquisition	361 Sumter Dr, Marietta, GA 30066	Noonday Creek	8/30/2005	2 story w/o basement	$ 179,344.4	916.60	911.72	-4.88	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 165,338.0	0.0%
90	1033-0123	Acquisition	160 Drury Lane, Kennesaw, GA 30144	Noonday Creek	8/30/2005	2 story w/o basement	$ 187,268.8	910.40	903.58	-6.82	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 143,839.2	0.0%
91	1033-0123	Acquisition	167 Hyde Park, Kennesaw, GA 30144	Noonday Creek	8/30/2005	2 story w/o basement	$ 184,549.2	912.10	903.64	-8.46	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 153,960.9	0.0%
92	1033-0123	Acquisition	2975 Leasa Ct, Marietta, GA 30066	Little Noonday Creek	8/30/2005	2 story w/o basement	$ 244,605.6	949.00	944.67	-4.33	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 175,096.8	0.0%
93	1033-0123	Acquisition	2985 Leasa Ct, Marietta, GA 30066	Little Noonday Creek	8/30/2005	2 story w/o basement	$ 247,488.2	943.70	943.79	0.09	$ 24,394.4	$ 13,238.6	$ 483.3	$ 6,682.0	$ 828.7	$ -	$ 45,627.0	$ 159,997.3	28.5%
94	1033-0123	Acquisition	2991 Leasa Ct, Marietta, GA 30066	Little Noonday Creek	8/30/2005	2 story w/o basement	$ 246,561.7	945.00	943.28	-1.72	$ 2,084.4	$ 694.8	$ -	$ 2,629.0	$ 69.8	$ 600.0	$ 6,078.1	$ 167,445.6	3.6%
95	1033-0123	Acquisition	2995 Leasa Ct, Marietta, GA 30066	Little Noonday Creek	8/30/2005	2 story w/o basement	$ 239,458.2	945.00	942.70	-2.30	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 174,575.2	0.0%
96	1033-0123	Acquisition	3005 Leasa Ct, Marietta, GA 30066	Little Noonday Creek	8/30/2005	2 story w/o basement	$ 246,664.6	944.50	942.19	-2.31	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 161,556.5	0.0%
97	1033-0123	Acquisition	3015 Leasa Ct, Marietta, GA 30066	Little Noonday Creek	8/30/2005	2 story w/o basement	$ 280,423.9	944.00	941.48	-2.52	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 158,110.6	0.0%
98	1033-0123	Acquisition	3025 Leasa Ct, Marietta, GA 30066	Little Noonday Creek	8/30/2005	2 story w/o basement	$ 242,536.0	943.00	940.83	-2.17	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 159,327.8	0.0%
99	1033-0123	Acquisition	3035 Leasa Ct, Marietta, GA 30066	Little Noonday Creek	8/30/2005	2 story w/o basement	$ 242,536.0	943.00	940.16	-2.84	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 178,632.6	0.0%
100	1033-0123	Acquisition	3055 Leasa Ct, Marietta, GA 30066	Little Noonday Creek	8/30/2005	2 story w/o basement	$ 249,799.9	943.00	939.03	-3.97	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 160,605.9	0.0%
101	1033-0123	Acquisition	3065 Leasa Ct, Marietta, GA 30066	Little Noonday Creek	8/30/2005	2 story w/o basement	$ 293,990.7	941.00	938.22	-2.78	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 173,071.0	0.0%
102	1033-0123	Acquisition	3075 Leasa Ct, Marietta, GA 30066	Little Noonday Creek	8/30/2005	2 story w/o basement	$ 280,286.1	941.00	937.16	-3.84	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 172,198.7	0.0%
103	1033-0123	Acquisition	3084 Leasa Ct, Marietta, GA 30066	Little Noonday Creek	8/30/2005	2 story w/o basement	$ 279,029.2	940.00	936.33	-3.67	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 158,585.9	0.0%
104	1033-0123	Acquisition	3085 Leasa Ct, Marietta, GA 30066	Little Noonday Creek	8/30/2005	2 story w/o basement	$ 271,015.6	940.00	935.93	-4.07	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 168,141.2	0.0%
105	1033-0123	Acquisition	3094 Leasa Ct, Marietta, GA 30066	Little Noonday Creek	8/30/2005	2 story w/o basement	$ 279,657.7	940.00	936.00	-4.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 161,431.9	0.0%
106	1033-0123	Acquisition	3095 Leasa Ct, Marietta, GA 30066	Little Noonday Creek	8/30/2005	2 story w/o basement	$ 283,009.4	940.00	935.11	-4.89	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 193,167.0	0.0%
107	1033-0123	Acquisition	3105 Leasa Ct, Marietta, GA 30066	Little Noonday Creek	8/30/2005	2 story w/o basement	$ 250,699.5	939.00	934.65	-4.35	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 161,142.1	0.0%
108	1033-0123	Acquisition	2900 Rio Montana Dr, Marietta, GA 30066	Morgan Lake Tributary	8/30/2005	1 story w/o basement	$ 100,936.7	950.17	944.19	-5.98	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 148,142.5	0.0%
109	1033-0123	Acquisition	2910 Rio Montana Dr, Marietta, GA 30066	Morgan Lake Tributary	8/30/2005	1 story w/o basement	$ 100,936.7	950.16	943.66	-6.50	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 143,479.9	0.0%
110	1033-0123	Acquisition	2920 Rio Montana Dr, Marietta, GA 30066	Morgan Lake Tributary	8/30/2005	2 story w/o basement	$ 212,420.5	947.73	943.08	-4.65	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 179,934.4	0.0%
111	1033-0123	Acquisition	2930 Rio Montana Dr, Marietta, GA 30066	Morgan Lake Tributary	8/30/2005	2 story w/o basement	$ 209,627.7	948.45	942.57	-5.88	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 184,299.1	0.0%

Table C.3 (part 2 of 2)

Summary of Losses Avoided and ROI Calculations for Cobb County, November 2006 Event

No.	Disaster/ Proj No	Project Type	Address	Flooding Source	Mitigation Completion Date	Building Type	BRV (2010$)	FFE (ft, NGVD29)	WSE for Event (ft, NGVD29)	Final Flood Depth (ft)	Building Damage ($)	Contents Damage ($)	Displacement Cost ($)	Disruption Cost ($)	Debris Removal Services ($)	Reduced Insurance Transaction Cost ($)	Total Losses Avoided ($)	Total Project Investment (2010$)	ROI
112	1033-0123	Acquisition	2950 Rio Montana Dr, Marietta, GA 30066	Morgan Lake Tributary	8/30/2005	2 story w/o basement	$ 209,956.2	945.81	941.36	-4.45	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 199,039.2	0.0%
113	1033-0123	Acquisition	2970 Rio Montana Dr, Marietta, GA 30066	Morgan Lake Tributary	8/30/2005	2 story w/o basement	$ 205,849.1	944.09	940.05	-4.04	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 192,010.6	0.0%
114	1033-0123	Acquisition	3005 Rio Montana Dr, Marietta, GA 30066	Morgan Lake Tributary	8/30/2005	1 story w/o basement	$ 135,346.9	947.79	938.98	-8.81	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 193,980.2	0.0%
115	1033-0123	Acquisition	3015 Rio Montana Dr, Marietta, GA 30066	Morgan Lake Tributary	8/30/2005	1 story w/o basement	$ 134,964.6	949.26	938.63	-10.63	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 177,850.0	0.0%
133	1560-0006	Acquisition	3464 Hopkins Road, Powder Springs, GA 30127	Wildhorse Creek	7/24/2006	1 story w/o basement	$ 119,735.4	901.60	894.10	-7.50	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 165,925.3	0.0%
138	1560-0006	Acquisition	3420 Hopkins Court, Powder Springs, GA 30127	Wildhorse Creek	8/23/2006	1 story w/o basement	$ 102,601.9	901.47	894.07	-7.40	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 158,266.8	0.0%
132	1560-0006	Acquisition	3474 Hopkins Road, Powder Springs, GA 30127	Wildhorse Creek	10/30/2007	1 story w/o basement	$ 122,500.0	900.60											
134	1560-0006	Acquisition	3484 Hopkins Road, Powder Springs, GA 30127	Wildhorse Creek	10/30/2007	1 story w/o basement	$ 119,735.4	901.10											
135	1560-0006	Acquisition	3494 Hopkins Road, Powder Springs, GA 30127	Wildhorse Creek	10/30/2007	1 story w/o basement	$ 97,647.9	901.60											
136	1560-0006	Acquisition	3504 Hopkins Road, Powder Springs, GA 30127	Wildhorse Creek	10/30/2007	1 story w/o basement	$ 117,617.8	902.00											
137	1560-0006	Acquisition	3415 Hopkins Court, Powder Springs, GA 30127	Wildhorse Creek	10/30/2007	1 story w/o basement	$ 88,109.8	902.12											
152	FMA-2006-PJ6	Acquisition	3020 Rio Montana Dr, Marietta, GA 30066	Morgan Lake Tributary	1/8/2008	Split level w/o basement	$ 97,928.7	946.00											
153	FMA-2006-PJ6	Acquisition	2980 Rio Montana Dr, Marietta, GA 30066	Morgan Lake Tributary	1/8/2008	Split level w/o basement	$ 94,822.2	944.00											
129	1560-0006	Acquisition	3434 Hopkins Road, Powder Springs, GA 30127	Wildhorse Creek	3/25/2008	1 story w/o basement	$ 153,260.9	903.10											
130	1560-0006	Acquisition	3444 Hopkins Road, Powder Springs, GA 30127	Wildhorse Creek	4/14/2008	1 story w/o basement	$ 96,950.9	903.30											
131	1560-0006	Acquisition	3454 Hopkins Road, Powder Springs, GA 30127	Wildhorse Creek	4/14/2008	1 story w/o basement	$ 119,735.4	902.10											
116	1554-0006	Acquisition	3425 Hopkins Court, Powder Springs, GA 30127	Wildhorse Creek	7/1/2008	1 story w/o basement	$ 86,815.4	899.57											
117	1554-0006	Acquisition	3435 Hopkins Court, Powder Springs, GA 30127	Wildhorse Creek	7/1/2008	1 story w/o basement	$ 92,035.7	898.65											
118	1554-0006	Acquisition	3445 Hopkins Court, Powder Springs, GA 30127	Wildhorse Creek	7/1/2008	1 story w/o basement	$ 92,035.7	899.40											
119	1554-0006	Acquisition	3565 Hopkins Road, Powder Springs, GA 30127	Wildhorse Creek	7/1/2008	1 story w/o basement	$ 92,035.7	901.65											
120	1554-0006	Acquisition	3575 Hopkins Road, Powder Springs, GA 30127	Wildhorse Creek	7/1/2008	1 story w/o basement	$ 92,035.7	898.85											
121	1554-0006	Acquisition	4781 Mitchell Lane, Austell, GA 30106	Noses Creek	7/1/2008	1 story w/o basement	$ 94,344.1	887.25											
122	1554-0006	Acquisition	4798 Mitchell Lane, Austell, GA 30106	Noses Creek	7/1/2008	1 story w/o basement	$ 143,008.7	889.25											
123	1554-0006	Acquisition	4825 Mitchell Lane, Austell, GA 30106	Noses Creek	7/1/2008	1 story w/o basement	$ 91,211.7	888.32											
124	1554-0006	Acquisition	3192 Clay Rd, Austell, GA 30106	Noses Creek	7/1/2008	1 story w/o basement	$ 69,760.9	889.15											
125	1554-0006	Acquisition	5288 Flint Hill Rd, Austell, GA 30106	Sweetwater Creek	7/1/2008	1 story w/o basement	$ 156,396.0	891.35											
127	1554-0006	Acquisition	4810 Mitchell Lane, Austell, GA 30106	Noses Creek	7/1/2008	2 story w/o basement	$ 350,703.7	883.09											
128	1554-0006	Acquisition	2981 Clay Rd, Austell, GA 30106	Noses Creek	7/1/2008	1 story w/o basement	$ 133,471.5	891.35											
										TOTAL	$ 26,587.4	$ 13,969.6	$ 483.3	$ 11,586.3	$ 902.8	$ 600.0	$ 54,129.3	$ 6,411,565.2	0.84%

BRV = building replacement value
FFE = first floor elevation
ft = feet
NGVD29 = National Geodetic Vertical Datum of 1929
ROI = Return on Investment
WSE = water surface elevation

Indicates property was not mitigated at time of the storm event.

Table C.4 (part 1 of 2)

Summary of Losses Avoided and ROI Calculations for Cobb County, August 2008 Event

No.	Disaster/ Proj No	Project Type	Address	Flooding Source	Mitigation Completion Date	Building Type	BRV (2010$)	FFE (ft, NGVD29)	WSE for Event (ft, NGVD29)	Final Flood Depth (ft)	Building Damage ($)	Contents Damage ($)	Displacement Cost ($)	Disruption Cost ($)	Debris Removal Services ($)	Reduced Insurance Transaction Cost ($)	Total Losses Avoided ($)	Total Project Investment (2010$)	ROI
198	FMA-2002-PJ1	Acquisition	3045 Leasa Ct, Marietta, GA 30066	Little Noonday Creek	5/12/2004	2 story w/o basement	$ 247,277.71	942.00	939.56	-2.44	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 170,990.68	0.0%
199	FMA-2002-PJ2	Acquisition	3104 Leasa Ct, Marietta, GA 30066	Little Noonday Creek	5/12/2004	2 story w/o basement	$ 238,298.64	939.00	935.12	-3.88	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 168,632.42	0.0%
200	FMA-2001-PJ8	Acquisition	3115 Leasa Ct, Marietta, GA 30066	Little Noonday Creek	5/12/2004	Split level w/o basement	$ 262,915.43	939.00	934.34	-4.66	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 186,543.21	0.0%
79	1033-0123	Acquisition	161 Drury Ln, Kennesaw, GA 30144	Noonday Creek	8/30/2005	2 story w/o basement	$ 184,711.96	905.50	903.38	-2.12	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 166,682.74	0.0%
80	1033-0123	Acquisition	169 Hyde Park Ct NE, Kennesaw, GA 30144	Noonday Creek	8/30/2005	2 story w/o basement	$ 177,613.20	905.70	903.50	-2.20	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 124,085.22	0.0%
81	1033-0123	Acquisition	159 Drury Lane, Kennesaw, GA 30144	Noonday Creek	8/30/2005	1 story w/o basement	$ 130,841.72	905.80	903.37	-2.43	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 117,861.23	0.0%
84	1033-0123	Acquisition	2919 Hidden Forest Ct, Marietta, GA 30066	Noonday Creek	8/30/2005	3 story w/o basement	$ 222,257.52	934.50	930.67	-3.83	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 163,443.51	0.0%
85	1033-0123	Acquisition	157 Drury Lane, Kennesaw, GA 30144	Noonday Creek	8/30/2005	Split level w/o basement	$ 242,496.76	907.10	903.37	-3.73	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 142,117.73	0.0%
86	1033-0123	Acquisition	162 Drury Lane, Kennesaw, GA 30144	Noonday Creek	8/30/2005	2 story w/o basement	$ 276,894.90	907.40	903.41	-3.99	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 143,282.95	0.0%
87	1033-0123	Acquisition	3997 Leicester Dr, Kennesaw, GA 30144	Noonday Creek	8/30/2005	2 story w/o basement	$ 216,007.48	908.20	903.77	-4.43	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 138,773.35	0.0%
88	1033-0123	Acquisition	361 Sumter Dr, Marietta, GA 30066	Noonday Creek	8/30/2005	2 story w/o basement	$ 179,344.42	916.60	911.61	-4.99	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 165,337.99	0.0%
90	1033-0123	Acquisition	160 Drury Lane, Kennesaw, GA 30144	Noonday Creek	8/30/2005	2 story w/o basement	$ 187,268.83	910.40	903.44	-6.96	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 143,839.25	0.0%
91	1033-0123	Acquisition	167 Hyde Park, Kennesaw, GA 30144	Noonday Creek	8/30/2005	2 story w/o basement	$ 184,549.22	912.10	903.50	-8.60	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 153,960.87	0.0%
92	1033-0123	Acquisition	2975 Leasa Ct, Marietta, GA 30066	Little Noonday Creek	8/30/2005	2 story w/o basement	$ 244,605.64	949.00	944.61	-4.39	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 175,096.84	0.0%
93	1033-0123	Acquisition	2985 Leasa Ct, Marietta, GA 30066	Little Noonday Creek	8/30/2005	2 story w/o basement	$ 247,488.19	943.70	943.73	0.03	$ 23,476.45	$ 12,662.92	$ 161.36	$ 6,515.17	$ 797.35	$ -	$ 43,613.25	$ 159,997.29	27.3%
94	1033-0123	Acquisition	2991 Leasa Ct, Marietta, GA 30066	Little Noonday Creek	8/30/2005	2 story w/o basement	$ 246,561.66	945.00	943.22	-1.78	$ 1,613.55	$ 537.85	$ -	$ 2,543.13	$ 54.07	$ 600.00	$ 5,348.59	$ 167,445.63	3.2%
95	1033-0123	Acquisition	2995 Leasa Ct, Marietta, GA 30066	Little Noonday Creek	8/30/2005	2 story w/o basement	$ 239,458.21	945.00	942.64	-2.36	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 174,575.16	0.0%
96	1033-0123	Acquisition	3005 Leasa Ct, Marietta, GA 30066	Little Noonday Creek	8/30/2005	2 story w/o basement	$ 246,664.61	944.50	942.13	-2.37	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 161,556.52	0.0%
97	1033-0123	Acquisition	3015 Leasa Ct, Marietta, GA 30066	Little Noonday Creek	8/30/2005	2 story w/o basement	$ 280,423.93	944.00	941.41	-2.59	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 158,110.57	0.0%
98	1033-0123	Acquisition	3025 Leasa Ct, Marietta, GA 30066	Little Noonday Creek	8/30/2005	2 story w/o basement	$ 242,535.95	943.00	940.76	-2.24	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 159,327.81	0.0%
99	1033-0123	Acquisition	3035 Leasa Ct, Marietta, GA 30066	Little Noonday Creek	8/30/2005	2 story w/o basement	$ 242,535.95	943.00	940.10	-2.90	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 178,632.62	0.0%
100	1033-0123	Acquisition	3055 Leasa Ct, Marietta, GA 30066	Little Noonday Creek	8/30/2005	2 story w/o basement	$ 249,799.93	943.00	938.96	-4.04	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 160,605.91	0.0%
101	1033-0123	Acquisition	3065 Leasa Ct, Marietta, GA 30066	Little Noonday Creek	8/30/2005	2 story w/o basement	$ 293,990.74	941.00	938.15	-2.85	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 173,071.01	0.0%
102	1033-0123	Acquisition	3075 Leasa Ct, Marietta, GA 30066	Little Noonday Creek	8/30/2005	2 story w/o basement	$ 280,286.11	941.00	937.08	-3.92	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 172,198.65	0.0%
103	1033-0123	Acquisition	3084 Leasa Ct, Marietta, GA 30066	Little Noonday Creek	8/30/2005	2 story w/o basement	$ 279,029.22	940.00	936.26	-3.74	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 158,585.88	0.0%
104	1033-0123	Acquisition	3085 Leasa Ct, Marietta, GA 30066	Little Noonday Creek	8/30/2005	2 story w/o basement	$ 271,015.62	940.00	935.86	-4.14	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 168,141.19	0.0%
105	1033-0123	Acquisition	3094 Leasa Ct, Marietta, GA 30066	Little Noonday Creek	8/30/2005	2 story w/o basement	$ 279,657.67	940.00	935.92	-4.08	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 161,431.89	0.0%
106	1033-0123	Acquisition	3095 Leasa Ct, Marietta, GA 30066	Little Noonday Creek	8/30/2005	2 story w/o basement	$ 283,009.37	940.00	935.03	-4.97	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 193,167.02	0.0%
107	1033-0123	Acquisition	3105 Leasa Ct, Marietta, GA 30066	Little Noonday Creek	8/30/2005	2 story w/o basement	$ 250,699.53	939.00	934.57	-4.43	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 161,142.08	0.0%
108	1033-0123	Acquisition	2900 Rio Montana Dr, Marietta, GA 30066	Morgan Lake Tributary	8/30/2005	1 story w/o basement	$ 100,936.70	950.17	944.12	-6.05	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 148,142.47	0.0%
109	1033-0123	Acquisition	2910 Rio Montana Dr, Marietta, GA 30066	Morgan Lake Tributary	8/30/2005	1 story w/o basement	$ 100,936.70	950.16	943.60	-6.56	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 143,479.87	0.0%
110	1033-0123	Acquisition	2920 Rio Montana Dr, Marietta, GA 30066	Morgan Lake Tributary	8/30/2005	2 story w/o basement	$ 212,420.51	947.73	943.01	-4.72	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 179,934.41	0.0%
111	1033-0123	Acquisition	2930 Rio Montana Dr, Marietta, GA 30066	Morgan Lake Tributary	8/30/2005	2 story w/o basement	$ 209,627.66	948.45	942.50	-5.95	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 184,299.07	0.0%
112	1033-0123	Acquisition	2950 Rio Montana Dr, Marietta, GA 30066	Morgan Lake Tributary	8/30/2005	2 story w/o basement	$ 209,956.23	945.81	941.29	-4.52	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 199,039.24	0.0%
113	1033-0123	Acquisition	2970 Rio Montana Dr, Marietta, GA 30066	Morgan Lake Tributary	8/30/2005	2 story w/o basement	$ 205,849.11	944.09	939.98	-4.11	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 192,010.56	0.0%

Table C.4 (part 2 of 2)

Summary of Losses Avoided and ROI Calculations for Cobb County, August 2008 Event

No.	Disaster/ Proj No	Project Type	Address	Flooding Source	Mitigation Completion Date	Building Type	BRV (2010$)	FFE (ft, NGVD29)	WSE for Event (ft, NGVD29)	Final Flood Depth (ft)	Building Damage ($)	Contents Damage ($)	Displacement Cost ($)	Disruption Cost ($)	Debris Removal Services ($)	Reduced Insurance Transaction Cost ($)	Total Losses Avoided ($)	Total Project Investment (2010$)	ROI
114	1033-0123	Acquisition	3005 Rio Montana Dr, Marietta, GA 30066	Morgan Lake Tributary	8/30/2005	1 story w/o basement	$ 135,346.94	947.79	938.91	-8.88	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 193,980.17	0.0%
115	1033-0123	Acquisition	3015 Rio Montana Dr, Marietta, GA 30066	Morgan Lake Tributary	8/30/2005	1 story w/o basement	$ 134,964.61	949.26	938.56	-10.70	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 177,850.03	0.0%
133	1560-0006	Acquisition	3464 Hopkins Road, Powder Springs, GA 30127	Wildhorse Creek	7/24/2006	1 story w/o basement	$ 119,735.44	901.60	893.02	-8.58	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 165,925.32	0.0%
138	1560-0006	Acquisition	3420 Hopkins Court, Powder Springs, GA 30127	Wildhorse Creek	8/23/2006	1 story w/o basement	$ 102,601.91	901.47	892.99	-8.48	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 158,266.80	0.0%
132	1560-0006	Acquisition	3474 Hopkins Road, Powder Springs, GA 30127	Wildhorse Creek	10/30/2007	1 story w/o basement	$ 122,499.96	900.60	893.03	-7.57	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 47,846.88	0.0%
134	1560-0006	Acquisition	3484 Hopkins Road, Powder Springs, GA 30127	Wildhorse Creek	10/30/2007	1 story w/o basement	$ 119,735.44	901.10	893.01	-8.09	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 149,609.08	0.0%
135	1560-0006	Acquisition	3494 Hopkins Road, Powder Springs, GA 30127	Wildhorse Creek	10/30/2007	1 story w/o basement	$ 97,647.86	901.60	893.01	-8.59	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 77,870.46	0.0%
136	1560-0006	Acquisition	3504 Hopkins Road, Powder Springs, GA 30127	Wildhorse Creek	10/30/2007	1 story w/o basement	$ 117,617.76	902.00	893.01	-8.99	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 167,611.21	0.0%
137	1560-0006	Acquisition	3415 Hopkins Court, Powder Springs, GA 30127	Wildhorse Creek	10/30/2007	1 story w/o basement	$ 88,109.81	902.12	892.92	-9.20	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 130,881.38	0.0%
152	FMA-2006-PJ6	Acquisition	3020 Rio Montana Dr, Marietta, GA 30066	Morgan Lake Tributary	1/8/2008	Split level w/o basement	$ 97,928.73	946.00	937.89	-8.11	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 177,194.17	0.0%
153	FMA-2006-PJ6	Acquisition	2980 Rio Montana Dr, Marietta, GA 30066	Morgan Lake Tributary	1/8/2008	Split level w/o basement	$ 94,822.23	944.00	939.51	-4.49	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 182,528.91	0.0%
129	1560-0006	Acquisition	3434 Hopkins Road, Powder Springs, GA 30127	Wildhorse Creek	3/25/2008	1 story w/o basement	$ 153,260.91	903.10	893.04	-10.06	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 129,297.72	0.0%
130	1560-0006	Acquisition	3444 Hopkins Road, Powder Springs, GA 30127	Wildhorse Creek	4/14/2008	1 story w/o basement	$ 96,950.85	903.30	893.02	-10.28	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 125,945.27	0.0%
131	1560-0006	Acquisition	3454 Hopkins Road, Powder Springs, GA 30127	Wildhorse Creek	4/14/2008	1 story w/o basement	$ 119,735.44	902.10	893.03	-9.07	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 57,478.24	0.0%
116	1554-0006	Acquisition	3425 Hopkins Court, Powder Springs, GA 30127	Wildhorse Creek	7/1/2008	1 story w/o basement	$ 86,815.40	899.57	892.92	-6.65	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 124,304.38	0.0%
117	1554-0006	Acquisition	3435 Hopkins Court, Powder Springs, GA 30127	Wildhorse Creek	7/1/2008	1 story w/o basement	$ 92,035.65	898.65	892.91	-5.74	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 86,016.63	0.0%
118	1554-0006	Acquisition	3445 Hopkins Court, Powder Springs, GA 30127	Wildhorse Creek	7/1/2008	1 story w/o basement	$ 92,035.65	899.40	892.91	-6.49	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 125,732.56	0.0%
119	1554-0006	Acquisition	3565 Hopkins Road, Powder Springs, GA 30127	Wildhorse Creek	7/1/2008	1 story w/o basement	$ 92,035.65	901.65	892.88	-8.77	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 96,465.47	0.0%
120	1554-0006	Acquisition	3575 Hopkins Road, Powder Springs, GA 30127	Wildhorse Creek	7/1/2008	1 story w/o basement	$ 92,035.65	898.85	892.83	-6.02	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 34,945.09	0.0%
121	1554-0006	Acquisition	4781 Mitchell Lane, Austell, GA 30106	Noses Creek	7/1/2008	1 story w/o basement	$ 94,344.15	887.25	882.09	-5.16	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 57,922.54	0.0%
122	1554-0006	Acquisition	4798 Mitchell Lane, Austell, GA 30106	Noses Creek	7/1/2008	1 story w/o basement	$ 143,008.72	889.25	882.04	-7.21	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 50,782.10	0.0%
123	1554-0006	Acquisition	4825 Mitchell Lane, Austell, GA 30106	Noses Creek	7/1/2008	1 story w/o basement	$ 91,211.65	888.32	881.82	-6.50	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 42,455.89	0.0%
124	1554-0006	Acquisition	3192 Clay Rd, Austell, GA 30106	Noses Creek	7/1/2008	1 story w/o basement	$ 69,760.87	889.15	882.30	-6.85	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 38,521.87	0.0%
125	1554-0006	Acquisition	5288 Flint Hill Rd, Austell, GA 30106	Sweetwater Creek	7/1/2008	1 story w/o basement	$ 156,396.00	891.35								$ -	$ -	$ 146,955.56	0.0%
127	1554-0006	Acquisition	4810 Mitchell Lane, Austell, GA 30106	Noses Creek	7/1/2008	2 story w/o basement	$ 350,703.67	883.09	881.44	-1.65	$ 3,717.73	$ 1,239.24	$ -	$ 2,725.58	$ 194.99	$ -	$ 7,877.55	$ 106,896.56	7.4%
128	1554-0006	Acquisition	2981 Clay Rd, Austell, GA 30106	Noses Creek	7/1/2008	1 story w/o basement	$ 133,471.52	891.35	882.29	-9.06	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 59,794.98	0.0%
										TOTAL	$ 28,807.73	$ 14,440.01	$ 161.36	$ 11,783.88	$ 1,046.41	$ 600.00	$ 56,839.39	$ 8,628,622.12	0.66%

BRV = building replacement value
FFE = first floor elevation
ft = feet
NGVD29 = National Geodetic Vertical Datum of 1929
ROI = Return on Investment
WSE = water surface elevation

Table C.5 (part 1 of 2)

Summary of Losses Avoided and ROI Calculations for Cobb County, September 2009 Event

No.	Disaster/ Proj No	Project Type	Address	Flooding Source	Mitigation Completion Date	Building Type	BRV (2010$)	FFE (ft, NGVD29)	WSE for Event (ft, NGVD29)	Final Flood Depth (ft)	Building Damage ($)	Contents Damage ($)	Displacement Cost ($)	Disruption Cost ($)	Debris Removal Services ($)	Reduced Insurance Transaction Cost ($)	Total Losses Avoided ($)	Total Project Investment (2010$)	ROI
198	FMA-2002-PJ1	Acquisition	3045 Leasa Ct, Marietta, GA 30066	Little Noonday Creek	5/12/2004	2 story w/o basement	$ 247,277.71	942.00	943.62	1.62	$ 46,338.70	$ 26,887.50	$ 8,464.13	$ 10,677.09	$ 1,611.02	$ 2,196.79	$ 96,175.23	$ 170,990.68	56.2%
199	FMA-2002-PJ2	Acquisition	3104 Leasa Ct, Marietta, GA 30066	Little Noonday Creek	5/12/2004	2 story w/o basement	$ 238,298.64	939.00	940.61	1.61	$ 44,439.69	$ 25,778.30	$ 8,076.62	$ 10,636.26	$ 1,543.45	$ -	$ 90,474.31	$ 168,632.42	53.7%
200	FMA-2001-PJ8	Acquisition	3115 Leasa Ct, Marietta, GA 30066	Little Noonday Creek	5/12/2004	Split level w/o basement	$ 262,915.43	939.00	940.17	1.17	$ 26,297.90	$ 13,624.10	$ 6,507.43	$ 6,747.49	$ 912.36	$ 1,400.00	$ 55,489.27	$ 186,543.21	29.7%
79	1033-0123	Acquisition	161 Drury Ln, Kennesaw, GA 30144	Noonday Creek	8/30/2005	2 story w/o basement	$ 184,711.96	905.50	916.69	11.19	$ 184,711.96	$ 62,147.99	$ 49,939.53	$ 28,879.40	$ 7,542.00	$ -	$ 333,220.88	$ 166,682.74	199.9%
80	1033-0123	Acquisition	169 Hyde Park Ct NE, Kennesaw, GA 30144	Noonday Creek	8/30/2005	2 story w/o basement	$ 177,613.20	905.70	916.76	11.06	$ 177,613.20	$ 59,470.95	$ 42,428.17	$ 28,727.63	$ 6,480.00	$ 5,452.94	$ 320,172.89	$ 124,085.22	258.0%
81	1033-0123	Acquisition	159 Drury Lane, Kennesaw, GA 30144	Noonday Creek	8/30/2005	1 story w/o basement	$ 130,841.72	905.80	916.68	10.88	$ 130,841.72	$ 51,166.13	$ 30,739.99	$ 36,059.61	$ 4,773.60	$ -	$ 253,581.06	$ 117,861.23	215.2%
84	1033-0123	Acquisition	2919 Hidden Forest Ct, Marietta, GA 30066	Noonday Creek	8/30/2005	3 story w/o basement	$ 222,257.52	934.50	942.25	7.75	$ 106,330.11	$ 61,973.37	$ 33,005.76	$ 23,765.74	$ 3,333.33	$ 3,870.98	$ 232,279.29	$ 163,443.51	142.1%
85	1033-0123	Acquisition	157 Drury Lane, Kennesaw, GA 30144	Noonday Creek	8/30/2005	Split level w/o basement	$ 242,496.76	907.10	916.68	9.58	$ 242,496.76	$ 106,127.24	$ 44,615.68	$ 29,189.29	$ 7,866.00	$ -	$ 430,294.97	$ 142,117.73	302.8%
86	1033-0123	Acquisition	162 Drury Lane, Kennesaw, GA 30144	Noonday Creek	8/30/2005	2 story w/o basement	$ 276,894.90	907.40	916.71	9.31	$ 276,894.90	$ 85,343.55	$ 51,749.54	$ 26,271.65	$ 9,396.00	$ 7,607.01	$ 457,262.66	$ 143,282.95	319.1%
87	1033-0123	Acquisition	3997 Leicester Dr, Kennesaw, GA 30144	Noonday Creek	8/30/2005	2 story w/o basement	$ 216,007.48	908.20	916.92	8.72	$ 216,007.48	$ 64,303.79	$ 35,745.18	$ 25,363.93	$ 6,926.40	$ -	$ 348,346.78	$ 138,773.35	251.0%
88	1033-0123	Acquisition	361 Sumter Dr, Marietta, GA 30066	Noonday Creek	8/30/2005	2 story w/o basement	$ 179,344.42	916.60	919.79	3.19	$ 48,900.21	$ 28,817.58	$ 13,630.36	$ 14,512.00	$ 1,908.58	$ 2,331.53	$ 110,100.25	$ 165,337.99	66.6%
90	1033-0123	Acquisition	160 Drury Lane, Kennesaw, GA 30144	Noonday Creek	8/30/2005	2 story w/o basement	$ 187,268.83	910.40	916.73	6.33	$ 78,800.85	$ 46,232.93	$ 28,635.66	$ 21,174.25	$ 3,123.62	$ 3,000.00	$ 180,967.30	$ 143,839.25	125.8%
91	1033-0123	Acquisition	167 Hyde Park, Kennesaw, GA 30144	Noonday Creek	8/30/2005	2 story w/o basement	$ 184,549.22	912.10	916.76	4.66	$ 63,835.61	$ 37,575.78	$ 30,031.09	$ 17,806.01	$ 3,686.28	$ -	$ 152,934.77	$ 153,960.87	99.3%
92	1033-0123	Acquisition	2975 Leasa Ct, Marietta, GA 30066	Little Noonday Creek	8/30/2005	2 story w/o basement	$ 244,605.64	949.00	949.89	0.89	$ 35,574.28	$ 20,273.68	$ 4,498.64	$ 8,789.90	$ 1,210.22	$ 1,675.44	$ 72,022.15	$ 175,096.84	41.1%
93	1033-0123	Acquisition	2985 Leasa Ct, Marietta, GA 30066	Little Noonday Creek	8/30/2005	2 story w/o basement	$ 247,488.19	943.70	948.80	5.10	$ 90,719.92	$ 53,367.41	$ 26,126.82	$ 18,735.32	$ 3,090.88	$ -	$ 192,040.35	$ 159,997.29	120.0%
94	1033-0123	Acquisition	2991 Leasa Ct, Marietta, GA 30066	Little Noonday Creek	8/30/2005	2 story w/o basement	$ 246,561.66	945.00	948.16	3.16	$ 66,900.30	$ 39,425.64	$ 16,140.68	$ 14,452.27	$ 2,279.26	$ 3,000.00	$ 142,198.15	$ 167,445.63	84.9%
95	1033-0123	Acquisition	2995 Leasa Ct, Marietta, GA 30066	Little Noonday Creek	8/30/2005	2 story w/o basement	$ 239,458.21	945.00	947.44	2.44	$ 55,730.01	$ 32,687.00	$ 12,088.61	$ 12,716.23	$ 1,896.86	$ -	$ 115,118.71	$ 174,575.16	65.9%
96	1033-0123	Acquisition	3005 Leasa Ct, Marietta, GA 30066	Little Noonday Creek	8/30/2005	2 story w/o basement	$ 246,664.61	944.50	946.81	2.31	$ 55,648.70	$ 32,596.07	$ 11,778.53	$ 12,395.60	$ 1,895.51	$ 2,647.34	$ 116,961.75	$ 161,556.52	72.4%
97	1033-0123	Acquisition	3015 Leasa Ct, Marietta, GA 30066	Little Noonday Creek	8/30/2005	2 story w/o basement	$ 280,423.93	944.00	945.92	1.92	$ 57,305.20	$ 33,411.39	$ 10,937.08	$ 11,439.74	$ 1,922.63	$ -	$ 115,016.05	$ 158,110.57	72.7%
98	1033-0123	Acquisition	3025 Leasa Ct, Marietta, GA 30066	Little Noonday Creek	8/30/2005	2 story w/o basement	$ 242,535.95	943.00	945.11	2.11	$ 52,120.09	$ 30,463.32	$ 10,802.24	$ 11,913.98	$ 1,811.58	$ 2,477.50	$ 109,588.72	$ 159,327.81	68.8%
99	1033-0123	Acquisition	3035 Leasa Ct, Marietta, GA 30066	Little Noonday Creek	8/30/2005	2 story w/o basement	$ 242,535.95	943.00	944.28	1.28	$ 40,762.90	$ 23,493.79	$ 6,565.37	$ 9,807.89	$ 1,416.09	$ -	$ 82,046.05	$ 178,632.62	45.9%
100	1033-0123	Acquisition	3055 Leasa Ct, Marietta, GA 30066	Little Noonday Creek	8/30/2005	2 story w/o basement	$ 249,799.93	943.00	942.87	-0.13	$ 21,253.65	$ 11,234.29	$ -	$ 6,075.48	$ 736.73	$ 1,175.00	$ 40,475.15	$ 160,605.91	25.2%
101	1033-0123	Acquisition	3065 Leasa Ct, Marietta, GA 30066	Little Noonday Creek	8/30/2005	2 story w/o basement	$ 293,990.74	941.00	942.30	1.30	$ 49,749.43	$ 28,685.95	$ 8,383.21	$ 9,859.69	$ 1,802.30	$ -	$ 98,480.57	$ 173,071.01	56.9%
102	1033-0123	Acquisition	3075 Leasa Ct, Marietta, GA 30066	Little Noonday Creek	8/30/2005	2 story w/o basement	$ 280,286.11	941.00	941.71	0.71	$ 37,746.59	$ 21,339.04	$ 4,026.60	$ 8,305.79	$ 1,265.76	$ 1,772.57	$ 74,456.34	$ 172,198.65	43.2%
103	1033-0123	Acquisition	3084 Leasa Ct, Marietta, GA 30066	Little Noonday Creek	8/30/2005	2 story w/o basement	$ 279,029.22	940.00	941.24	1.24	$ 46,299.30	$ 26,662.21	$ 7,062.40	$ 9,711.66	$ 1,553.33	$ -	$ 91,288.91	$ 158,585.88	57.6%
104	1033-0123	Acquisition	3085 Leasa Ct, Marietta, GA 30066	Little Noonday Creek	8/30/2005	2 story w/o basement	$ 271,015.62	940.00	941.02	1.02	$ 41,482.89	$ 23,755.52	$ 5,616.48	$ 9,133.03	$ 1,390.75	$ 1,957.15	$ 83,335.82	$ 168,141.19	49.6%
105	1033-0123	Acquisition	3094 Leasa Ct, Marietta, GA 30066	Little Noonday Creek	8/30/2005	2 story w/o basement	$ 279,657.67	940.00	941.05	1.05	$ 43,379.71	$ 24,865.50	$ 5,999.27	$ 9,225.35	$ 1,455.24	$ -	$ 84,925.07	$ 161,431.89	52.6%
106	1033-0123	Acquisition	3095 Leasa Ct, Marietta, GA 30066	Little Noonday Creek	8/30/2005	2 story w/o basement	$ 283,009.37	940.00	940.56	0.56	$ 35,634.79	$ 19,992.03	$ 3,211.26	$ 7,911.90	$ 1,194.94	$ 1,668.80	$ 69,613.72	$ 193,167.02	36.0%
107	1033-0123	Acquisition	3105 Leasa Ct, Marietta, GA 30066	Little Noonday Creek	8/30/2005	2 story w/o basement	$ 250,699.53	939.00	940.30	1.30	$ 42,415.79	$ 24,457.02	$ 7,431.34	$ 9,858.28	$ 1,593.66	$ -	$ 85,756.09	$ 161,142.08	53.2%
108	1033-0123	Acquisition	2900 Rio Montana Dr, Marietta, GA 30066	Morgan Lake Tributary	8/30/2005	1 story w/o basement	$ 100,936.70	950.17	949.29	-0.88	$ 3,821.94	$ 3,101.52	$ -	$ 3,951.80	$ 140.09	$ 800.00	$ 11,815.36	$ 148,142.47	8.0%
109	1033-0123	Acquisition	2910 Rio Montana Dr, Marietta, GA 30066	Morgan Lake Tributary	8/30/2005	1 story w/o basement	$ 100,936.70	950.16	948.64	-1.52	$ 1,211.89	$ 1,163.42	$ -	$ 2,788.80	$ 45.38	$ -	$ 5,209.50	$ 143,479.87	3.6%
110	1033-0123	Acquisition	2920 Rio Montana Dr, Marietta, GA 30066	Morgan Lake Tributary	8/30/2005	2 story w/o basement	$ 212,420.51	947.73	947.91	0.18	$ 21,994.61	$ 12,025.46	$ 984.45	$ 6,905.74	$ 938.60	$ 1,175.00	$ 44,023.87	$ 179,934.41	24.5%
111	1033-0123	Acquisition	2930 Rio Montana Dr, Marietta, GA 30066	Morgan Lake Tributary	8/30/2005	2 story w/o basement	$ 209,627.66	948.45	947.27	-1.18	$ 5,175.39	$ 1,725.13	$ -	$ 3,359.19	$ 217.93	$ -	$ 10,477.64	$ 184,299.07	5.7%
112	1033-0123	Acquisition	2950 Rio Montana Dr, Marietta, GA 30066	Morgan Lake Tributary	8/30/2005	2 story w/o basement	$ 209,956.23	945.81	945.77	-0.04	$ 18,962.38	$ 10,140.00	$ -	$ 6,310.85	$ 808.36	$ 1,175.00	$ 37,396.59	$ 199,039.24	18.8%
113	1033-0123	Acquisition	2970 Rio Montana Dr, Marietta, GA 30066	Morgan Lake Tributary	8/30/2005	2 story w/o basement	$ 205,849.11	944.09	944.14	0.05	$ 19,756.59	$ 10,676.64	$ 269.30	$ 6,565.42	$ 842.04	$ -	$ 38,109.99	$ 192,010.56	19.8%

Table C.5 (part 2 of 2)

Summary of Losses Avoided and ROI Calculations for Cobb County, September 2009 Event

No.	Disaster/ Proj No	Project Type	Address	Flooding Source	Mitigation Completion Date	Building Type	BRV (2010$)	FFE (ft, NGVD29)	WSE for Event (ft, NGVD29)	Final Flood Depth (ft)	Building Damage ($)	Contents Damage ($)	Displacement Cost ($)	Disruption Cost ($)	Debris Removal Services ($)	Reduced Insurance Transaction Cost ($)	Total Losses Avoided ($)	Total Project Investment (2010$)	ROI
114	1033-0123	Acquisition	3005 Rio Montana Dr, Marietta, GA 30066	Morgan Lake Tributary	8/30/2005	1 story w/o basement	$ 135,346.94	947.79	942.81	-4.98	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 193,980.17	0.0%
115	1033-0123	Acquisition	3015 Rio Montana Dr, Marietta, GA 30066	Morgan Lake Tributary	8/30/2005	1 story w/o basement	$ 134,964.61	949.26	942.53	-6.73	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 177,850.03	0.0%
133	1560-0006	Acquisition	3464 Hopkins Road, Powder Springs, GA 30127	Wildhorse Creek	7/24/2006	1 story w/o basement	$ 119,735.44	901.60	906.41	4.81	$ 119,735.44	$ 33,785.04	$ 11,276.09	$ 25,659.54	$ 7,099.40	$ -	$ 197,555.51	$ 165,925.32	119.1%
138	1560-0006	Acquisition	3420 Hopkins Court, Powder Springs, GA 30127	Wildhorse Creek	8/23/2006	1 story w/o basement	$ 102,601.91	901.47	906.41	4.94	$ 102,601.91	$ 29,353.57	$ 11,046.97	$ 26,007.16	$ 6,776.70	$ 3,034.98	$ 178,821.28	$ 158,266.80	113.0%
132	1560-0006	Acquisition	3474 Hopkins Road, Powder Springs, GA 30127	Wildhorse Creek	10/30/2007	1 story w/o basement	$ 122,499.96	900.60	906.41	5.81	$ 122,499.96	$ 37,967.65	$ 13,621.54	$ 28,149.59	$ 7,099.40	$ 3,690.76	$ 213,028.90	$ 47,846.88	445.2%
134	1560-0006	Acquisition	3484 Hopkins Road, Powder Springs, GA 30127	Wildhorse Creek	10/30/2007	1 story w/o basement	$ 119,735.44	901.10	906.41	5.31	$ 119,735.44	$ 35,487.68	$ 12,444.95	$ 26,930.20	$ 7,099.40	$ 3,570.13	$ 205,267.81	$ 149,609.08	137.2%
135	1560-0006	Acquisition	3494 Hopkins Road, Powder Springs, GA 30127	Wildhorse Creek	10/30/2007	1 story w/o basement	$ 97,647.86	901.60	906.41	4.81	$ 97,647.86	$ 27,546.62	$ 11,527.54	$ 25,654.02	$ 7,260.75	$ -	$ 169,636.78	$ 77,870.46	217.8%
136	1560-0006	Acquisition	3504 Hopkins Road, Powder Springs, GA 30127	Wildhorse Creek	10/30/2007	1 story w/o basement	$ 117,617.76	902.00	906.41	4.41	$ 58,337.20	$ 31,721.48	$ 11,273.29	$ 24,556.43	$ 3,622.27	$ 2,701.76	$ 132,212.43	$ 167,611.21	78.9%
137	1560-0006	Acquisition	3415 Hopkins Court, Powder Springs, GA 30127	Wildhorse Creek	10/30/2007	1 story w/o basement	$ 88,109.81	902.12	906.40	4.28	$ 43,007.39	$ 23,410.41	$ 9,575.21	$ 24,202.09	$ 3,092.46	$ -	$ 103,287.57	$ 130,881.38	78.9%
152	FMA-2006-PJ6	Acquisition	3020 Rio Montana Dr, Marietta, GA 30066	Morgan Lake Tributary	1/8/2008	Split level w/o basement	$ 97,928.73	946.00	942.15	-3.85	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 177,194.17	0.0%
153	FMA-2006-PJ6	Acquisition	2980 Rio Montana Dr, Marietta, GA 30066	Morgan Lake Tributary	1/8/2008	Split level w/o basement	$ 94,822.23	944.00	943.56	-0.44	$ 6,493.61	$ 2,457.95	$ -	$ 5,328.84	$ 293.08	$ 800.00	$ 15,373.48	$ 182,528.91	8.4%
129	1560-0006	Acquisition	3434 Hopkins Road, Powder Springs, GA 30127	Wildhorse Creek	3/25/2008	1 story w/o basement	$ 153,260.91	903.10	906.41	3.31	$ 64,824.35	$ 35,496.96	$ 7,765.77	$ 21,272.18	$ 2,817.56	$ -	$ 132,176.82	$ 129,297.72	102.2%
130	1560-0006	Acquisition	3444 Hopkins Road, Powder Springs, GA 30127	Wildhorse Creek	4/14/2008	1 story w/o basement	$ 96,950.85	903.30	906.41	3.11	$ 39,633.16	$ 21,728.72	$ 6,403.14	$ 20,634.83	$ 2,369.88	$ 1,840.86	$ 92,610.58	$ 125,945.27	73.5%
131	1560-0006	Acquisition	3454 Hopkins Road, Powder Springs, GA 30127	Wildhorse Creek	4/14/2008	1 story w/o basement	$ 119,735.44	902.10	906.41	4.31	$ 58,673.21	$ 31,929.59	$ 10,104.65	$ 24,288.11	$ 3,262.64	$ -	$ 128,258.20	$ 57,478.24	223.1%
116	1554-0006	Acquisition	3425 Hopkins Court, Powder Springs, GA 30127	Wildhorse Creek	7/1/2008	1 story w/o basement	$ 86,815.40	899.57	906.40	6.83	$ 86,815.40	$ 29,004.09	$ 13,619.39	$ 30,321.84	$ 6,040.94	$ 3,000.00	$ 168,801.67	$ 124,304.38	135.8%
117	1554-0006	Acquisition	3435 Hopkins Court, Powder Springs, GA 30127	Wildhorse Creek	7/1/2008	1 story w/o basement	$ 92,035.65	898.65	906.40	7.75	$ 92,035.65	$ 32,417.68	$ 17,333.82	$ 32,020.98	$ 6,776.70	$ -	$ 180,584.82	$ 86,016.63	209.9%
118	1554-0006	Acquisition	3445 Hopkins Court, Powder Springs, GA 30127	Wildhorse Creek	7/1/2008	1 story w/o basement	$ 92,035.65	899.40	906.40	7.00	$ 92,035.65	$ 31,105.90	$ 15,656.25	$ 30,671.54	$ 6,776.70	$ 3,000.00	$ 179,246.04	$ 125,732.56	142.6%
119	1554-0006	Acquisition	3565 Hopkins Road, Powder Springs, GA 30127	Wildhorse Creek	7/1/2008	1 story w/o basement	$ 92,035.65	901.65	906.40	4.75	$ 92,035.65	$ 25,781.22	$ 10,616.20	$ 25,478.83	$ 6,776.70	$ -	$ 160,688.59	$ 96,465.47	166.6%
120	1554-0006	Acquisition	3575 Hopkins Road, Powder Springs, GA 30127	Wildhorse Creek	7/1/2008	1 story w/o basement	$ 92,035.65	898.85	906.39	7.54	$ 92,035.65	$ 32,053.54	$ 16,868.00	$ 31,646.35	$ 6,776.70	$ 3,000.00	$ 182,380.23	$ 34,945.09	521.9%
121	1554-0006	Acquisition	4781 Mitchell Lane, Austell, GA 30106	Noses Creek	7/1/2008	1 story w/o basement	$ 94,344.15	887.25	905.01	17.76	$ 94,344.15	$ 37,737.66	$ 35,552.30	$ 38,544.43	$ 6,731.52	$ -	$ 212,910.06	$ 57,922.54	367.6%
122	1554-0006	Acquisition	4798 Mitchell Lane, Austell, GA 30106	Noses Creek	7/1/2008	1 story w/o basement	$ 143,008.72	889.25	905.01	15.76	$ 143,008.72	$ 57,203.49	$ 53,082.55	$ 38,490.46	$ 10,203.77	$ 4,604.88	$ 306,593.87	$ 50,782.10	603.7%
123	1554-0006	Acquisition	4825 Mitchell Lane, Austell, GA 30106	Noses Creek	7/1/2008	1 story w/o basement	$ 91,211.65	888.32	905.01	16.69	$ 91,211.65	$ 36,484.66	$ 33,916.14	$ 38,544.43	$ 6,421.73	$ -	$ 206,578.61	$ 42,455.89	486.6%
124	1554-0006	Acquisition	3192 Clay Rd, Austell, GA 30106	Noses Creek	7/1/2008	1 story w/o basement	$ 69,760.87	889.15	905.02	15.87	$ 69,760.87	$ 27,904.35	$ 25,729.15	$ 38,515.20	$ 4,911.49	$ 2,929.96	$ 169,751.02	$ 38,521.87	440.7%
125	1554-0006	Acquisition	5288 Flint Hill Rd, Austell, GA 30106	Sweetwater Creek	7/1/2008	1 story w/o basement	$ 156,396.00	891.35	901.83	10.48	$ 156,396.00	$ 60,656.63	$ 38,602.88	$ 35,716.34	$ 11,158.97	$ -	$ 302,530.81	$ 146,955.56	205.9%
127	1554-0006	Acquisition	4810 Mitchell Lane, Austell, GA 30106	Noses Creek	7/1/2008	2 story w/o basement	$ 350,703.67	883.09	905.01	21.92	$ 350,703.67	$ 130,461.77	$ 100,555.40	$ 33,372.19	$ 19,039.30	$ -	$ 634,132.32	$ 106,896.56	593.2%
128	1554-0006	Acquisition	2981 Clay Rd, Austell, GA 30106	Noses Creek	7/1/2008	1 story w/o basement	$ 133,471.52	891.35	905.02	13.67	$ 133,471.52	$ 53,388.61	$ 42,402.74	$ 37,856.31	$ 9,397.02	$ 4,297.78	$ 280,813.98	$ 59,794.98	469.6%
										TOTAL	$ 4,814,199.57	$ 2,020,076.48	$ 1,034,465.37	$ 1,143,886.16	$ 240,415.89	$ 81,854.15	$ 9,334,897.62	$ 8,628,622.12	108.19%

BRV = building replacement value
FFE = first floor elevation
ft = feet
NGVD29 = National Geodetic Vertical Datum of 1929
ROI = Return on Investment
WSE = water surface elevation

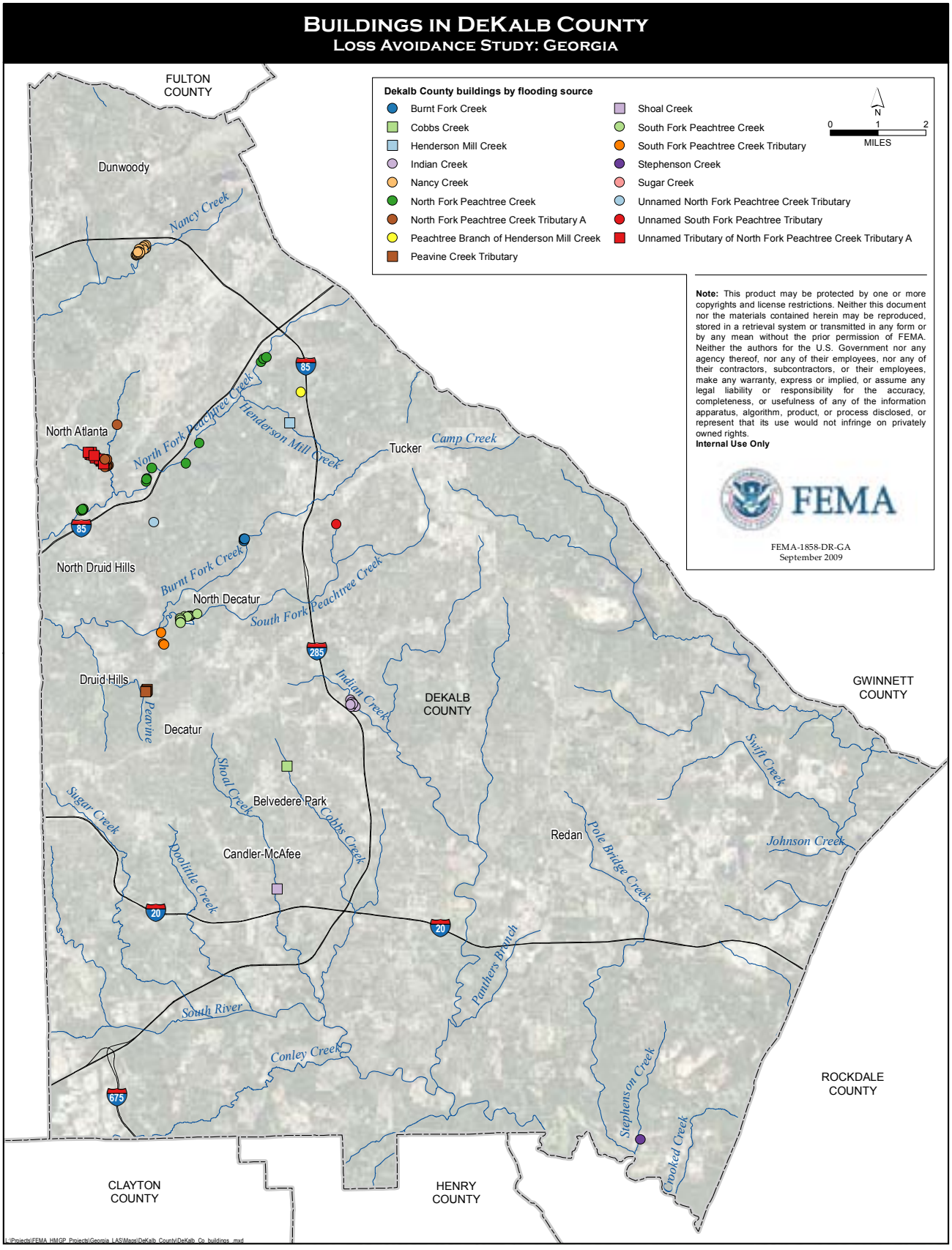
Appendix D

DeKalb County: Summary of Losses Avoided and Return on Investment Calculations

List of Figures and Tables

Note: Event-specific maps depict only buildings that were included in the analysis of that event

Figure D.1


Buildings in DeKalb County
Loss Avoidance Study: Georgia
Dekalb County buildings by flooding source
Burnt Fork Creek
Cobbs Creek
Henderson Mill Creek
Indian Creek
Nancy Creek
North Fork Peachtree Creek
North Fork Peachtree Creek Tributary A
Peachtree Branch of Henderson Mill Creek
Peavine Creek Tributary
Shoal Creek
South Fork Peachtree Creek
South Fork Peachtree Creek Tributary
Stephenson Creek
Sugar Creek
Unnamed North Fork Peachtree Creek Tributary
Unnamed South Fork Peachtree Tributary
Unnamed Tributary of North Fork Peachtree Creek Tributary A
N
0 1 2
MILES
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FEMA
FEMA-1858-DR-GA
September 2009
FULTON COUNTY
Dunwoody
Nancy Creek
North Atlanta
North Fork Peachtree Creek
Henderson Mill Creek
Tucker
Camp Creek
North Druid Hills
Burnt Fork Creek
North Decatur
South Fork Peachtree Creek
Druid Hills
Peavine
Decatur
Indian Creek
DEKALB COUNTY
GWINNETT COUNTY
Shoal Creek
Sugar Creek
Belvedere Park
Cobbs Creek
Swift Creek
Redan
Pole Bridge Creek
Johnson Creek
Candler-McAfee
Doolittle Creek
Panthers Branch
South River
Conley Creek
Stephenson Creek
Crooked Creek
ROCKDALE COUNTY
CLAYTON COUNTY
HENRY COUNTY
85
285
20
675
L:\Projects\FEMA_HMGP_Projects\Georgia_LAS\Maps\DeKalb_County\DeKalb_Co_buildings_mxd

Figure D.2

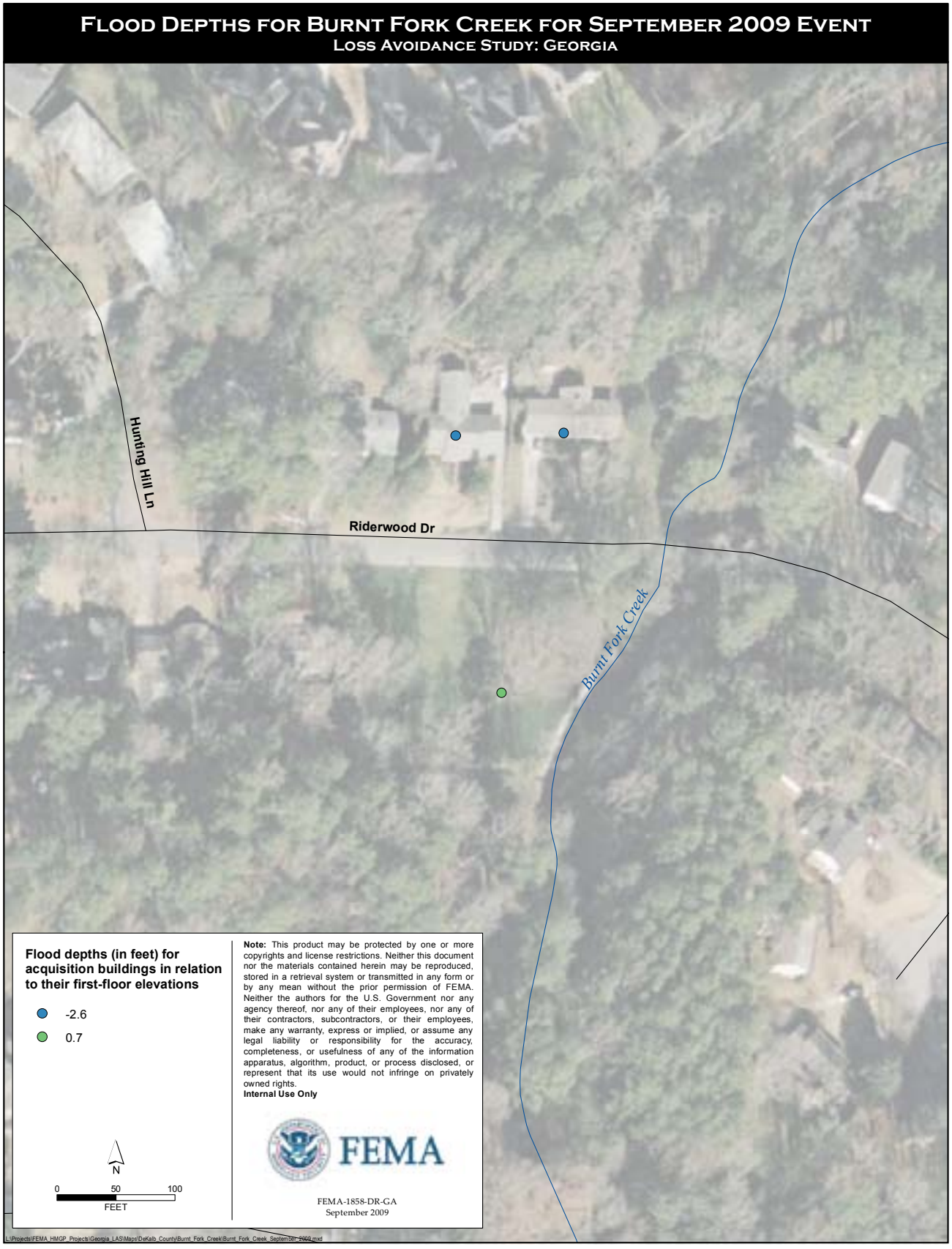
Flood Depths for Burnt Fork Creek for September 2009 Event
Loss Avoidance Study: Georgia
Hunting Hill Ln
Riderwood Dr
Burnt Fork Creek
Flood depths (in feet) for acquisition buildings in relation to their first-floor elevations
-2.6
0.7
N
0
50
100
FEET
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Figure D.3


Flood Depths for Cobbs Creek for September 2004 Event
Loss Avoidance Study: Georgia
Cobbs Creek
Memorial Dr
Betty Cir
Bobbie Ln
Beech Dr
Bonway Dr
Flood depths (in feet) for acquisition buildings in relation to their first-floor elevations
6.9
N
0 50 100
FEET
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Figure D.4


Flood Depths for Henderson Mill Creek for September 2009 Event
Loss Avoidance Study: Georgia
Smoketree Rd
Leslie Dr
Henderson Creek Rd
Wake Robin Trl
Henderson Mill Creek
Flood depths (in feet) for acquisition buildings in relation to their first-floor elevations
-0.5
N
0
50
100
FEET
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Figure D.5

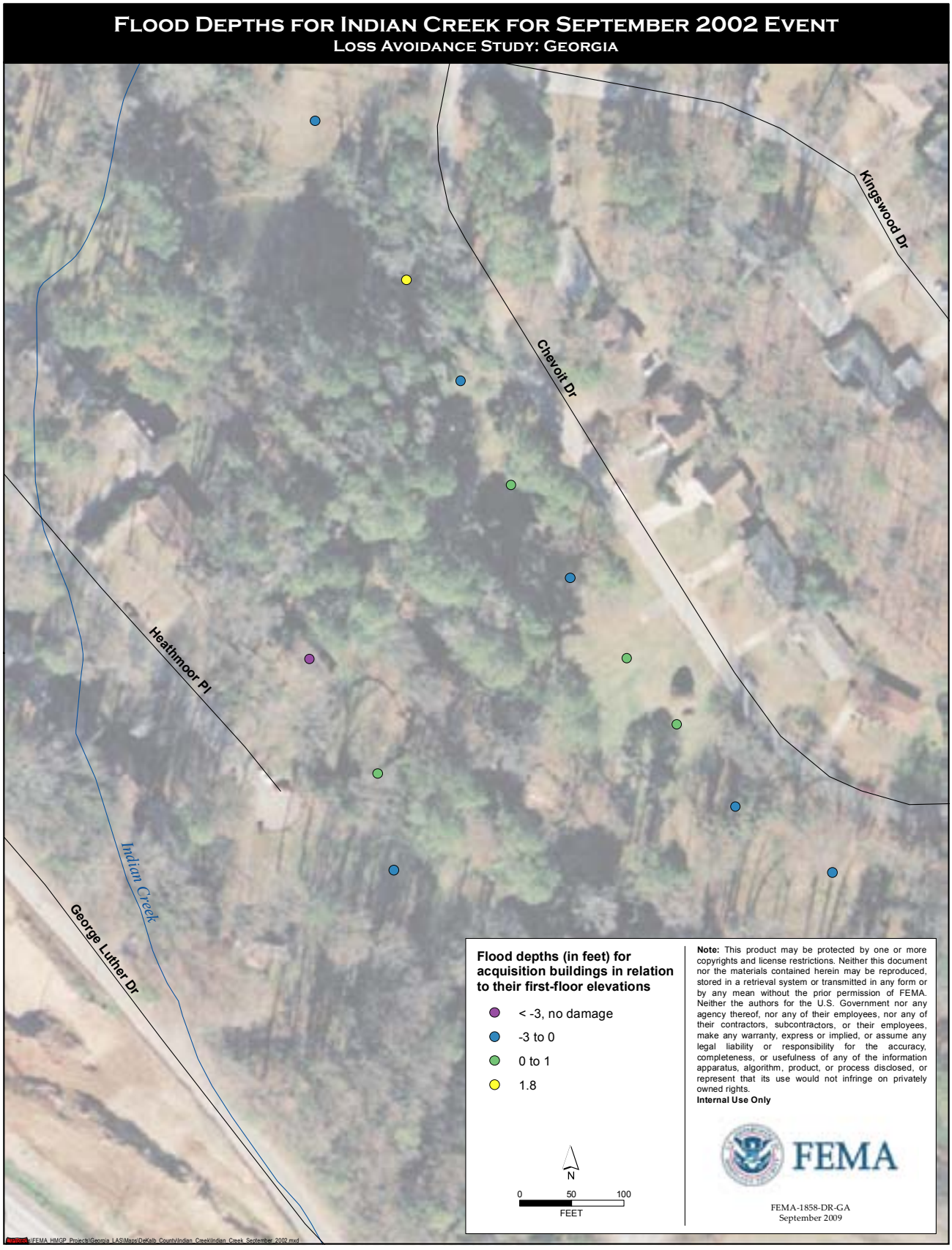
Flood Depths for Indian Creek for September 2002 Event
Loss Avoidance Study: Georgia
Kingswood Dr
Chevoit Dr
Heathmoor Pl
Indian Creek
George Luther Dr
Flood depths (in feet) for acquisition buildings in relation to their first-floor elevations
< -3, no damage
-3 to 0
0 to 1
1.8
N
0
50
100
FEET
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Figure D.6

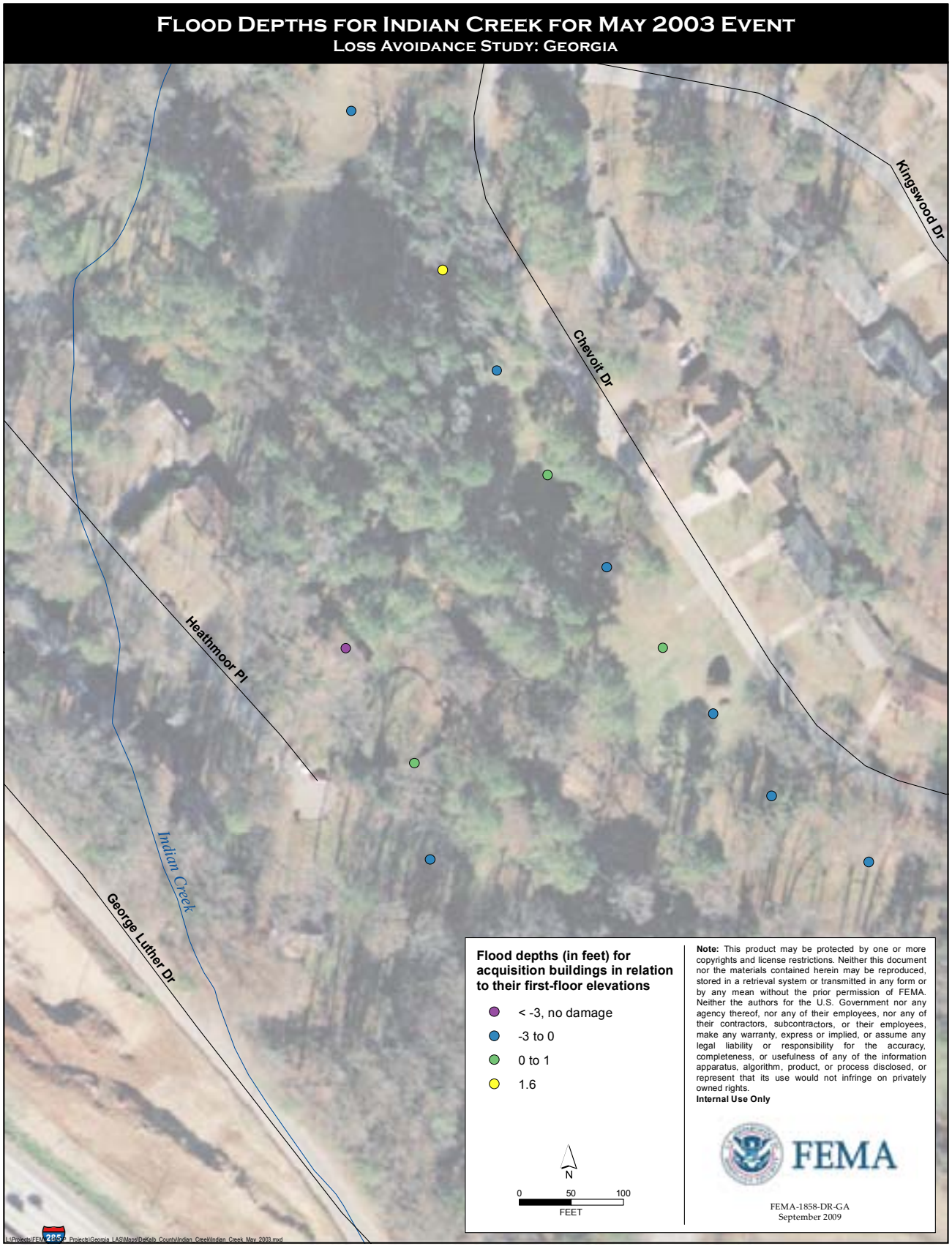
Flood Depths for Indian Creek for May 2003 Event
Loss Avoidance Study: Georgia
Kingswood Dr
Chevoit Dr
Heathmoor Pl
Indian Creek
George Luther Dr
Flood depths (in feet) for acquisition buildings in relation to their first-floor elevations
< -3, no damage
-3 to 0
0 to 1
1.6
N
0 50 100
FEET
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Figure D.7

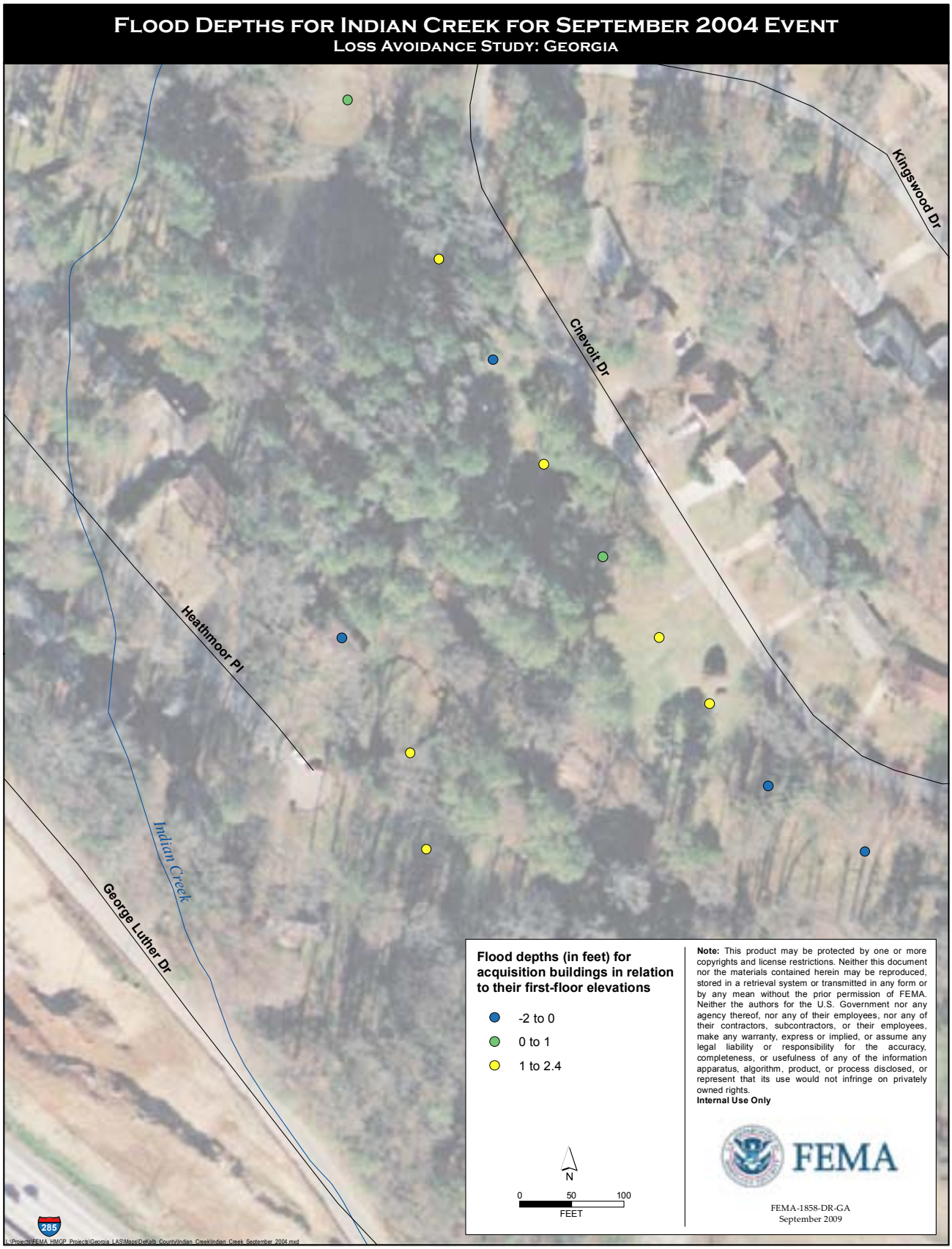
Flood Depths for Indian Creek for September 2004 Event
Loss Avoidance Study: Georgia
Kingswood Dr
Chevoit Dr
Heathmoor Pl
Indian Creek
George Luther Dr
285
Flood depths (in feet) for acquisition buildings in relation to their first-floor elevations
-2 to 0
0 to 1
1 to 2.4
N
0 50 100
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Figure D.8

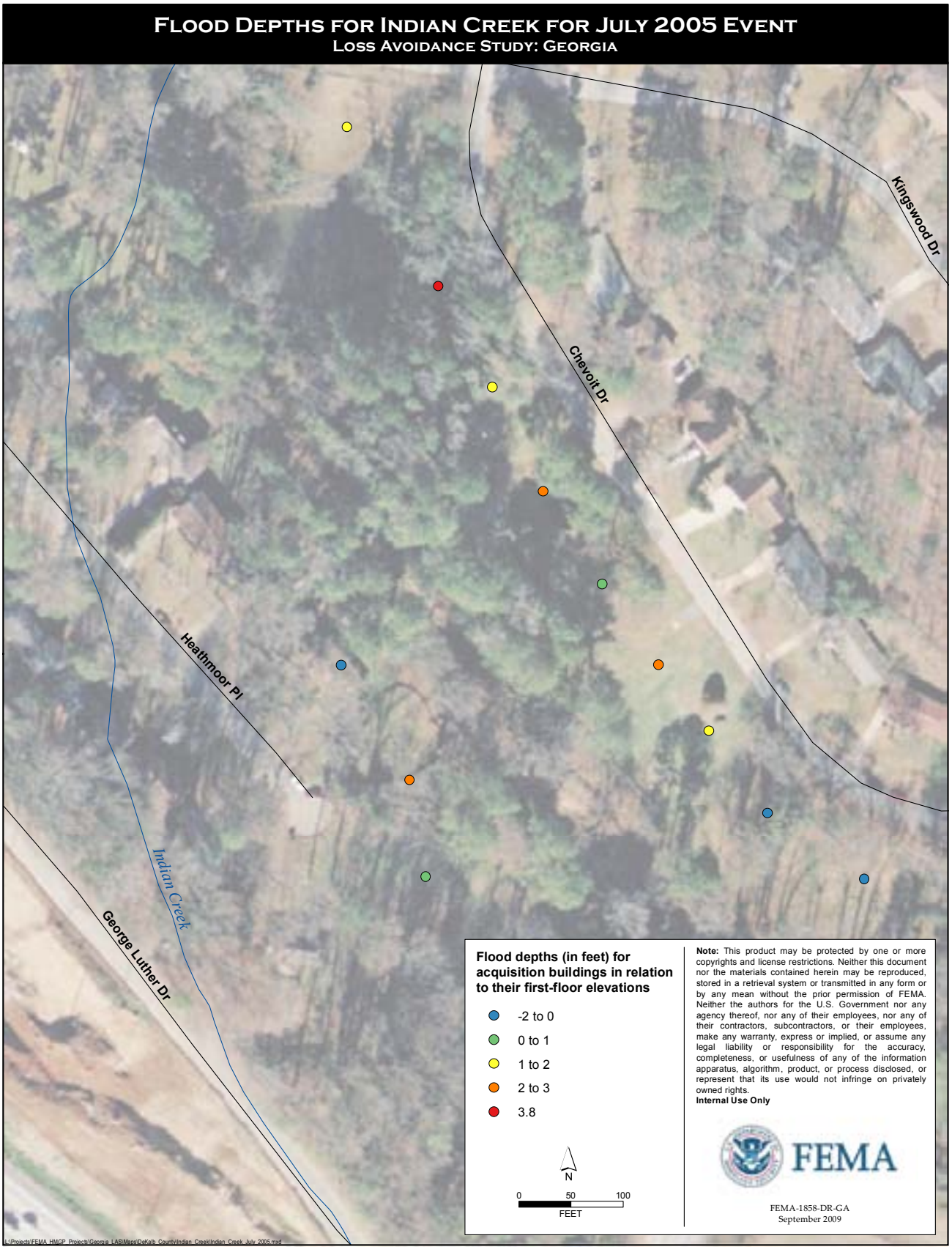
Flood Depths for Indian Creek for July 2005 Event
Loss Avoidance Study: Georgia
Kingswood Dr
Chevoit Dr
Heathmoor Pl
Indian Creek
George Luther Dr
Flood depths (in feet) for acquisition buildings in relation to their first-floor elevations
-2 to 0
0 to 1
1 to 2
2 to 3
3.8
N
0 50 100
FEET
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Figure D.9

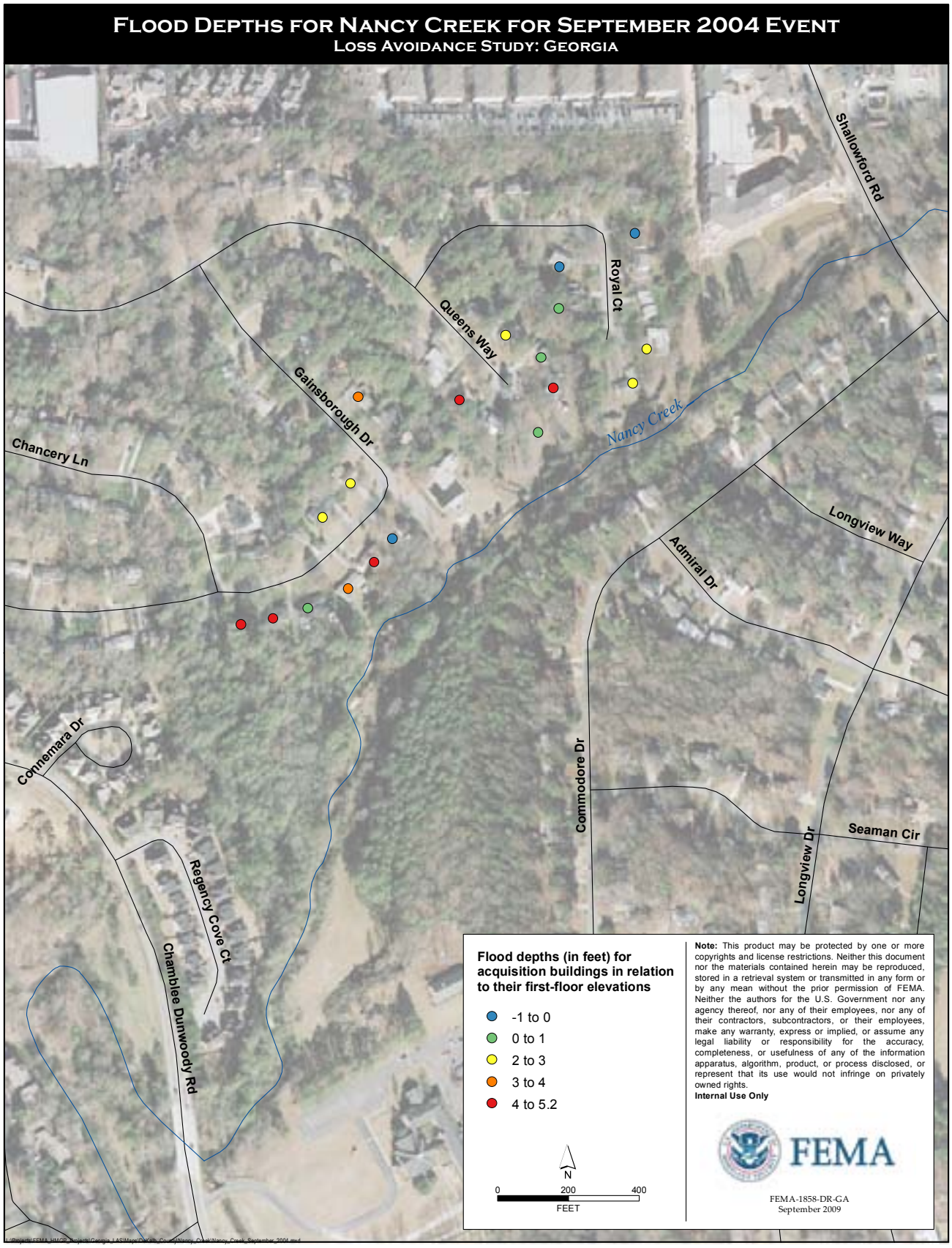
Flood Depths for Nancy Creek for September 2004 Event
Loss Avoidance Study: Georgia
Shallowford Rd
Royal Ct
Queens Way
Gainsborough Dr
Nancy Creek
Chancery Ln
Longview Way
Admiral Dr
Connemara Dr
Commodore Dr
Seaman Cir
Longview Dr
Regency Cove Ct
Chamblee Dunwoody Rd
Flood depths (in feet) for acquisition buildings in relation to their first-floor elevations
-1 to 0
0 to 1
2 to 3
3 to 4
4 to 5.2
N
0
200
400
FEET
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Figure D.10

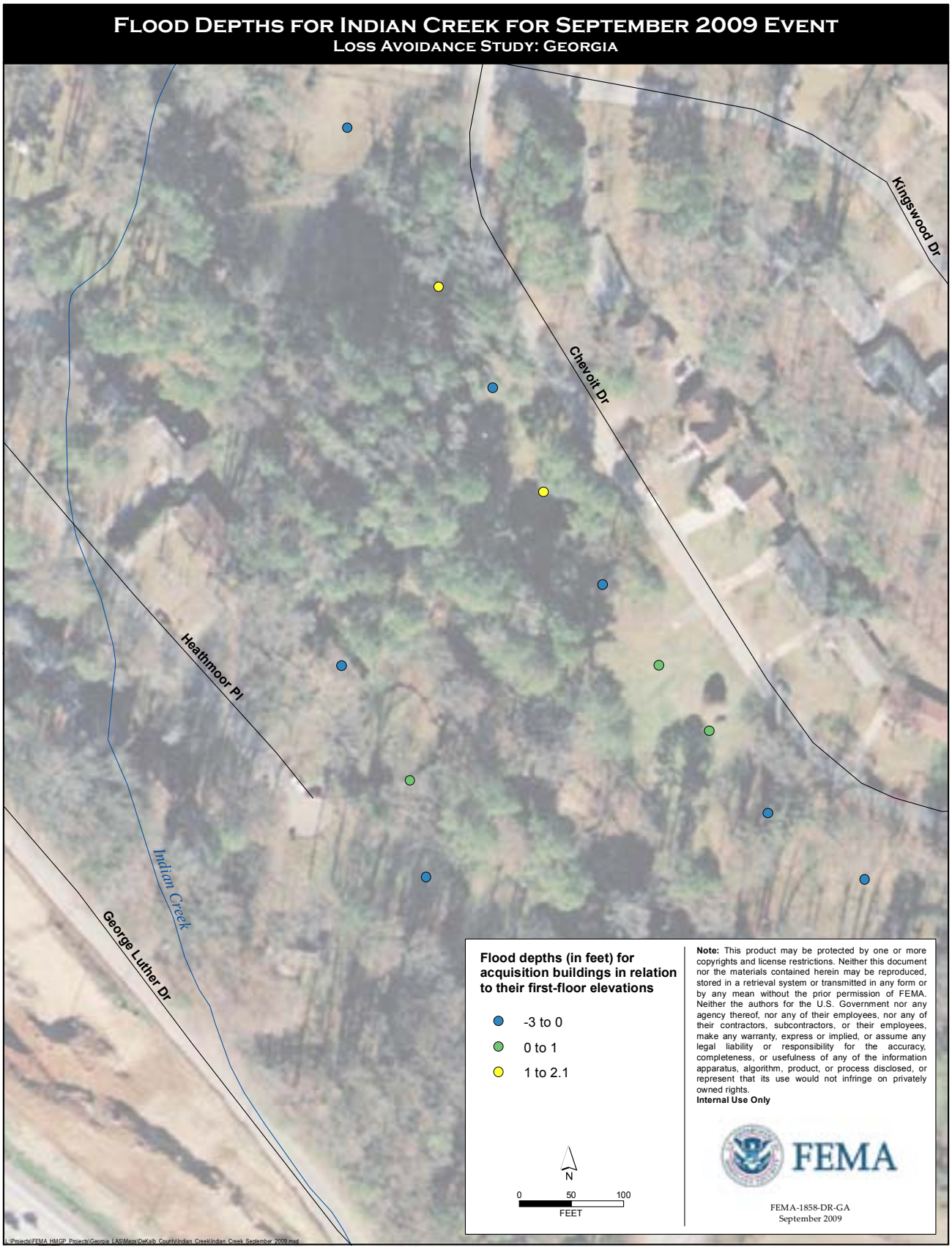
Flood Depths for Indian Creek for September 2009 Event
Loss Avoidance Study: Georgia
Kingswood Dr
Chevoit Dr
Heathmoor Pl
Indian Creek
George Luther Dr
Flood depths (in feet) for acquisition buildings in relation to their first-floor elevations
-3 to 0
0 to 1
1 to 2.1
N
0 50 100
FEET
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Figure D.11

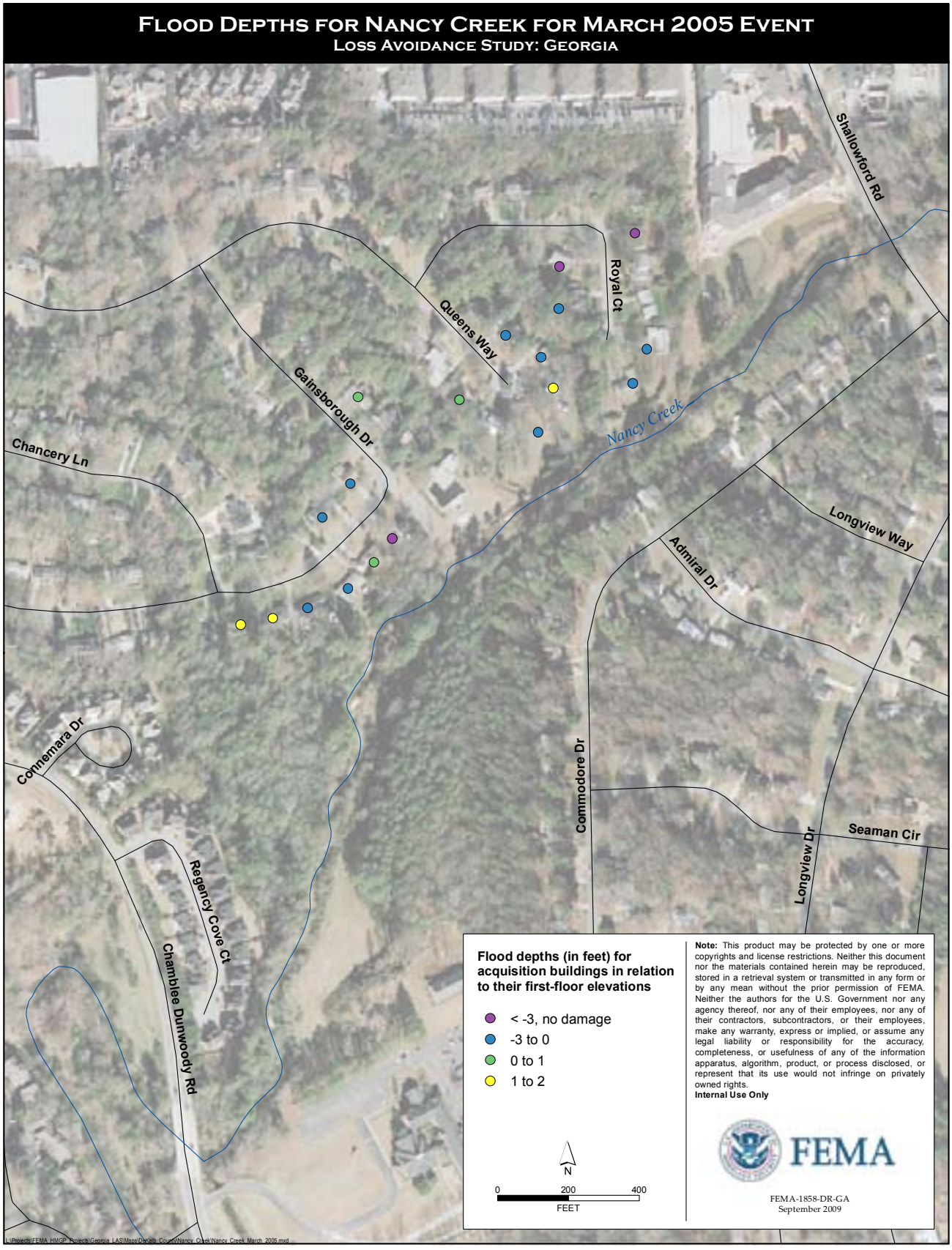
Flood Depths for Nancy Creek for March 2005 Event
Loss Avoidance Study: Georgia
Shallowford Rd
Royal Ct
Queens Way
Gainsborough Dr
Chancery Ln
Nancy Creek
Longview Way
Admiral Dr
Connemara Dr
Commodore Dr
Seaman Cir
Longview Dr
Regency Cove Ct
Chamblee Dunwoody Rd
Flood depths (in feet) for acquisition buildings in relation to their first-floor elevations
< -3, no damage
-3 to 0
0 to 1
1 to 2
N
0
200
400
FEET
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Figure D.12

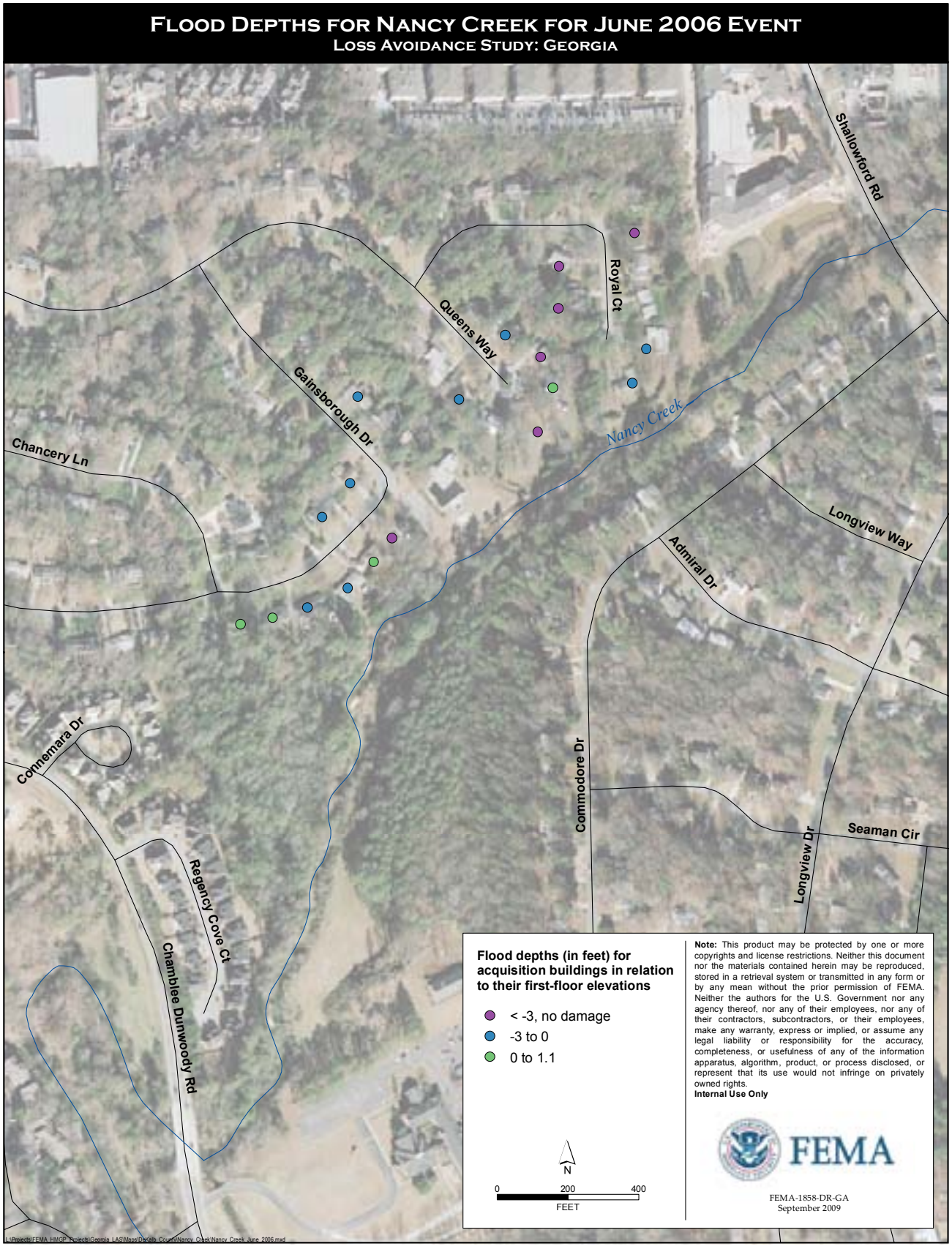
Flood Depths for Nancy Creek for June 2006 Event
Loss Avoidance Study: Georgia
Shallowford Rd
Royal Ct
Queens Way
Gainsborough Dr
Chancery Ln
Nancy Creek
Longview Way
Admiral Dr
Connemara Dr
Commodore Dr
Seaman Cir
Longview Dr
Regency Cove Ct
Chamblee Dunwoody Rd
Flood depths (in feet) for acquisition buildings in relation to their first-floor elevations
< -3, no damage
-3 to 0
0 to 1.1
N
0
200
400
FEET
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Figure D.13

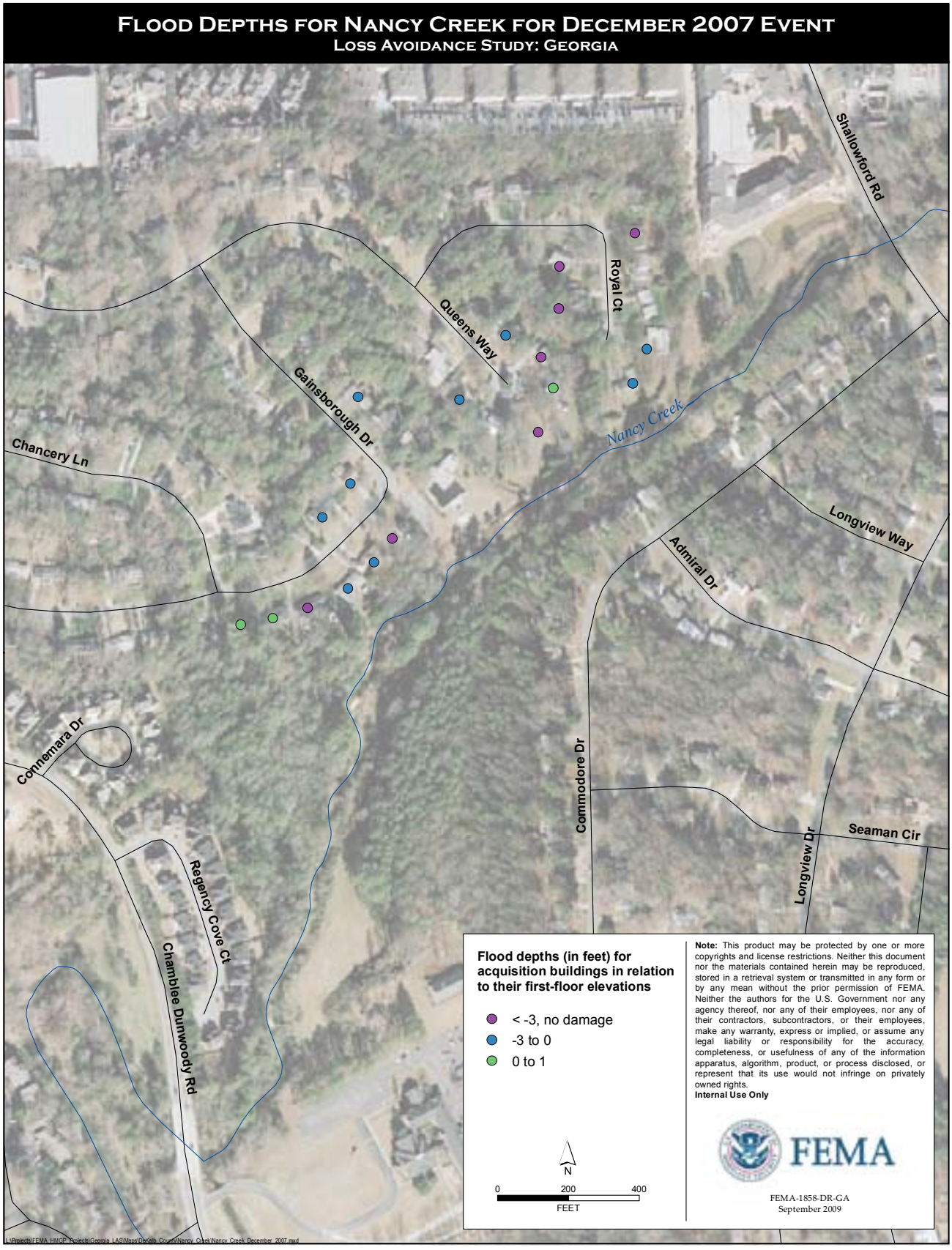
Flood Depths for Nancy Creek for December 2007 Event
Loss Avoidance Study: Georgia
Shallowford Rd
Royal Ct
Queens Way
Gainsborough Dr
Nancy Creek
Chancery Ln
Longview Way
Admiral Dr
Connemara Dr
Commodore Dr
Seaman Cir
Longview Dr
Regency Cove Ct
Chamblee Dunwoody Rd
Flood depths (in feet) for acquisition buildings in relation to their first-floor elevations
< -3, no damage
-3 to 0
0 to 1
N
0
200
400
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Figure D.14

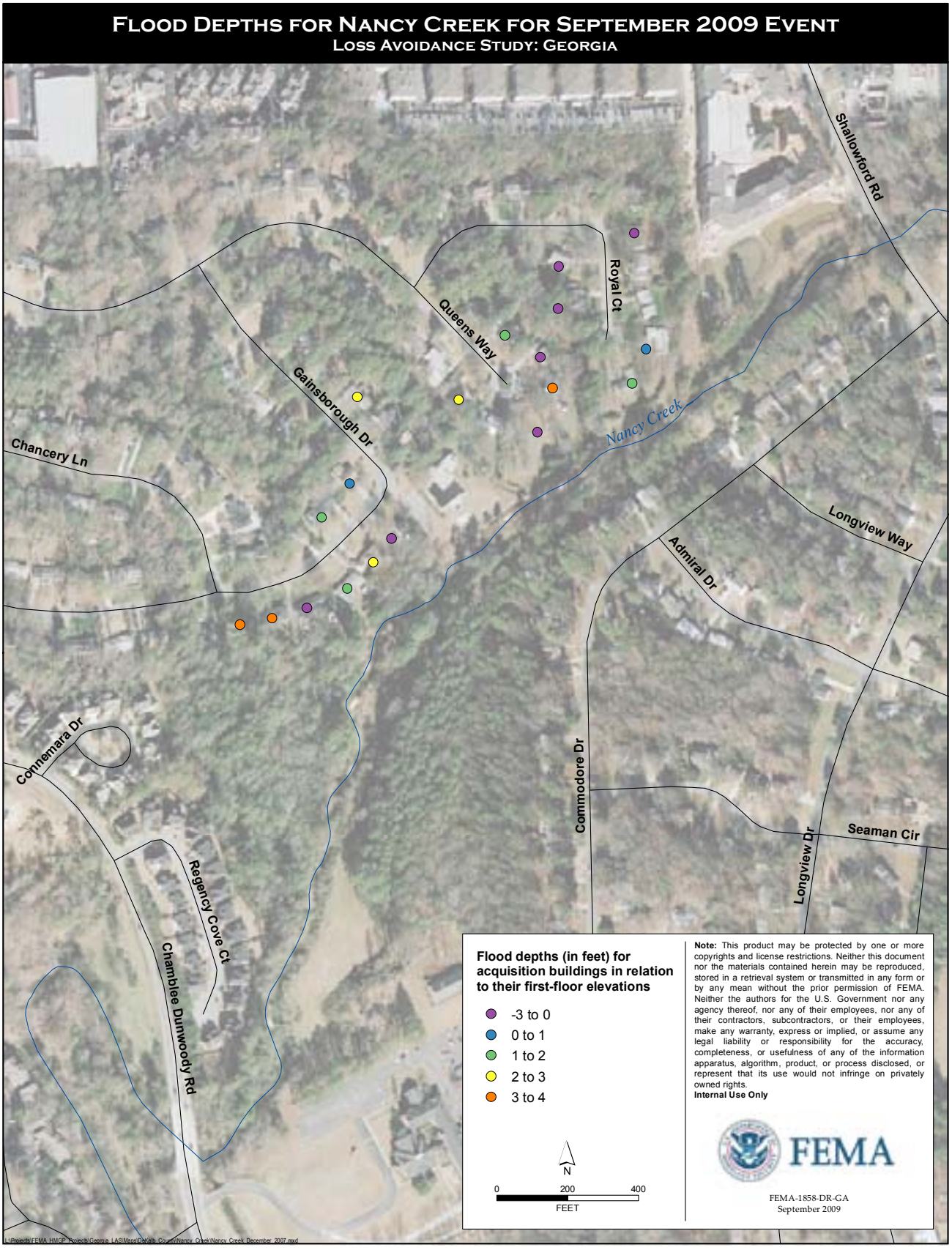
Flood Depths for Nancy Creek for September 2009 Event
Loss Avoidance Study: Georgia
Shallowford Rd
Royal Ct
Queens Way
Gainsborough Dr
Chancery Ln
Nancy Creek
Longview Way
Admiral Dr
Connemara Dr
Commodore Dr
Seaman Cir
Longview Dr
Regency Cove Ct
Chamblee Dunwoody Rd
Flood depths (in feet) for acquisition buildings in relation to their first-floor elevations
-3 to 0
0 to 1
1 to 2
2 to 3
3 to 4
N
0
200
400
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Figure D.15

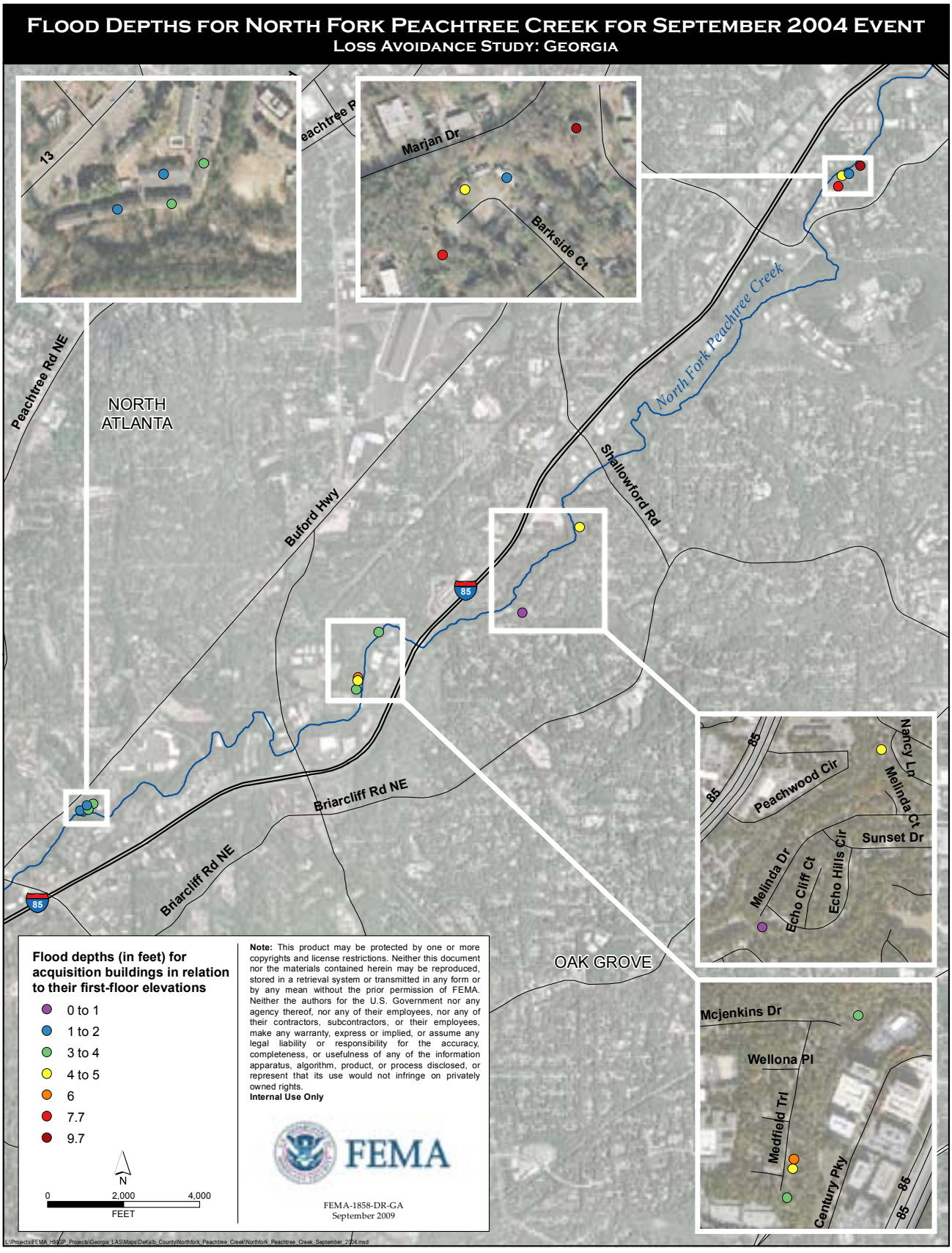
FLOOD DEPTHS FOR NORTH FORK PEACHTREE CREEK FOR SEPTEMBER 2004 EVENT
LOSS AVOIDANCE STUDY: GEORGIA
Marjan Dr
Barkside Ct
13
Peachtree Rd NE
NORTH ATLANTA
North Fork Peachtree Creek
Shallowford Rd
Buford Hwy
85
Briarcliff Rd NE
Briarcliff Rd NE
Peachwood Cir
Nancy Ln
Melinda Ct
Sunset Dr
Melinda Dr
Echo Cliff Ct
Echo Hills Cir
OAK GROVE
Mcjenkins Dr
Wellona Pl
Medfield Trl
Century Pky
Flood depths (in feet) for acquisition buildings in relation to their first-floor elevations
0 to 1
1 to 2
3 to 4
4 to 5
6
7.7
9.7
N
0
2,000
4,000
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Figure D.16

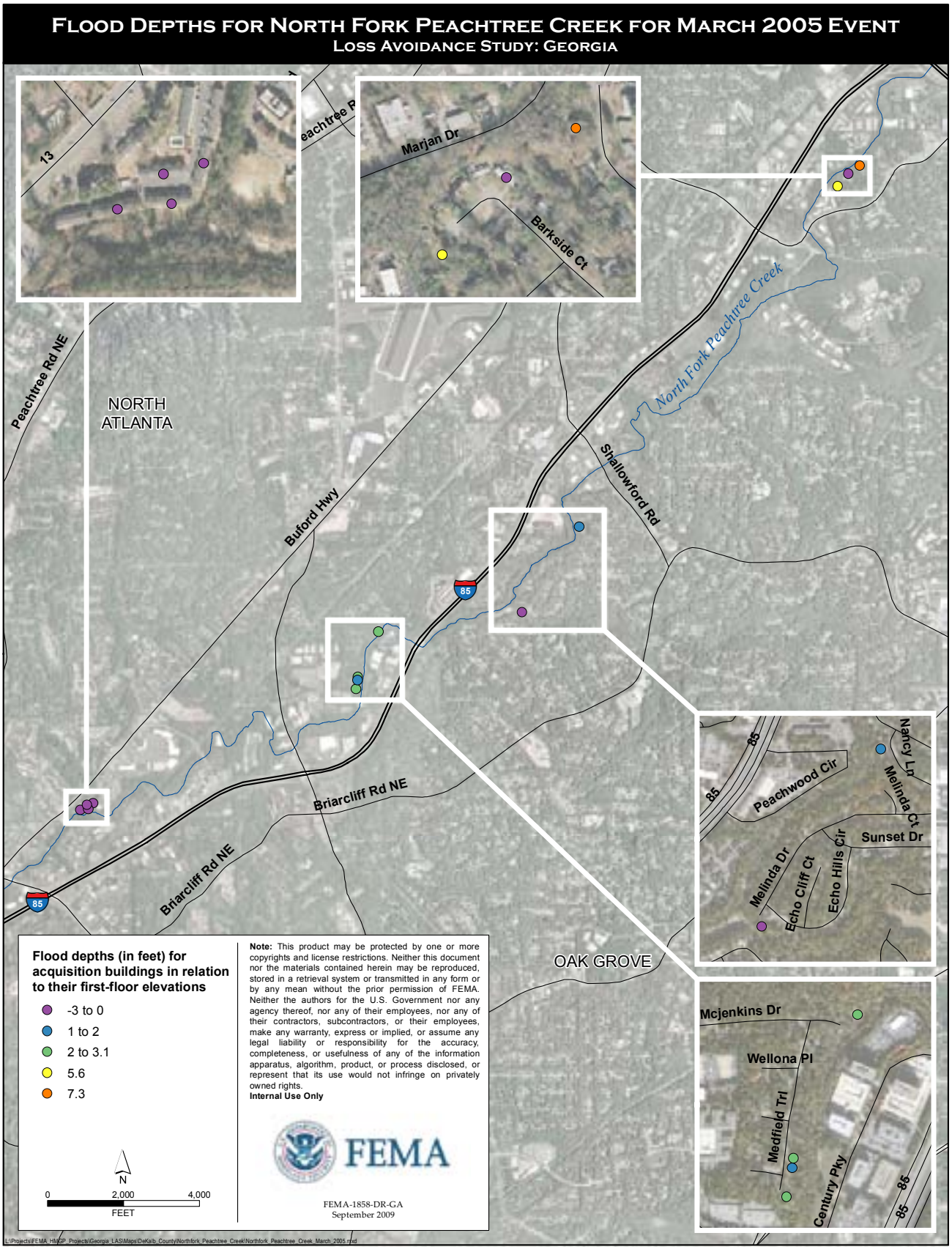
FLOOD DEPTHS FOR NORTH FORK PEACHTREE CREEK FOR MARCH 2005 EVENT
LOSS AVOIDANCE STUDY: GEORGIA
Marjan Dr
Barkside Ct
Peachtree Rd NE
NORTH ATLANTA
North Fork Peachtree Creek
Buford Hwy
Shallowford Rd
Briarcliff Rd NE
Briarcliff Rd NE
85
OAK GROVE
Peachwood Cir
Nancy Ln
Melinda Ct
Sunset Dr
Melinda Dr
Echo Cliff Ct
Echo Hills Cir
Mcjenkins Dr
Wellona Pl
Medfield Trl
Century Pky
Flood depths (in feet) for acquisition buildings in relation to their first-floor elevations
-3 to 0
1 to 2
2 to 3.1
5.6
7.3
N
0
2,000
4,000
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Figure D.17

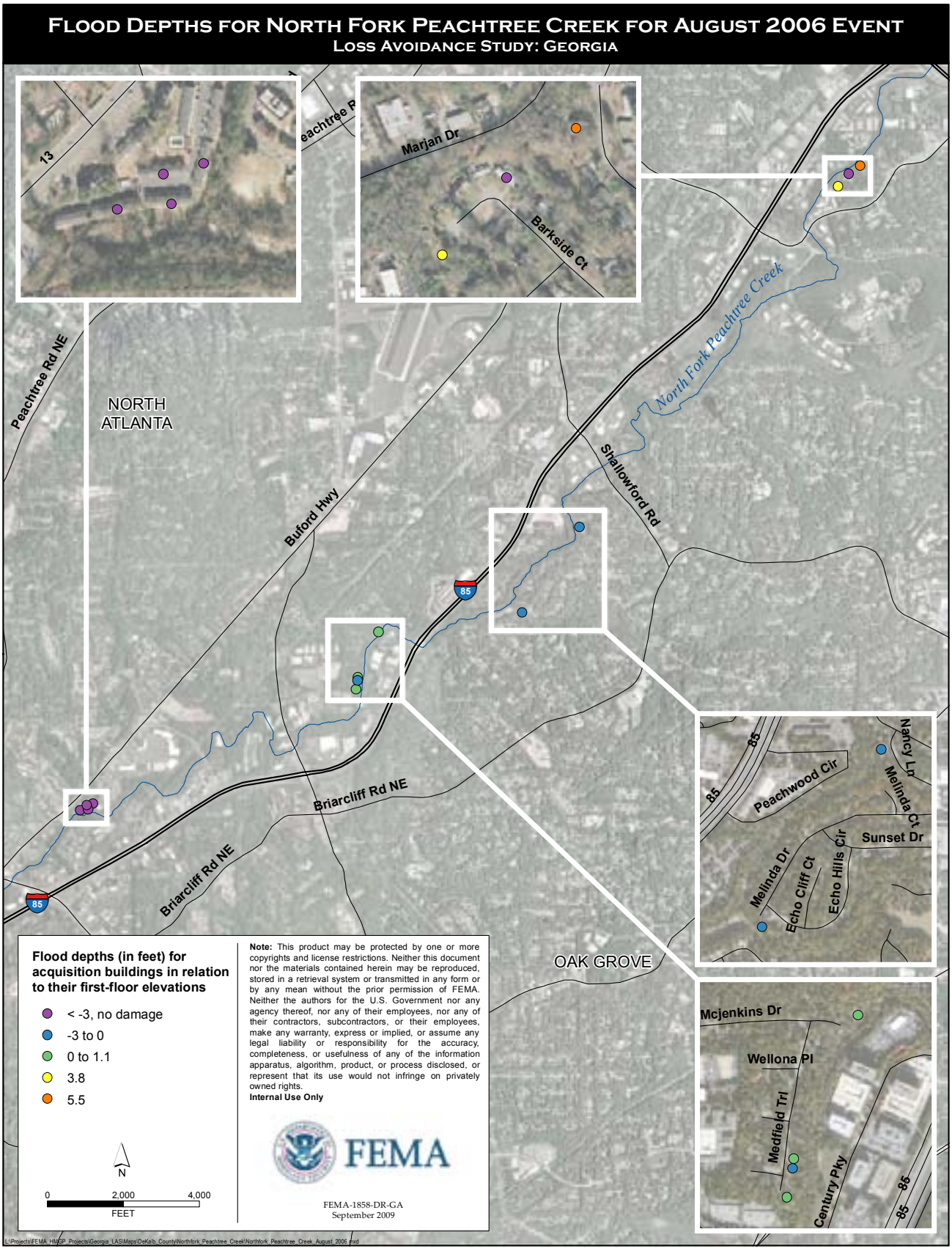
FLOOD DEPTHS FOR NORTH FORK PEACHTREE CREEK FOR AUGUST 2006 EVENT
LOSS AVOIDANCE STUDY: GEORGIA
Marjan Dr
Barkside Ct
13
Peachtree Rd NE
NORTH ATLANTA
Buford Hwy
North Fork Peachtree Creek
Shallowford Rd
85
Briarcliff Rd NE
Briarcliff Rd NE
Peachwood Cir
Nancy Ln
Melinda Ct
Sunset Dr
Melinda Dr
Echo Cliff Ct
Echo Hills Cir
OAK GROVE
Mcjenkins Dr
Wellona Pl
Medfield Trl
Century Pky
Flood depths (in feet) for acquisition buildings in relation to their first-floor elevations
< -3, no damage
-3 to 0
0 to 1.1
3.8
5.5
N
0
2,000
4,000
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Figure D.18

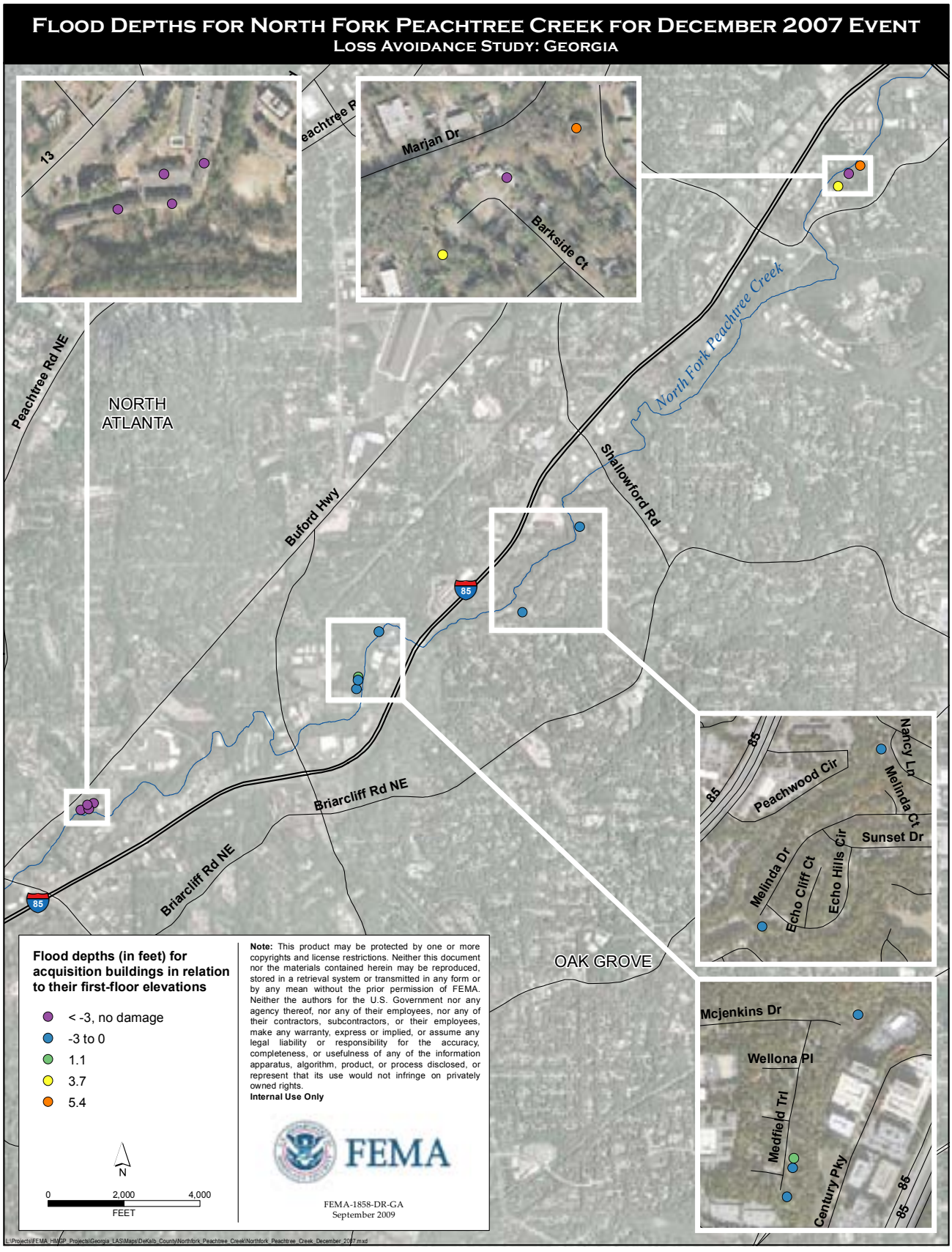
Flood Depths for North Fork Peachtree Creek for December 2007 Event
Loss Avoidance Study: Georgia
Marjan Dr
Barkside Ct
13
Peachtree Rd NE
NORTH ATLANTA
North Fork Peachtree Creek
Shallowford Rd
Buford Hwy
85
Briarcliff Rd NE
Briarcliff Rd NE
OAK GROVE
Peachwood Cir
Nancy Ln
Melinda Ct
Sunset Dr
Melinda Dr
Echo Cliff Ct
Echo Hills Cir
Mcjenkins Dr
Wellona Pl
Medfield Trl
Century Pky
Flood depths (in feet) for acquisition buildings in relation to their first-floor elevations
< -3, no damage
-3 to 0
1.1
3.7
5.4
N
0
2,000
4,000
FEET
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Figure D.19

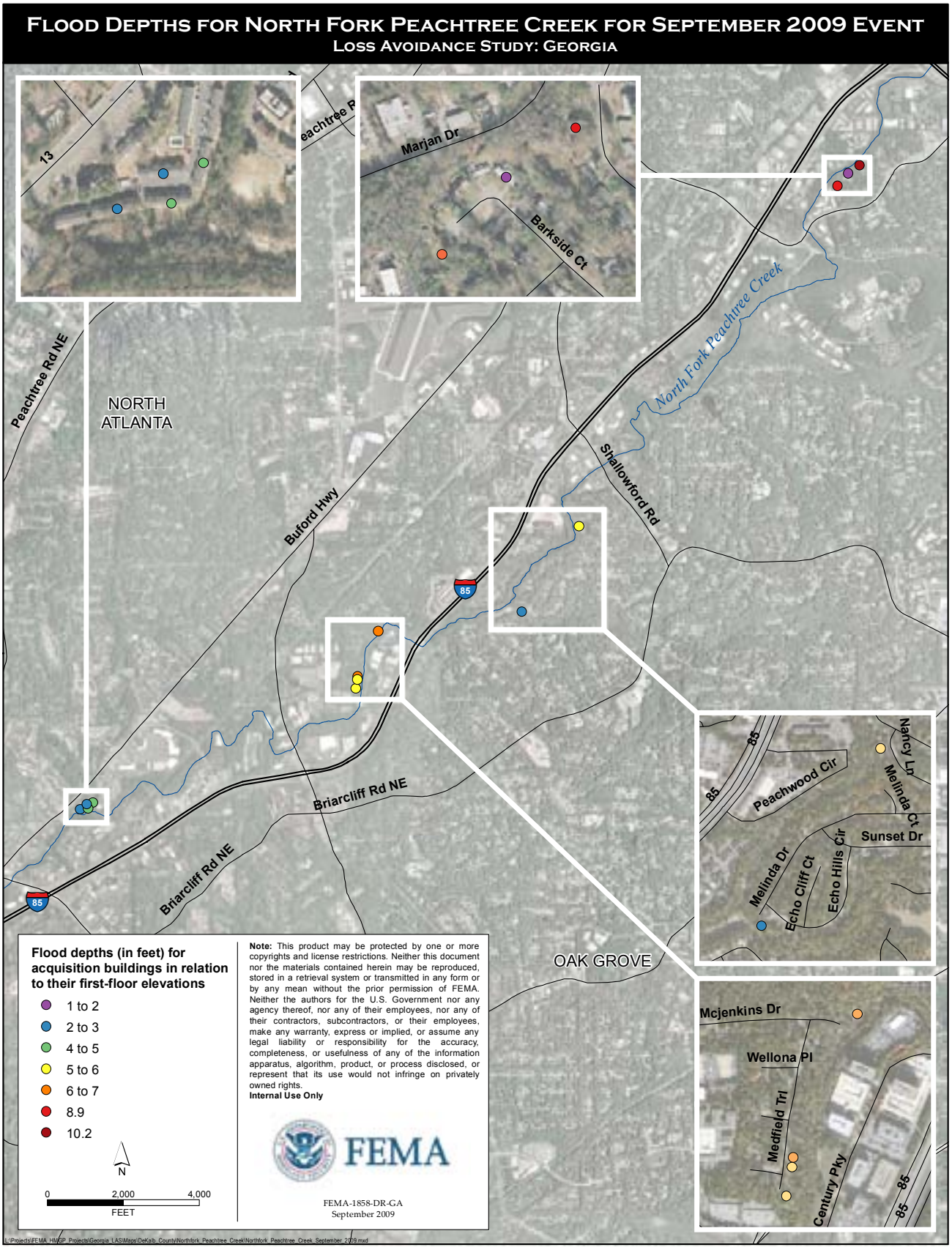
FLOOD DEPTHS FOR NORTH FORK PEACHTREE CREEK FOR SEPTEMBER 2009 EVENT
LOSS AVOIDANCE STUDY: GEORGIA
Marjan Dr
Barkside Ct
Peachtree Rd NE
NORTH ATLANTA
Buford Hwy
Shallowford Rd
North Fork Peachtree Creek
Briarcliff Rd NE
Briarcliff Rd NE
85
OAK GROVE
Peachwood Cir
Nancy Ln
Melinda Ct
Sunset Dr
Melinda Dr
Echo Cliff Ct
Echo Hills Cir
Mcjenkins Dr
Wellona Pl
Medfield Trl
Century Pky
Flood depths (in feet) for acquisition buildings in relation to their first-floor elevations
1 to 2
2 to 3
4 to 5
5 to 6
6 to 7
8.9
10.2
N
0
2,000
4,000
FEET
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Figure D.20

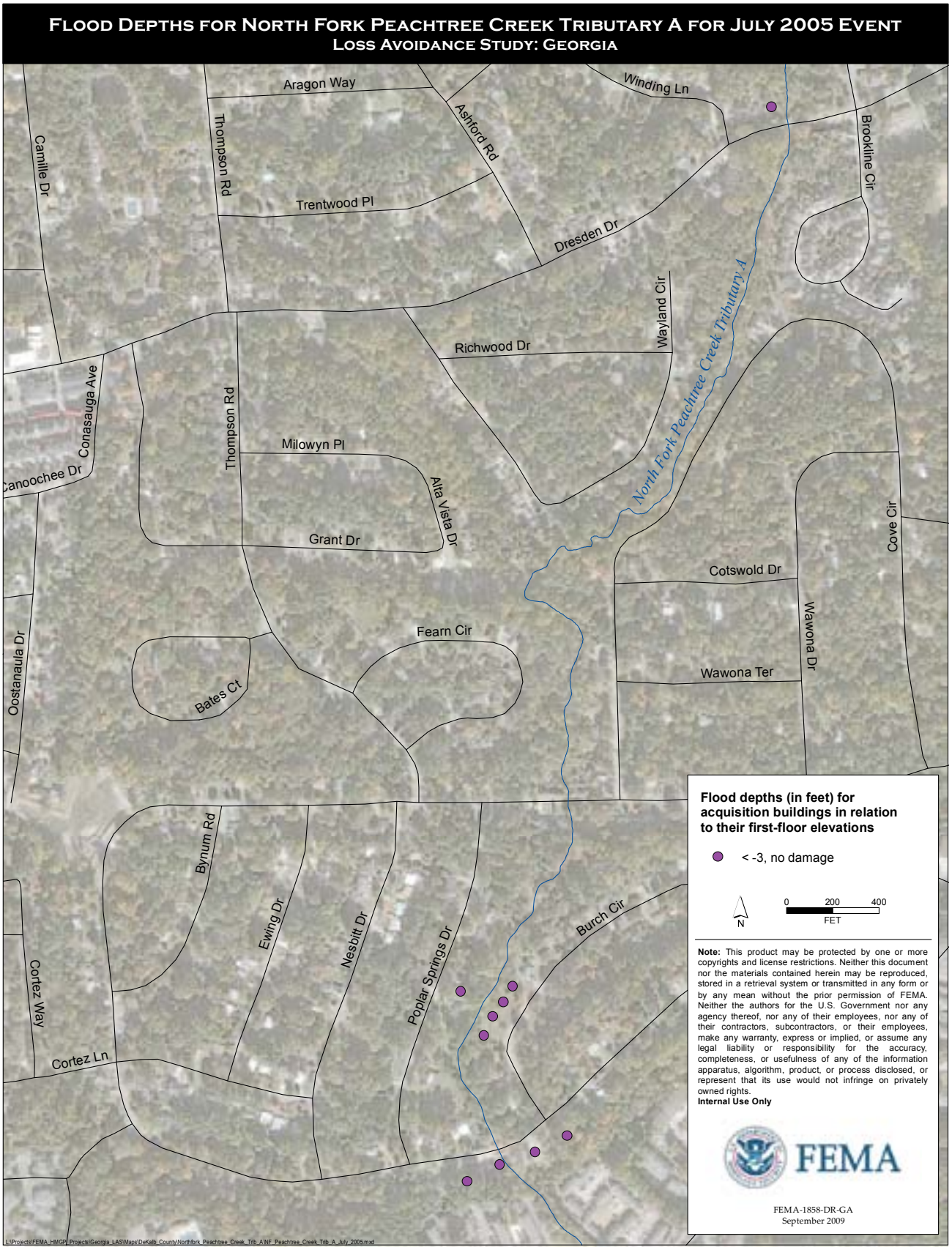
Flood Depths for North Fork Peachtree Creek Tributary A for July 2005 Event
Loss Avoidance Study: Georgia
Aragon Way
Winding Ln
Ashford Rd
Thompson Rd
Camille Dr
Trentwood Pl
Dresden Dr
Brookline Cir
Wayland Cir
Richwood Dr
North Fork Peachtree Creek Tributary A
Conasauga Ave
Thompson Rd
Milowyn Pl
Canoochee Dr
Alta Vista Dr
Grant Dr
Cove Cir
Cotswold Dr
Wawona Dr
Fearn Cir
Oostanaula Dr
Bates Ct
Wawona Ter
Bynum Rd
Ewing Dr
Nesbit Dr
Poplar Springs Dr
Burch Cir
Cortez Way
Cortez Ln
Flood depths (in feet) for acquisition buildings in relation to their first-floor elevations
< -3, no damage
N
0 200 400
FET
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Figure D.21

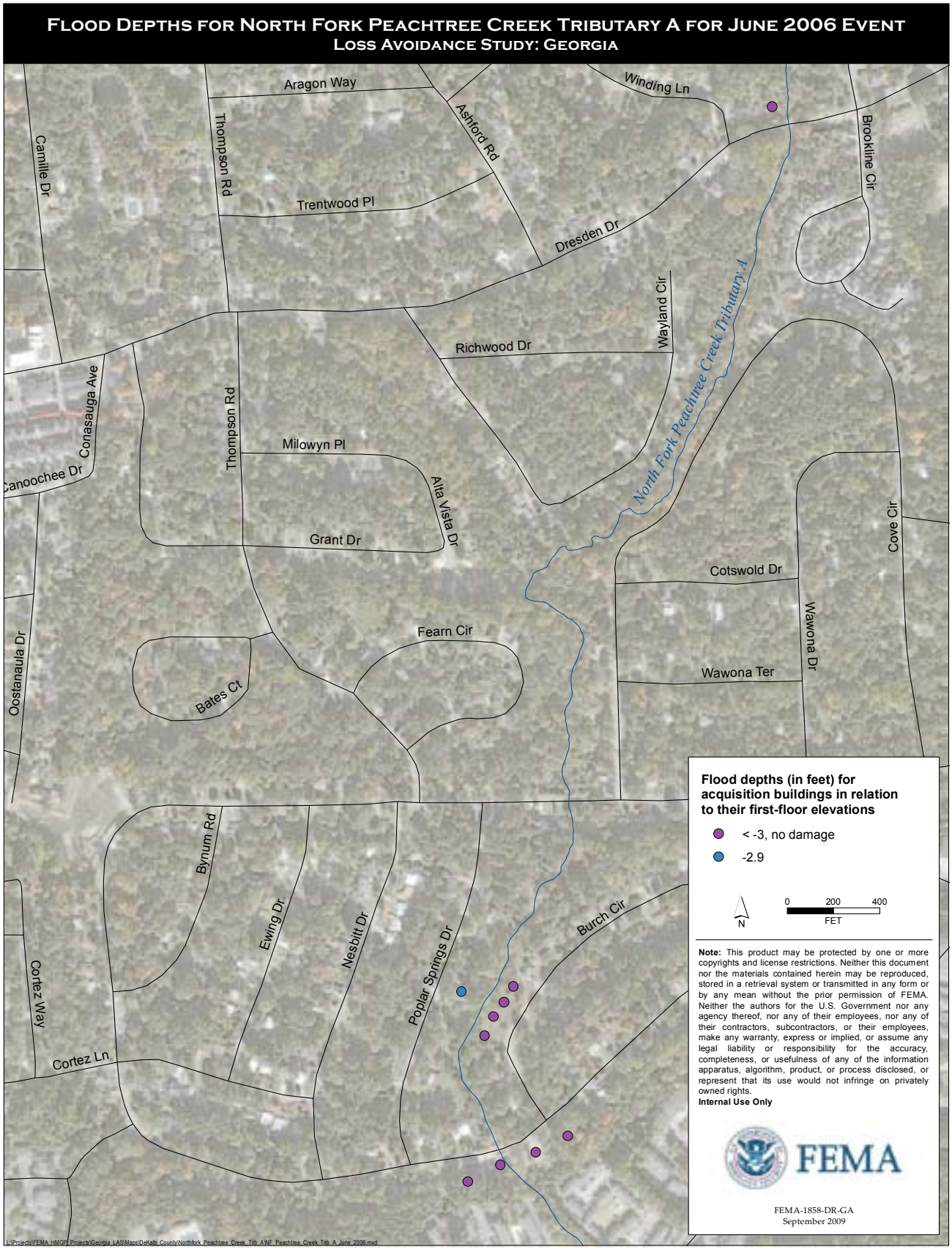
Flood Depths for North Fork Peachtree Creek Tributary A for June 2006 Event
Loss Avoidance Study: Georgia
Aragon Way
Winding Ln
Ashford Rd
Thompson Rd
Camille Dr
Trentwood Pl
Dresden Dr
Brookline Cir
Wayland Cir
Richwood Dr
North Fork Peachtree Creek Tributary A
Conasauga Ave
Canoochee Dr
Thompson Rd
Milowyn Pl
Alta Vista Dr
Grant Dr
Cove Cir
Cotswold Dr
Wawona Dr
Wawona Ter
Fearn Cir
Oostanaula Dr
Bates Ct
Bynum Rd
Ewing Dr
Nesbitt Dr
Poplar Springs Dr
Burch Cir
Cortez Way
Cortez Ln
Flood depths (in feet) for acquisition buildings in relation to their first-floor elevations
< -3, no damage
-2.9
N
0 200 400
FET
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Figure D.22

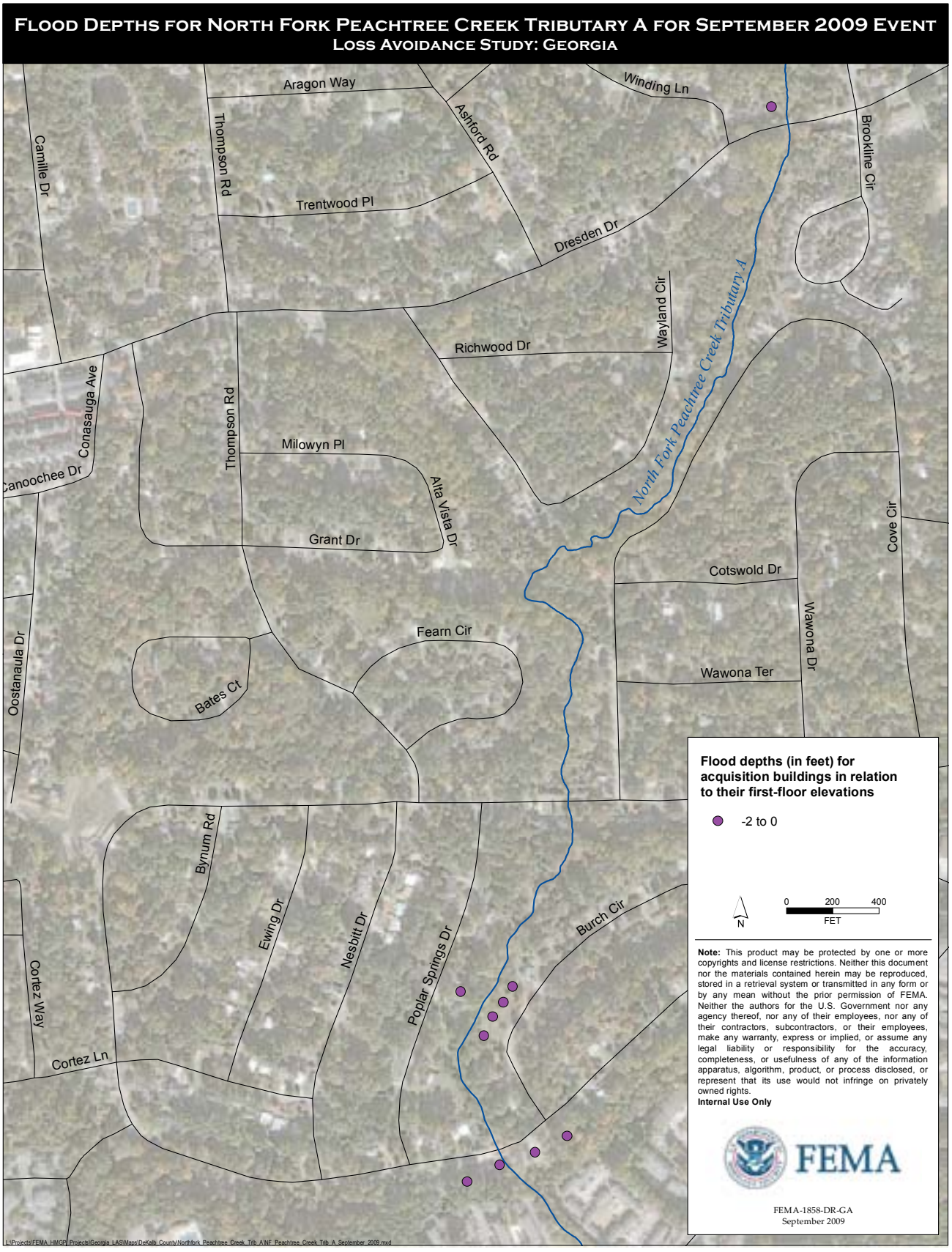
Flood Depths for North Fork Peachtree Creek Tributary A for September 2009 Event
Loss Avoidance Study: Georgia
Aragon Way
Winding Ln
Ashford Rd
Thompson Rd
Camille Dr
Trentwood Pl
Dresden Dr
Brookline Cir
Wayland Cir
Richwood Dr
North Fork Peachtree Creek Tributary A
Conasauga Ave
Thompson Rd
Milowyn Pl
Alta Vista Dr
Grant Dr
Cotswold Dr
Cove Cir
Wawona Dr
Wawona Ter
Fearn Cir
Bates Ct
Oostanaula Dr
Bynum Rd
Ewing Dr
Nesbitt Dr
Poplar Springs Dr
Burch Cir
Cortez Way
Cortez Ln
Flood depths (in feet) for acquisition buildings in relation to their first-floor elevations
-2 to 0
N
0 200 400
FET
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Figure D.23


Flood Depths for Peachtree Branch of Henderson Mill Creek for September 2009 Event
Loss Avoidance Study: Georgia
Dunnington Cir
Henderson Mill Rd
Evans Rd
Peachtree Branch
Flood depths (in feet) for acquisition buildings in relation to their first-floor elevations
9.1
N
0
50
100
FEET
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Figure D.24


Flood Depths for Peavine Creek Tributary for September 2009 Event
Loss Avoidance Study: Georgia
Westchester Dr
Peavine Creek Tributary
Chelsea Dr
Kathryn Ave
Flood depths (in feet) for acquisition buildings in relation to their first-floor elevations
-2 to 0
N
0
50
100
FEET
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Figure D.25


Flood Depths for Shoal Creek for September 2004 Event
Loss Avoidance Study: Georgia
Miriam Ln
Toney Dr
Shoal Creek
Flood depths (in feet) for acquisition buildings in relation to their first-floor elevations
1.6
N
0
50
100
FEET
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Figure D.26


Flood Depths for South Fork Peachtree Creek for September 2004 Event
Loss Avoidance Study: Georgia
Willivee Dr
Willivee Pl
Willivee Pl
Hunting Valley Pl
Hunting Valley Dr
South Fork Peachtree Creek
Gaylemont Cir
Scott Cir
Vistamont Dr
Flood depths (in feet) for acquisition buildings in relation to their first-floor elevations
2.5
N
0
200
400
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Figure D.27

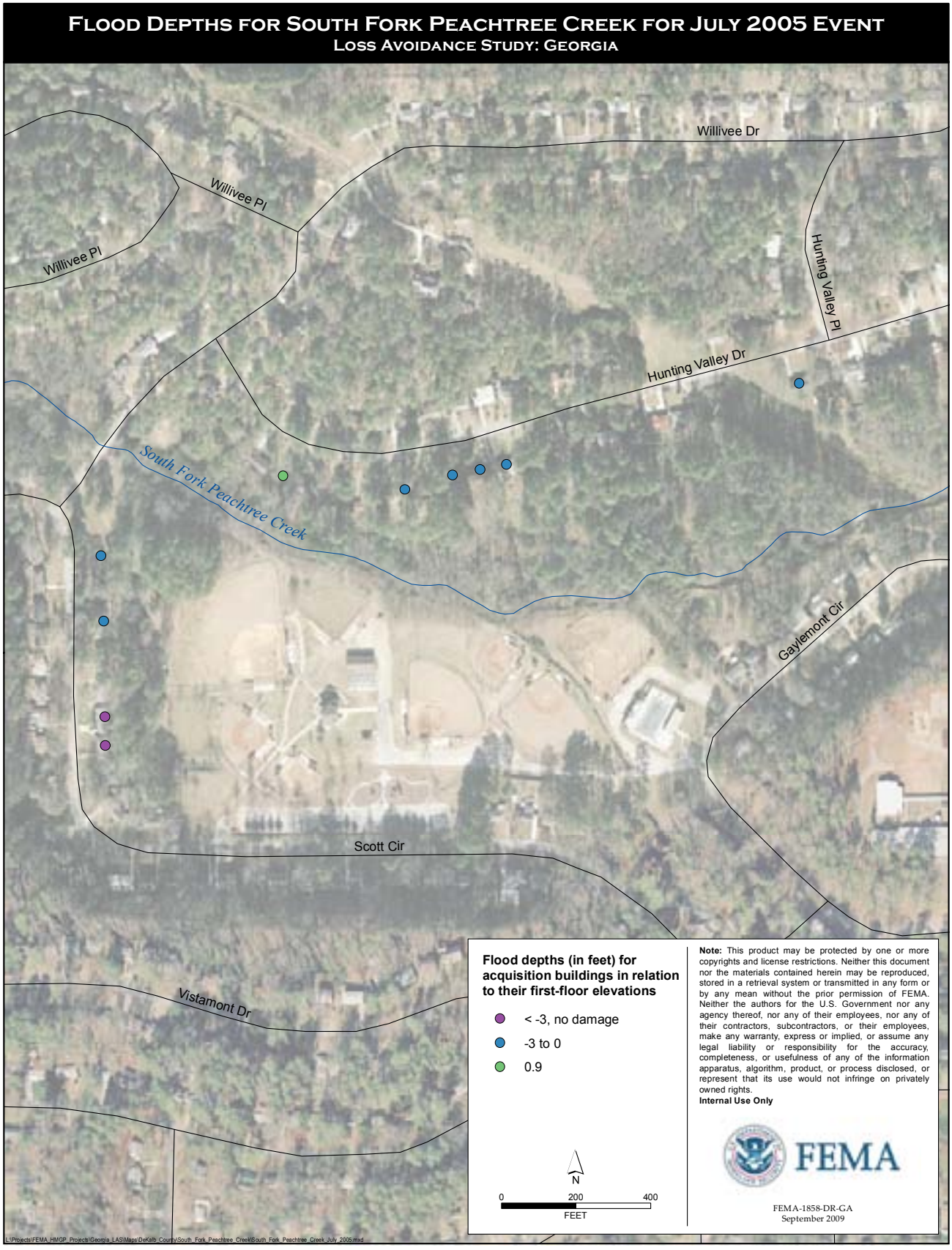
Flood Depths for South Fork Peachtree Creek for July 2005 Event
Loss Avoidance Study: Georgia
Willivee Dr
Willivee Pl
Willivee Pl
Hunting Valley Pl
Hunting Valley Dr
South Fork Peachtree Creek
Gaylemont Cir
Scott Cir
Vistamont Dr
Flood depths (in feet) for acquisition buildings in relation to their first-floor elevations
< -3, no damage
-3 to 0
0.9
N
0
200
400
FEET
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Figure D.28

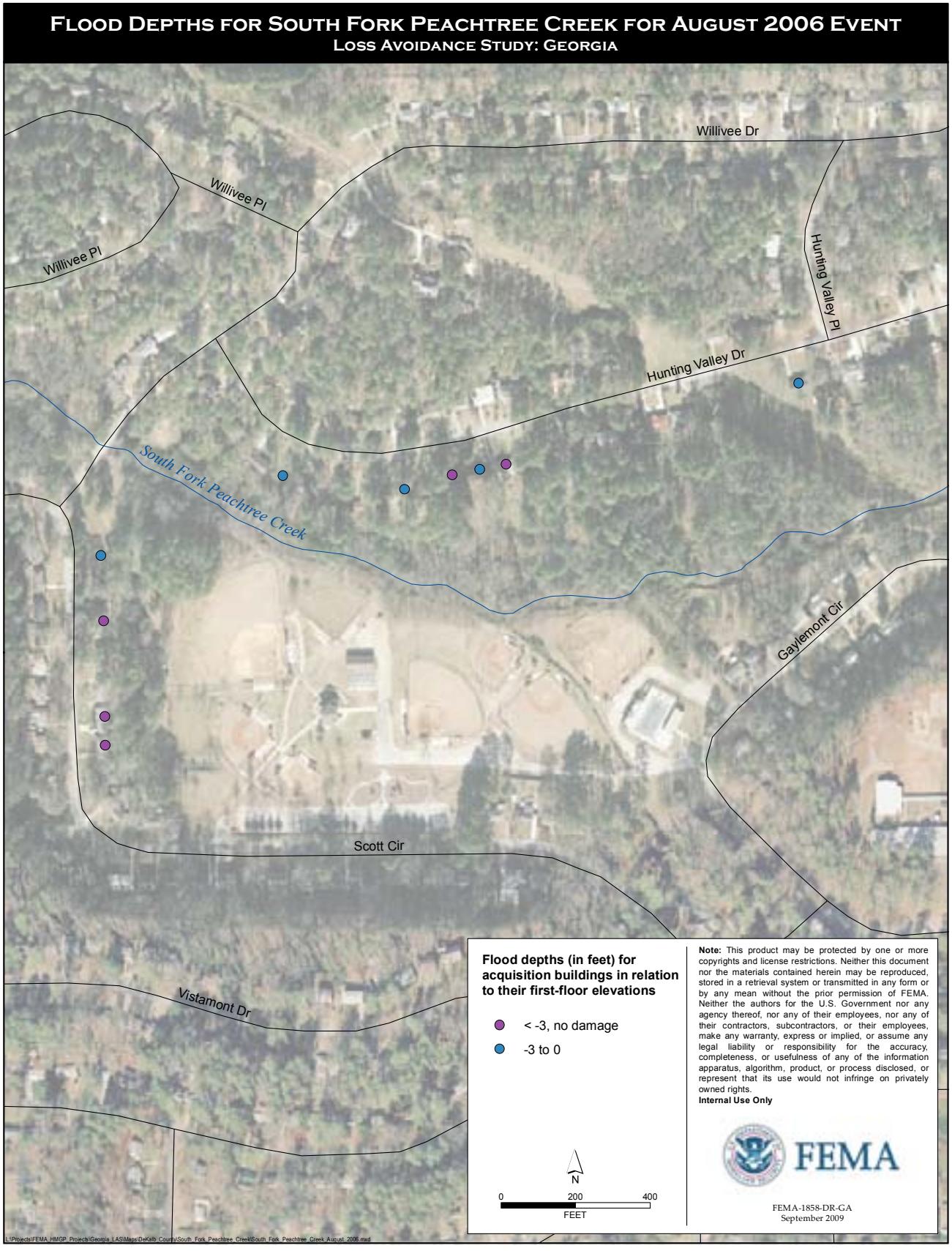
Flood Depths for South Fork Peachtree Creek for August 2006 Event
Loss Avoidance Study: Georgia
Willivee Dr
Willivee Pl
Willivee Pl
Hunting Valley Pl
Hunting Valley Dr
South Fork Peachtree Creek
Gaylemont Cir
Scott Cir
Vistamont Dr
Flood depths (in feet) for acquisition buildings in relation to their first-floor elevations
< -3, no damage
-3 to 0
N
0
200
400
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Figure D.29

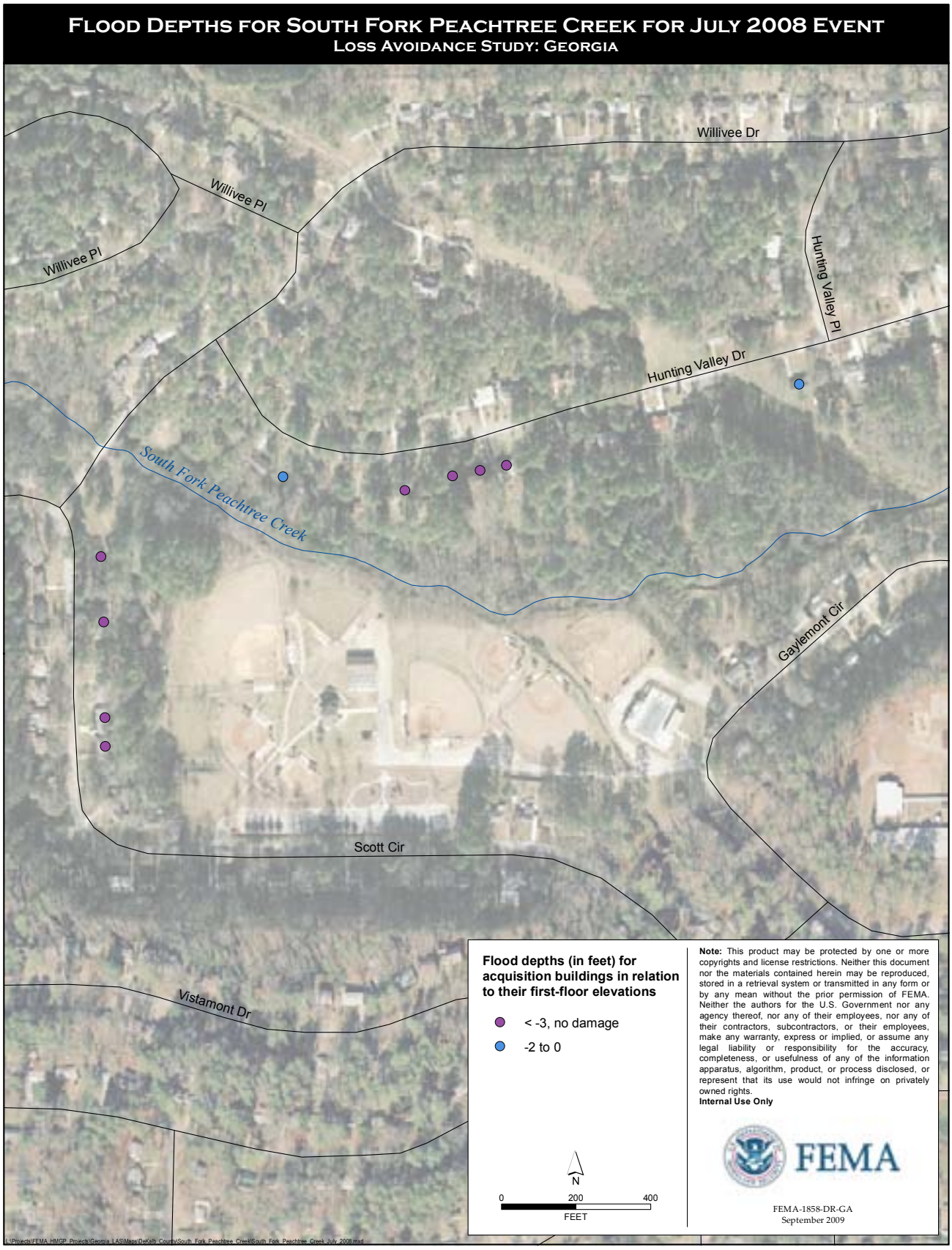
Flood Depths for South Fork Peachtree Creek for July 2008 Event
Loss Avoidance Study: Georgia
Willivee Dr
Willivee Pl
Willivee Pl
Hunting Valley Pl
Hunting Valley Dr
South Fork Peachtree Creek
Gaylemont Cir
Scott Cir
Vistamont Dr
Flood depths (in feet) for acquisition buildings in relation to their first-floor elevations
< -3, no damage
-2 to 0
N
0
200
400
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Figure D.30

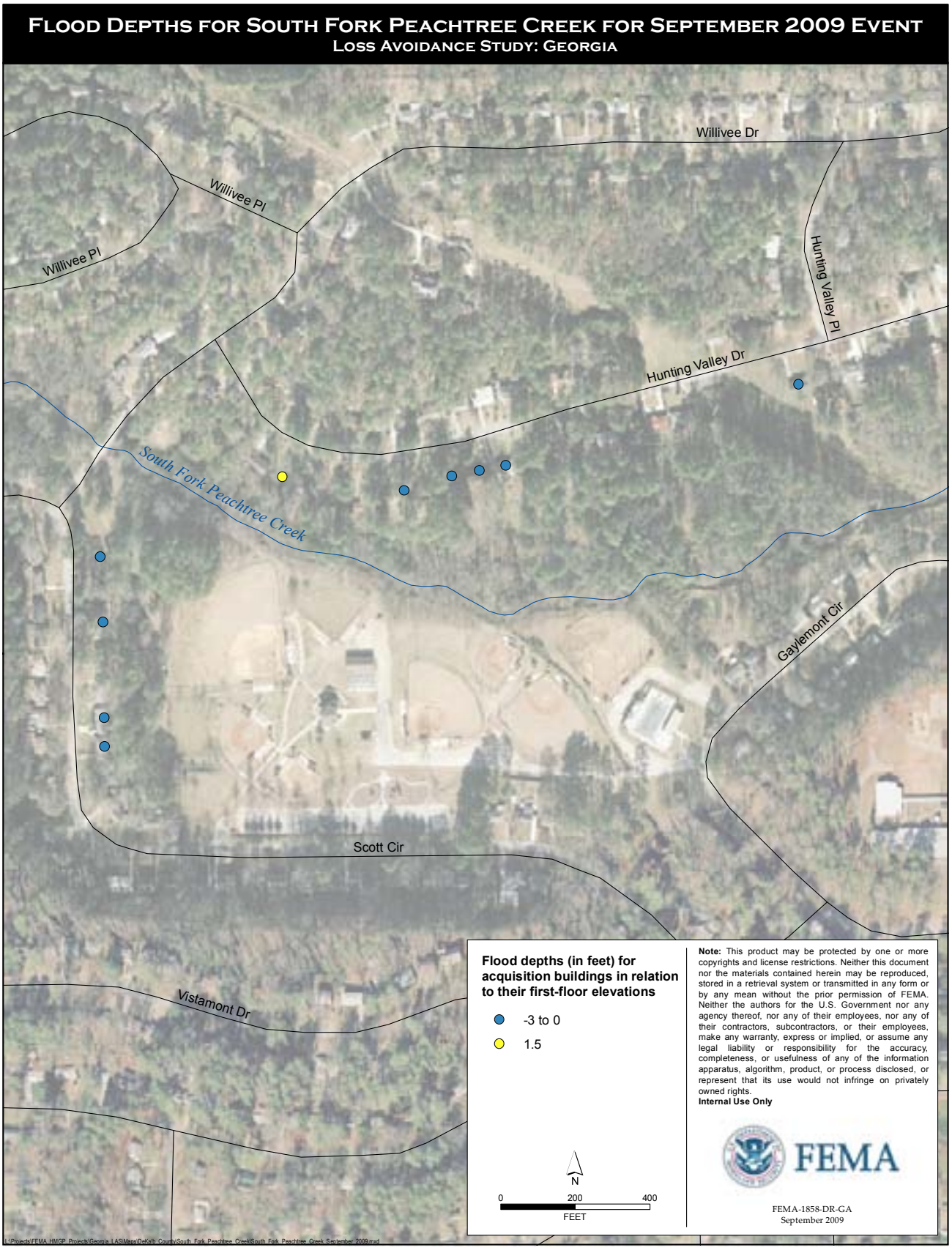
Flood Depths for South Fork Peachtree Creek for September 2009 Event
Loss Avoidance Study: Georgia
Willivee Dr
Willivee Pl
Willivee Pl
Hunting Valley Pl
Hunting Valley Dr
South Fork Peachtree Creek
Gaylemont Cir
Scott Cir
Vistamont Dr
Flood depths (in feet) for acquisition buildings in relation to their first-floor elevations
-3 to 0
1.5
N
0
200
400
FEET
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Figure D.31


Flood Depths for South Fork Peachtree Creek Tributary for July 2005 Event
Loss Avoidance Study: Georgia
Heritage Sq
Desmond Dr
Carlyle Lake
Reckie Rd
Scott Cir
Woodmoor Ln
Densley Dr
Park Ln
Desmond Dr
Williams Ln
Shoup Ct
Willivee Dr
Superior Ave
Superior Pl
Wendan Dr
South Fork Peachtree Creek Tributary
Webster Dr
23
Emory Oaks Way
Myrtle Ln
Clairmont Cir
Powell Ln
Sherman Way
Landover Dr
Willow Ln
Flood depths (in feet) for acquisition buildings in relation to their first-floor elevations
-2.4
N
0 200 400
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Figure D.32


Flood Depths for South Fork Peachtree Creek Tributary for August 2006 Event
Loss Avoidance Study: Georgia
Heritage Sq
Desmond Dr
Carlyle Lake
Reckle Rd
Scott Cir
Densley Dr
Woodmoor Ln
Park Ln
Desmond Dr
Williams Ln
Shoup Ct
Willivee Dr
Superior Ave
Superior Pl
South Fork Peachtree Creek Tributary
Wendan Dr
Webster Dr
23
Emory Oaks Way
Myrtle Ln
Clairmont Cir
Powell Ln
Sherman Way
Landover Dr
Willow Ln
Flood depths (in feet) for acquisition buildings in relation to their first-floor elevations
< -3, no damage
N
0
200
400
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Figure D.33


Flood Depths for South Fork Peachtree Creek Tributary for July 2008 Event
Loss Avoidance Study: Georgia
Carlyle Lake
Heritage Sq
Desmond Dr
Reckle Rd
Scott Cir
Desmond Dr
Park Ln
Densley Dr
Woodmoor Ln
Williams Ln
Shoup Ct
Willivee Dr
Superior Ave
Superior Pl
South Fork Peachtree Creek Tributary
Webster Dr
Wendan Dr
23
Emory Oaks Way
Myrtle Ln
Claimont Cir
Powell Ln
Sherman Way
Landover Dr
Willow Ln
Flood depths (in feet) for acquisition buildings in relation to their first-floor elevations
< -3, no damage
N
0 200 400
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Figure D.34

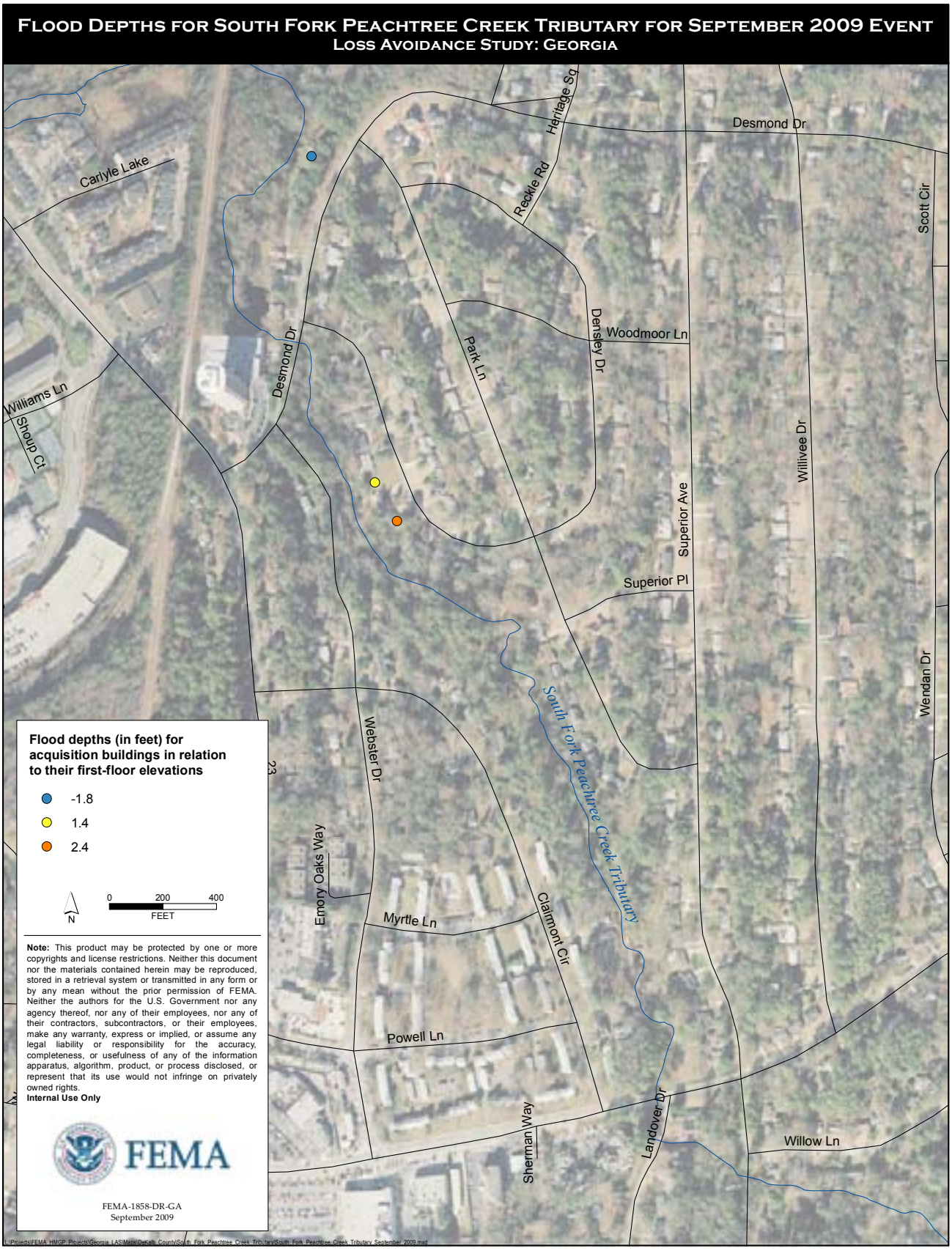
Flood Depths for South Fork Peachtree Creek Tributary for September 2009 Event
Loss Avoidance Study: Georgia
Heritage Sq
Desmond Dr
Carlyle Lake
Reckle Rd
Scott Cir
Woodmoor Ln
Densley Dr
Park Ln
Desmond Dr
Williams Ln
Shoup Ct
Willivee Dr
Superior Ave
Superior Pl
South Fork Peachtree Creek Tributary
Wendan Dr
Webster Dr
Emory Oaks Way
Myrtle Ln
Clairmont Cir
Powell Ln
Sherman Way
Landover Dr
Willow Ln
Flood depths (in feet) for acquisition buildings in relation to their first-floor elevations
-1.8
1.4
2.4
N
0
200
400
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Figure D.35

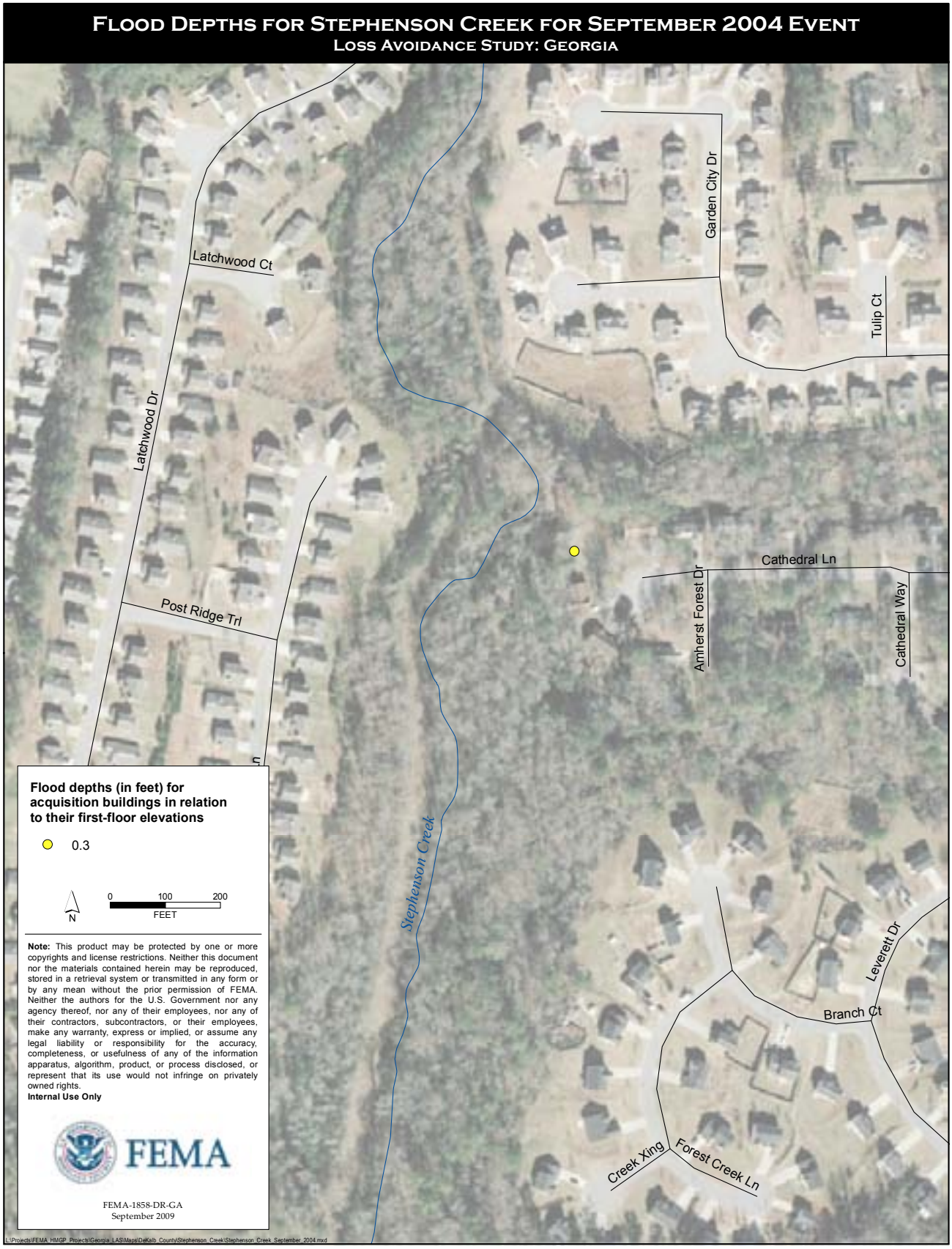
Flood Depths for Stephenson Creek for September 2004 Event
Loss Avoidance Study: Georgia
Latchwood Ct
Latchwood Dr
Post Ridge Trl
Garden City Dr
Tulip Ct
Cathedral Ln
Amherst Forest Dr
Cathedral Way
Stephenson Creek
Leverett Dr
Branch Ct
Creek Xing
Forest Creek Ln
Flood depths (in feet) for acquisition buildings in relation to their first-floor elevations
0.3
N
0 100 200
FEET
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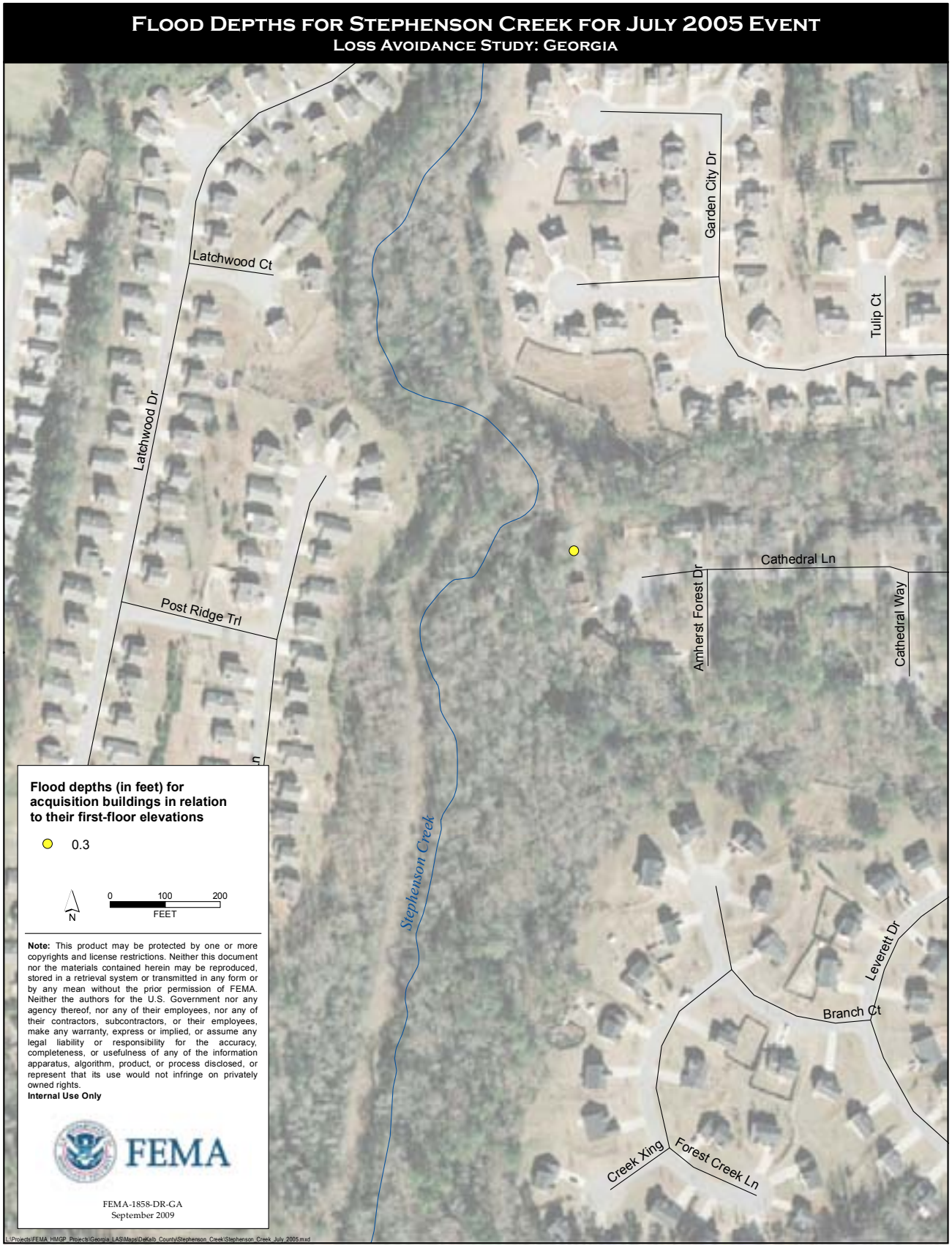
Figure D.36


Flood Depths for Stephenson Creek for July 2005 Event
Loss Avoidance Study: Georgia
Latchwood Ct
Latchwood Dr
Post Ridge Trl
Garden City Dr
Tulip Ct
Cathedral Ln
Amherst Forest Dr
Cathedral Way
Stephenson Creek
Leverett Dr
Branch Ct
Creek Xing
Forest Creek Ln
Flood depths (in feet) for acquisition buildings in relation to their first-floor elevations
0.3
N
0 100 200
FEET
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L:\Projects\FEMA_HMGP_Projects\Georgia_LAS\Maps\DeKalb_County\Stephenson_Creek\Stephenson_Creek_July_2005.mxd

Figure D.37

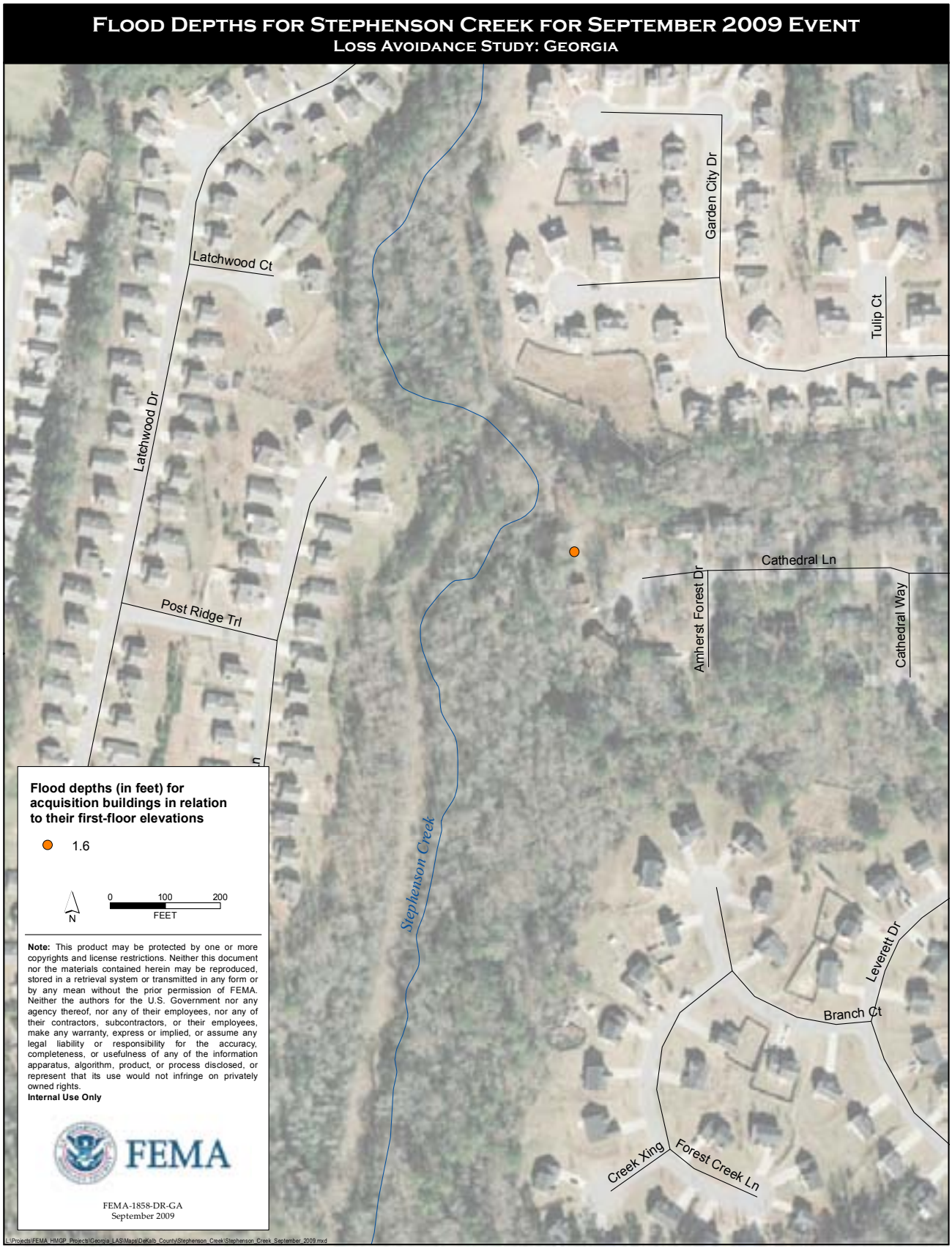
Flood Depths for Stephenson Creek for September 2009 Event
Loss Avoidance Study: Georgia
Latchwood Ct
Latchwood Dr
Post Ridge Trl
Garden City Dr
Tulip Ct
Cathedral Ln
Amherst Forest Dr
Cathedral Way
Stephenson Creek
Leverett Dr
Branch Ct
Creek Xing
Forest Creek Ln
Flood depths (in feet) for acquisition buildings in relation to their first-floor elevations
1.6
N
0
100
200
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Figure D.38


Flood Depths for Unnamed North Fork Peachtree Creek Tributary for September 2004 Event
Loss Avoidance Study: Georgia
Woodbine Ter
Unnamed North Fork Peachtree Creek Tributary
Audubon Dr
Ravenwood Way
Alderbrook Rd
Flood depths (in feet) for acquisition buildings in relation to their first-floor elevations
-0.6
N
0 50 100
FEET
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September 2009
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Figure D.39


Flood Depths for Unnamed South Fork Peachtree Creek Tributary for September 2009 Event
Loss Avoidance Study: Georgia
Saint Lawrence Cove
Sheffield Pl
Ronald Rd
Bishop Dr
Unnamed South Fork Peachtree Creek Tributary
Avon Ave
Cody Cir
Flood depths (in feet) for acquisition buildings in relation to their first-floor elevations
1
0
100
200
FEET
N
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Figure D.40

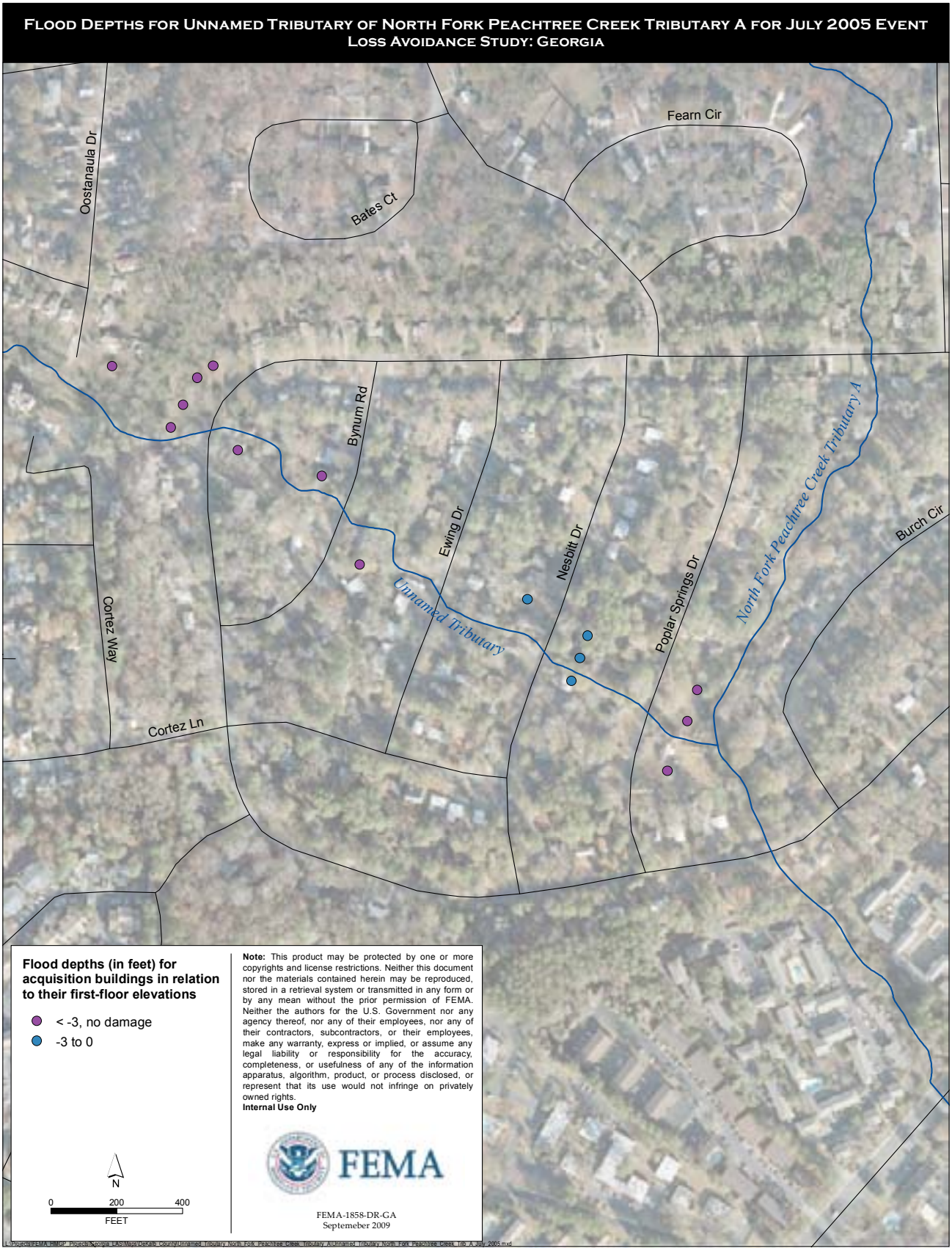
Flood Depths for Unnamed Tributary of North Fork Peachtree Creek Tributary A for July 2005 Event
Loss Avoidance Study: Georgia
Fearn Cir
Oostanaula Dr
Bates Ct
Bynum Rd
Ewing Dr
Nesbitt Dr
Poplar Springs Dr
Burch Cir
Cortez Way
Cortez Ln
Unnamed Tributary
North Fork Peachtree Creek Tributary A
Flood depths (in feet) for acquisition buildings in relation to their first-floor elevations
< -3, no damage
-3 to 0
N
0
200
400
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Figure D.41

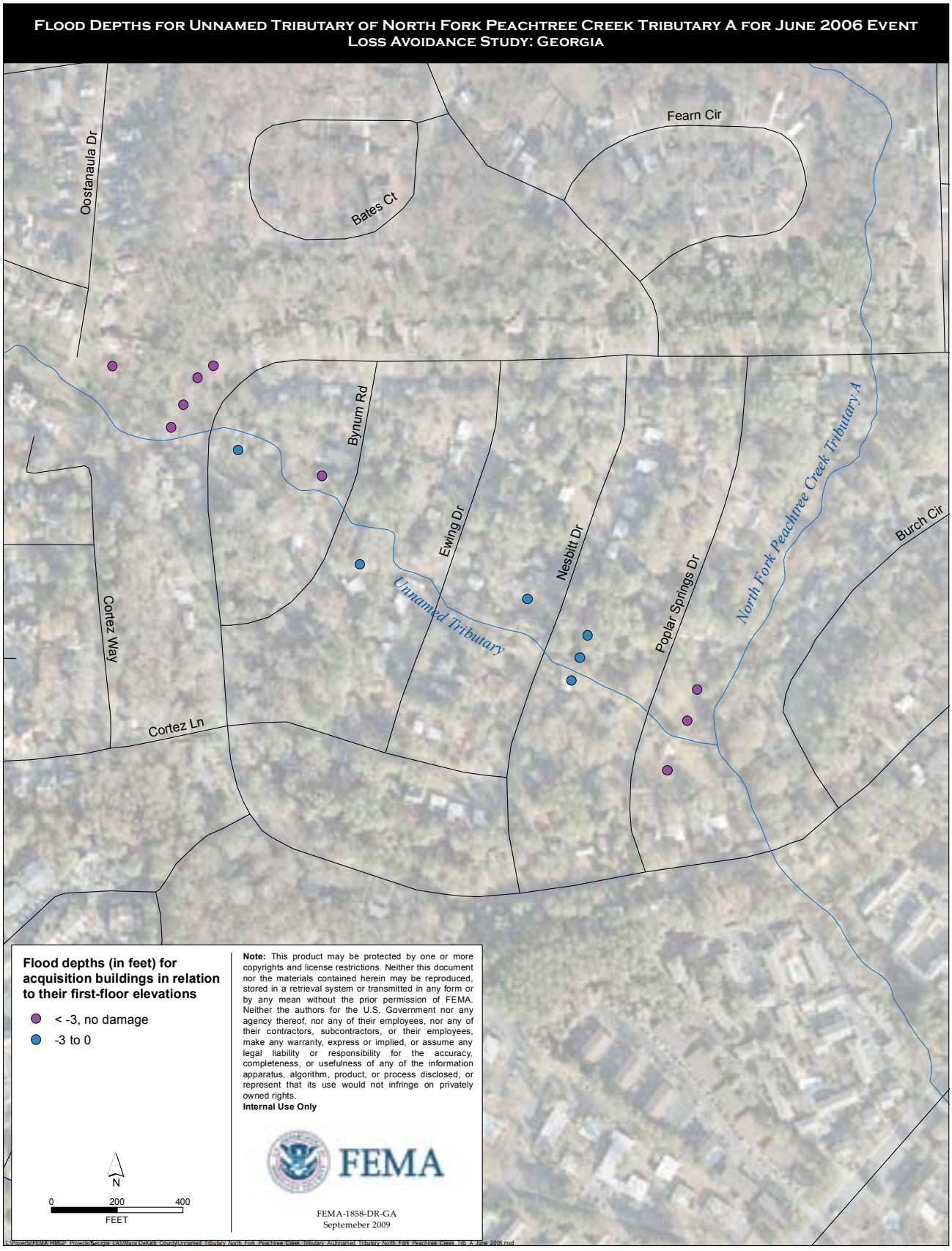
Flood Depths for Unnamed Tributary of North Fork Peachtree Creek Tributary A for June 2006 Event
Loss Avoidance Study: Georgia
Oostanaula Dr
Bates Ct
Fearn Cir
Bynum Rd
Ewing Dr
Nesbitt Dr
Poplar Springs Dr
North Fork Peachtree Creek Tributary A
Burch Cir
Unnamed Tributary
Cortez Way
Cortez Ln
Flood depths (in feet) for acquisition buildings in relation to their first-floor elevations
< -3, no damage
-3 to 0
N
0
200
400
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Figure D.42

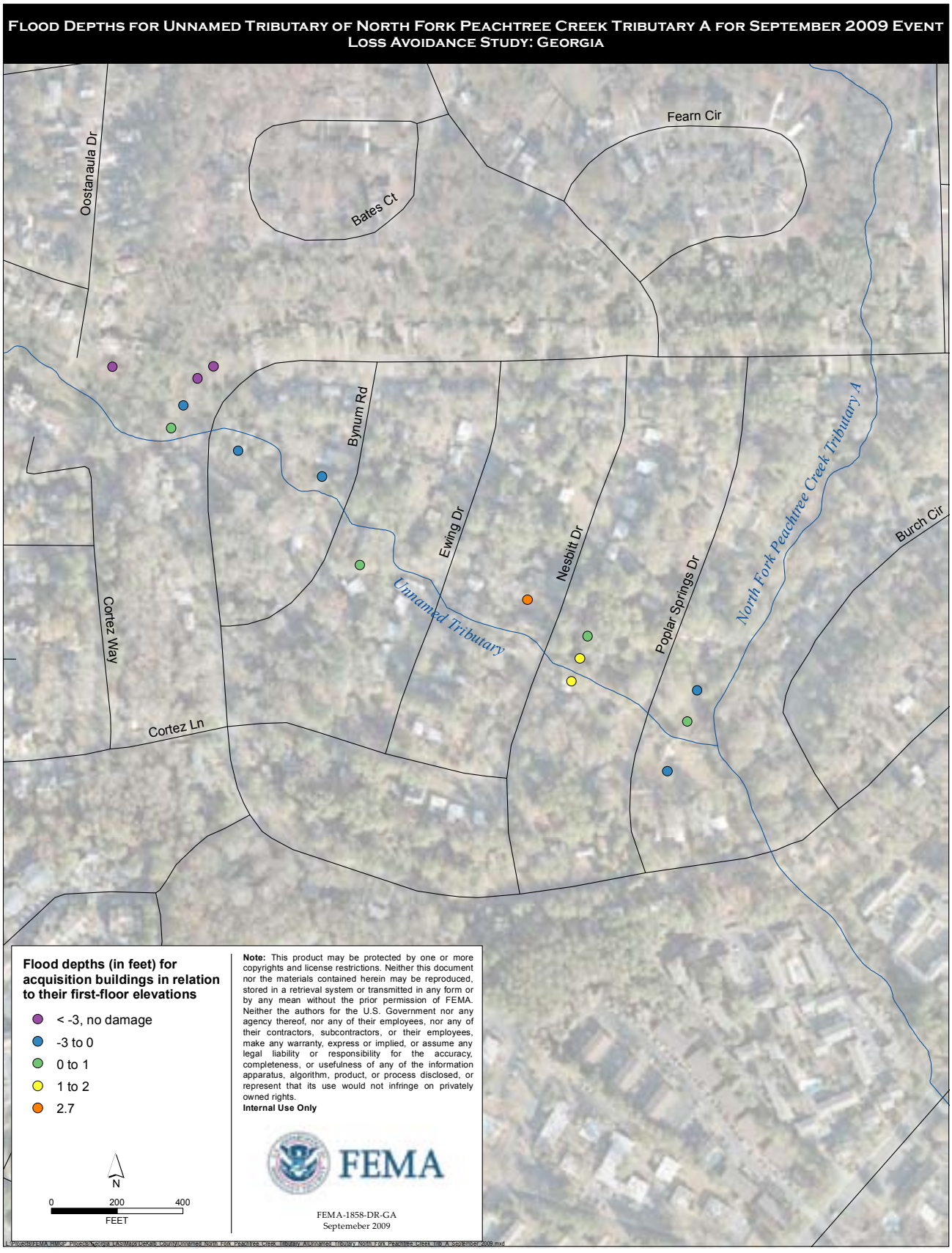
Flood Depths for Unnamed Tributary of North Fork Peachtree Creek Tributary A for September 2009 Event
Loss Avoidance Study: Georgia
Oostanaula Dr
Bates Ct
Fearn Cir
Bynum Rd
Ewing Dr
Nesbitt Dr
Poplar Springs Dr
North Fork Peachtree Creek Tributary A
Burch Cir
Cortez Way
Cortez Ln
Unnamed Tributary
Flood depths (in feet) for acquisition buildings in relation to their first-floor elevations
< -3, no damage
-3 to 0
0 to 1
1 to 2
2.7
N
0
200
400
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Table D.1 (part 1 of 2)

Summary of Losses Avoided and ROI Calculations in DeKalb County for All Events

Building Number	Address	Mitigation Completion Date	2010 Value of Total Mitigation Cost	Sep-02 Losses Avoided	May-03 Losses Avoided	Sep-04 Losses Avoided	Mar-05 Losses Avoided	Jul-05 Losses Avoided	Jun-06 Losses Avoided	Aug-06 Losses Avoided	Dec-07 Losses Avoided	Jul-08 Losses Avoided	Sep-09 Losses Avoided	TOTAL LOSSES AVOIDED	ROI (%)
148	2000 McJenkins Dr, Decatur, GA 30032	May-02	$ 267,446	$ -	$ -	$ 202,826	$ 143,249	$ -	$ -	$ 63,630	$ 59,868	$ -	$ 269,440	$ 739,012	276%
142	2023 Audubon Dr, Atlanta, GA 30329	Jul-02	$ 167,879	$ -	$ -	$ 23,700	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 23,700	14%
143	2263 Melinda Dr, Atlanta, GA 30345	Jul-02	$ 164,078	$ -	$ -	$ 41,015	$ 12,364	$ -	$ -	$ -	$ -	$ -	$ 113,116	$ 166,495	101%
144	1989 Queens Way, Chamblee, GA 30341	Jul-02	$ 228,684	$ -	$ -	$ 111,789	$ -	$ -	$ -	$ -	$ -	$ -	$ 46,037	$ 157,826	69%
145	3164 Bobbie Lane, Decatur, GA 30032	Jul-02	$ 99,471	$ -	$ -	$ 174,883	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 174,883	176%
146	649 Cheviot Dr, Decatur, GA 30032	Jul-02	$ 102,007	$ 17,294	$ 13,119	$ 31,900	$ -	$ 68,611	$ -	$ -	$ -	$ -	$ 24,859	$ 155,783	153%
147	665 Cheviot Dr, Decatur, GA 30032	Jul-02	$ 114,674	$ 11,307	$ 9,573	$ 46,141	$ -	$ 59,957	$ -	$ -	$ -	$ -	$ 16,798	$ 143,777	125%
2	6251 Cathedral Lane, Lithonia, GA 30030	May-03	$ 168,801	$ -	$ -	$ 48,715	$ -	$ 48,715	$ -	$ -	$ -	$ -	$ 86,508	$ 183,938	109%
1	3230 Barkside Court, Chamblee, GA 30030	May-03	$ 321,384	$ -	$ -	$ 267,798	$ 215,362	$ -	$ -	$ 165,292	$ 162,740	$ -	$ 424,455	$ 1,235,648	384%
6	2293 Hunting Valley, Decatur, GA 30030	Jun-03	$ 358,592	$ -	$ -	$ 82,980	$ -	$ 48,006	$ -	$ 26,456	$ -	$ 4,814	$ 61,346	$ 223,602	62%
4	671 Cheviot Drive, Decatur, GA 30030	Jun-03	$ 170,384	$ -	$ -	$ 122,516	$ -	$ 126,262	$ -	$ -	$ -	$ -	$ 70,541	$ 319,319	187%
5	2441 Green Forrest, Decatur, GA 30030	Jul-03	$ 185,688	$ -	$ -	$ 50,841	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 50,841	27%
7	2133 Medfield Trail NE, Atlanta, GA 30345	Apr-04	$ 274,289	$ -	$ -	$ 97,084	$ 83,899	$ -	$ -	$ 41,356	$ 39,541	$ -	$ 153,819	$ 415,698	152%
11	683 Cheviot Drive, Decatur, GA 30032	May-04	$ 189,510	$ -	$ -	$ 11,019	$ -	$ 21,684	$ -	$ -	$ -	$ -	$ 3,476	$ 36,180	19%
10	677 Cheviot Drive, Decatur, GA 30032	May-04	$ 179,003	$ -	$ -	$ 107,360	$ -	$ 101,468	$ -	$ -	$ -	$ -	$ 54,902	$ 263,730	147%
12	687 Cheviot Drive, Decatur, GA 30032	Jun-04	$ 191,830	$ -	$ -	$ 9,617	$ -	$ 17,710	$ -	$ -	$ -	$ -	$ -	$ 27,327	14%
13	686 Heathmoor Pl, Decatur, GA 30032	Jun-04	$ 172,793	$ -	$ -	$ 87,598	$ -	$ 85,449	$ -	$ -	$ -	$ -	$ 53,273	$ 226,320	131%
3	657 Cheviot Drive, Decatur, GA 30032	Aug-04	$ 188,800	$ -	$ -	$ 107,645	$ -	$ 134,237	$ -	$ -	$ -	$ -	$ 84,728	$ 326,609	173%
201	2333 Poplar Springs Dr NE, Atlanta, GA 30319	Nov-04	$ 337,384	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 12,507	$ 12,507	4%
9	643 Cheviot Drive, Decatur, GA 30032	Dec-04	$ 206,030	$ -	$ -	$ -	$ -	$ 176,046	$ -	$ -	$ -	$ -	$ 121,918	$ 297,964	145%
14	694 Heathmoor Pl, Decatur, GA 30032	Mar-05	$ 188,751	$ -	$ -	$ -	$ -	$ 71,707	$ -	$ -	$ -	$ -	$ 28,359	$ 100,066	53%
15	621 Densley Drive, Decatur, GA 30033	Mar-05	$ 346,622	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 61,910	$ 61,910	18%
16	3743 Kingswood Dr, Decatur, GA 30032	Mar-05	$ 163,014	$ -	$ -	$ -	$ -	$ 80,250	$ -	$ -	$ -	$ -	$ 27,731	$ 107,981	66%
17	2402 Drew Valley, Atlanta, GA 30319	Mar-05	$ 228,933	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	0%
18	2396 Drew Valley, Atlanta, GA 30319	Mar-05	$ 350,475	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,692	$ 2,692	1%
19	2390 Drew Valley, Atlanta, GA 30319	Mar-05	$ 330,420	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 49,140	$ 49,140	15%
20	2319 Poplar Springs Dr NE, Atlanta, GA 30319	Mar-05	$ 279,258	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 58,742	$ 58,742	21%
21	2327 Poplar Springs Dr NE, Atlanta, GA 30319	Mar-05	$ 274,385	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 32,032	$ 32,032	12%
126	2301 Poplar Springs, Atlanta, GA 30319	Mar-05	$ 269,644	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 42,110	$ 42,110	16%
65	2813 Riderwood Dr, Decatur, GA 30033	Jun-05	$ 407,711	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 82,377	$ 82,377	20%
66	3636 Bishop Dr, Tucker, GA 30084	Jun-05	$ 198,247	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 87,931	$ 87,931	44%
67	2157 Medfield Tr, Atlanta, GA 30345	Jun-05	$ 225,492	$ -	$ -	$ -	$ -	$ -	$ -	$ 74,883	$ 72,683	$ -	$ 254,069	$ 401,635	178%
68	2342 Nesbitt Dr, Atlanta, GA 30319	Jun-05	$ 267,842	$ -	$ -	$ -	$ -	$ -	$ 7,031	$ -	$ -	$ -	$ 96,781	$ 103,812	39%
141	3141 Buford Highway, Atlanta, GA 30329	Aug-07	$ 1,547,534	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 430,044	$ 430,044	28%
170	1991 Gainsborough Drive, Atlanta, GA 30341	Oct-07	$ 331,588	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 24,286	$ -	$ 62,270	$ 86,556	26%
174	1946 Gainsborough Drive, Atlanta, GA 30341	Oct-07	$ 329,403	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 6,094	$ -	$ 94,613	$ 100,707	31%
172	1954 Gainsborough Drive, Atlanta, GA 30341	Oct-07	$ 343,608	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 42,014	$ 42,014	12%
171	1947 Gainsborough Drive, Atlanta, GA 30341	Oct-07	$ 333,773	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 26,971	$ -	$ 79,472	$ 106,443	32%
173	1955 Gainsborough Drive, Atlanta, GA 30341	Oct-07	$ 334,866	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 8,900	$ 8,900	3%
169	1939 Gainsborough Drive, Atlanta, GA 30341	Nov-07	$ 340,330	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 13,887	$ -	$ 129,866	$ 143,753	42%
166	1915 Gainsborough Drive, Atlanta, GA 30341	Apr-08	$ 333,600	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 94,862	$ 94,862	28%
167	1923 Gainsborough Drive, Atlanta, GA 30341	Jun-08	$ 353,121	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 112,843	$ 112,843	32%
168	1931 Gainsborough Drive, Atlanta, GA 30341	Jun-08	$ 330,417	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 40,998	$ 40,998	12%
52	3139 Buford Highway, Atlanta, GA 30329	Jul-08	$ 1,333,040	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 422,620	$ 422,620	32%
53	3145 Buford Highway, Atlanta, GA 30329	Jul-08	$ 1,333,040	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 615,467	$ 615,467	46%
54	3143 Buford Highway, Atlanta, GA 30329	Jul-08	$ 1,333,040	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 572,195	$ 572,195	43%
194	520 Weschester, Decatur, GA 30030	Nov-08	$ 484,663	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,992	$ 3,992	1%
195	514 Weschester, Decatur, GA 30030	Nov-08	$ 428,202	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 6,923	$ 6,923	2%
196	526 Weschester, Decatur, GA 30030	Nov-08	$ 410,015	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 8,495	$ 8,495	2%
197	532 Weschester, Decatur, GA 30030	Nov-08	$ 431,177	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 35,818	$ 35,818	8%
179	3227 Wake Robin Trail, Chamblee, GA 30341	Nov-08	$ 452,998	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 35,526	$ 35,526	8%
22	2148 Drew Valley, Atlanta, GA 30319	Dec-08	$ 247,614	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 12,068	$ 12,068	5%
23	2154 Drew Valley, Atlanta, GA 30319	Dec-08	$ 247,614	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 27,264	$ 27,264	11%
24	2158 Drew Valley, Atlanta, GA 30319	Dec-08	$ 247,614	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 8,275	$ 8,275	3%
25	2166 Drew Valley, Atlanta, GA 30319	Dec-08	$ 247,614	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 7,066	$ 7,066	3%
26	2292 Burch Circle NE, Atlanta, GA 30319	Dec-08	$ 247,614	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 6,573	$ 6,573	3%
27	2298 Burch Circle, Atlanta, GA 30319	Dec-08	$ 247,614	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 5,301	$ 5,301	2%
28	2304 Burch Circle, Atlanta, GA 30319	Dec-08	$ 247,614	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 9,045	$ 9,045	4%
29	2310 Burch Circle, Atlanta, GA 30319	Dec-08	$ 247,614	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 5,968	$ 5,968	2%
30	2329 Nesbitt Drive, Atlanta, GA 30319	Dec-08	$ 247,614	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 44,405	$ 44,405	18%
31	2335 Nesbitt Drive, Atlanta, GA 30319	Dec-08	$ 247,614	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 50,804	$ 50,804	21%
32	2339 Nesbitt Drive, Atlanta, GA 30319	Dec-08	$ 247,614	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 36,870	$ 36,870	15%
33	2361 Bynum Rd, Atlanta, GA 30319	Dec-08	$ 247,614	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 28,628	$ 28,628	12%
34	2387 Drew Valley, Atlanta, GA 30319	Dec-08	$ 247,614	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 13,200	$ 13,200	5%

Table D.1 (part 2 of 2)

Summary of Losses Avoided and ROI Calculations in DeKalb County for All Events

Building Number	Address	Mitigation Completion Date	2010 Value of Total Mitigation Cost	Sep-02 Losses Avoided	May-03 Losses Avoided	Sep-04 Losses Avoided	Mar-05 Losses Avoided	Jul-05 Losses Avoided	Jun-06 Losses Avoided	Aug-06 Losses Avoided	Dec-07 Losses Avoided	Jul-08 Losses Avoided	Sep-09 Losses Avoided	TOTAL LOSSES AVOIDED	ROI (%)
35	2406 Drew Valley, Atlanta, GA 30319	Dec-08	$ 247,614	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	0%
36	2411 Oostanuala Dr, Atlanta, GA 30319	Dec-08	$ 247,614	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	0%
160	2313 Hunting Valley Dr, Decatur, GA 30033	Jan-09	$ 311,318	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 7,902	$ 7,902	3%
191	678 Heathmoor Pl, Decatur, GA 30032	Jan-09	$ 201,777	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	0%
158	2331 Hunting Valley Dr, Decatur, GA 30033	Jan-09	$ 368,792	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 12,419	$ 12,419	3%
176	2380 Bynum Road, Atlanta, GA 30319	Jan-09	$ 381,564	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 21,666	$ 21,666	6%
181	2151 Medfield Trail NE, Atlanta, GA 30345	Jan-09	$ 269,170	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 205,127	$ 205,127	76%
175	2746 Dunnington Circle, Atlanta, GA 30341	Feb-09	$ 394,336	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 444,717	$ 444,717	113%
178	2506 Nancy Lane, Atlanta, GA 30345	Feb-09	$ 387,950	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 269,768	$ 269,768	70%
182	3197 Barkside Court, Atlanta, GA 30341	Feb-09	$ 336,862	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 82,051	$ 82,051	24%
183	3208 Windsor Forest Road, Chamblee, GA 30341	Feb-09	$ 362,406	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 344,322	$ 344,322	95%
73	1986 Royal Ct, Chamblee, GA 30341	Mar-09	$ 341,394	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	0%
74	1965 Royal Ct, Atlanta, GA 30341	Mar-09	$ 329,034	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 5,008	$ 5,008	2%
75	1976 Queens Way, Chamblee, GA 30341	Mar-09	$ 331,094	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 131,323	$ 131,323	40%
157	2337 Hunting Valley Dr, Decatur, GA 30033	Apr-09	$ 362,406	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,520	$ 2,520	1%
159	2325 Hunting Valley Dr, Decatur, GA 30033	Jun-09	$ 311,318	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	0%
55	1977 Queens Way, Chamblee, GA 30341	Jun-09	$ 358,606	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 112,200	$ 112,200	31%
56	1982 Queens Way, Chamblee, GA 30341	Jun-09	$ 322,596	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 15,934	$ 15,934	5%
57	1988 Queens Way, Chamblee, GA 30341	Jun-09	$ 350,297	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 157,710	$ 157,710	45%
58	2003 Royal Court, Chamblee, GA 30341	Jun-09	$ 361,111	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 29,882	$ 29,882	8%
59	2006 Royal Court, Chamblee, GA 30341	Jun-09	$ 343,040	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 97,094	$ 97,094	28%
60	2014 Royal Court, Chamblee, GA 30341	Jun-09	$ 343,272	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 118,273	$ 118,273	34%
177	1748 Dresden Drive , Atlanta, GA 30319	Jul-09	$ 375,178	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 14,900	$ 14,900	4%
154	2814 Riderwood Dr, Decatur, GA 30033	Jul-09	$ 387,950	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	0%
155	2820 Riderwood Dr, Decatur, GA 30033	Jul-09	$ 368,792	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	0%
161	2397 Hunting Valley Dr, Decatur, GA 30033	Jul-09	$ 367,813	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 34,527	$ 34,527	9%
162	1031 Scott Circle, Decatur, GA 30033	Jul-09	$ 311,318	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 10,602	$ 10,602	3%
165	999 Scott Circle, Decatur, GA 30033	Jul-09	$ 335,883	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	0%
163	1023 Scott Circle, Decatur, GA 30033	Jul-09	$ 311,318	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,863	$ 3,863	1%
164	1005 Scott Circle, Decatur, GA 30033	Aug-09	$ 324,090	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	0%
76	631 Densley Dr, Decatur, GA 30033	Sep-09	$ 369,513	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 140,760	$ 140,760	38%
78	2056 Desmond Dr, Decatur, GA 30033	Sep-09	$ 355,911	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 5,448	$ 5,448	2%
														TOTAL	
		Total Mitigation Costs:		$ 1,144,238	$ 1,144,238	$ 3,545,313	$ 6,520,228	$ 7,619,520	$ 7,619,520	$ 7,619,520	$ 11,180,623	$ 16,196,880	$ 32,394,245	$ 32,394,245	
		Total Losses Avoided:		$ 28,601	$ 22,692	$ 1,625,427	$ 454,874	$ 1,040,102	$ 7,031	$ 371,616	$ 406,070	$ 4,814	$ 7,741,997	$ 11,703,226	
		ROI:		**2%**	**2%**	**46%**	**7%**	**14%**	**0%**	**5%**	**4%**	**0%**	**24%**	**36%**	

ROI = Return on Investment

Indicates property was not mitigated at time of the storm event.

Table D.2 (part 1 of 4)

Summary of Losses Avoided and ROI Calculations for DeKalb County, September 2002 Event

No.	Disaster/ Proj No	Project Type	Address	Flooding Source	Mitigation Completion Date	Building Type	BRV (2010$)	FFE (ft, NGVD29)	WSE for Event (ft, NGVD29)	Final Flood Depth (ft)	Building Damage ($)	Contents Damage ($)	Displacement Cost ($)	Disruption Cost ($)	Debris Removal Services ($)	Reduced Insurance Transaction Cost ($)	Total Losses Avoided ($)	Total Project Investment (2010$)	ROI
148	1209-0017	Acquisition	2000 McJenkins Dr, Decatur, GA 30032	North Fork Peachtree Creek	5/13/2002	2 story w/o basement	$ 299,215.00	850.00								$ -	$ -	$ 267,445.57	0.0%
142	1071-004	Acquisition	2023 Audubon Dr, Atlanta, GA 30329	Unnamed North Fork Peachtree Creek Tributary	7/18/2002	1 story w/o basement	$ 146,700.84	864.60								$ -	$ -	$ 167,878.71	0.0%
143	1071-004	Acquisition	2263 Melinda Dr, Atlanta, GA 30345	North Fork Peachtree Creek	7/18/2002	2 story w/o basement	$ 197,165.69	858.80								$ -	$ -	$ 164,078.39	0.0%
144	1071-004	Acquisition	1989 Queens Way, Chamblee, GA 30341	Nancy Creek	7/18/2002	1 story w/o basement	$ 239,883.91	924.00								$ -	$ -	$ 228,683.67	0.0%
145	1071-004	Acquisition	3164 Bobbie Lane, Decatur, GA 30032	Cobbs Creek	7/18/2002	2 story w/o basement	$ 160,981.79	931.10								$ -	$ -	$ 99,470.59	0.0%
146	1071-004	Acquisition	649 Cheviot Dr, Decatur, GA 30032	Indian Creek	7/18/2002	2 story w/o basement	$ 196,952.48	882.20	881.39	-0.81	$ 8,282.18	$ 3,476.58	$ -	$ 4,140.12	$ 470.05	$ 925.00	$ 17,293.92	$ 102,006.66	17.0%
147	1071-004	Acquisition	665 Cheviot Dr, Decatur, GA 30032	Indian Creek	7/18/2002	2 story w/o basement	$ 228,000.80	881.80	880.64	-1.16	$ 5,759.91	$ 1,919.97	$ -	$ 3,385.01	$ 242.55	$ -	$ 11,307.45	$ 114,674.36	9.9%
2	1209-0042	Acquisition	6251 Cathedral Lane, Lithonia, GA 30030	Stephenson Creek	5/22/2003	2 story w/o basement	$ 225,157.59	686.50											
1	1209-0042	Acquisition	3230 Barkside Court, Chamblee, GA 30030	North Fork Peachtree Creek	5/23/2003	2 story w/o basement	$ 250,382.70	884.30											
6	1209-0042	Acquisition	2293 Hunting Valley, Decatur, GA 30030	South Fork Peachtree Creek	6/10/2003	2 story w/o basement	$ 145,351.00	895.50											
4	1209-0042	Acquisition	671 Cheviot Drive, Decatur, GA 30030	Indian Creek	6/12/2003	2 story w/o basement	$ 297,752.40	880.10											
5	1209-0042	Acquisition	2441 Green Forrest, Decatur, GA 30030	Shoal Creek	7/24/2003	2 story w/o basement	$ 104,220.55	822.40											
7	1209-0042	Acquisition	2133 Medfield Trail NE, Atlanta, GA 30345	North Fork Peachtree Creek	4/16/2004	2 story w/o basement	$ 156,423.83	847.00											
11	1209-0042	Acquisition	683 Cheviot Drive, Decatur, GA 30032	Indian Creek	5/14/2004	2 story w/o basement	$ 162,080.80	881.90											
10	1209-0042	Acquisition	677 Cheviot Drive, Decatur, GA 30032	Indian Creek	5/19/2004	2 story w/o basement	$ 239,024.73	880.00											
12	1209-0042	Acquisition	687 Cheviot Drive, Decatur, GA 30032	Indian Creek	6/1/2004	2 story w/o basement	$ 183,932.77	881.90											
13	1209-0042	Acquisition	686 Heathmoor Pl, Decatur, GA 30032	Indian Creek	6/16/2004	1 story w/o basement	$ 109,259.83	879.60											
3	1209-0042	Acquisition	657 Cheviot Drive, Decatur, GA 30032	Indian Creek	8/11/2004	2 story w/o basement	$ 250,299.27	880.10											
201	1209-0042	Acquisition	2333 Poplar Springs Dr NE, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	11/18/2004	2 story w/o basement	$ 182,922.31	852.54											
9	1209-0042	Acquisition	643 Cheviot Drive, Decatur, GA 30032	Indian Creek	12/3/2004	2 story w/o basement	$ 265,262.60	880.00											
14	1209-0042	Acquisition	694 Heathmoor Pl, Decatur, GA 30032	Indian Creek	3/31/2005	1 story w/o basement	$ 140,312.02	880.50											
15	1209-0042	Acquisition	621 Densley Drive, Decatur, GA 30033	South Fork Peachtree Creek Tributary	3/31/2005	2 story w/o basement	$ 161,651.37	884.60											
16	1209-0042	Acquisition	3743 Kingswood Dr, Decatur, GA 30032	Indian Creek	3/31/2005	2 story w/o basement	$ 227,159.82	883.20											
17	1209-0042	Acquisition	2402 Drew Valley, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	3/31/2005	1 story w/o basement	$ 86,600.34	875.91											
18	1209-0042	Acquisition	2396 Drew Valley, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	3/31/2005	1 story w/o basement	$ 168,795.58	875.09											
19	1209-0042	Acquisition	2390 Drew Valley, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	3/31/2005	1 story w/o basement	$ 139,201.29	874.48											
20	1209-0042	Acquisition	2319 Poplar Springs Dr NE, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	3/31/2005	2 story w/o basement	$ 186,834.25	850.30											
21	1209-0042	Acquisition	2327 Poplar Springs Dr NE, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	3/31/2005	2 story w/o basement	$ 178,540.94	851.23											
126	1209-0042	Acquisition	2301 Poplar Springs, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	3/31/2005	2 story w/o basement	$ 238,463.54	851.20											

Table D.2 (part 2 of 4)

Summary of Losses Avoided and ROI Calculations for DeKalb County, September 2002 Event

No.	Disaster/ Proj No	Project Type	Address	Flooding Source	Mitigation Completion Date	Building Type	BRV (2010$)	FFE (ft, NGVD29)	WSE for Event (ft, NGVD29)	Final Flood Depth (ft)	Building Damage ($)	Contents Damage ($)	Displacement Cost ($)	Disruption Cost ($)	Debris Removal Services ($)	Reduced Insurance Transaction Cost ($)	Total Losses Avoided ($)	Total Project Investment (2010$)	ROI
65	1209-059	Acquisition	2813 Riderwood Dr, Decatur, GA 30033	Burnt Fork Creek	6/9/2005	2 story w/o basement	$ 304,544.63	956.30											
66	1209-059	Acquisition	3636 Bishop Dr, Tucker, GA 30084	Unnamed South Fork Peachtree Tributary	6/9/2005	1 story w/o basement	$ 176,840.70	1010.00											
67	1209-059	Acquisition	2157 Medfield Tr, Atlanta, GA 30345	North Fork Peachtree Creek	6/9/2005	1 story w/o basement	$ 138,773.75	846.90											
68	1209-059	Acquisition	2342 Nesbitt Dr, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	6/9/2005	1 story w/o basement	$ 117,179.68	855.00											
141	PDM-2005-PJ5	Acquisition	3141 Buford Highway, Atlanta, GA 30329	North Fork Peachtree Creek	8/9/2007	2 story w/o basement	$ 911,552.55	833.80											
170	PDM-PJ-04-GA-2006-002	Acquisition	1991 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	10/1/2007	Split level w/o basement	$ 203,531.24	921.60											
174	PDM-PJ-04-GA-2006-002	Acquisition	1946 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	10/16/2007	1 story w/o basement	$ 186,816.61	922.59											
172	PDM-PJ-04-GA-2006-002	Acquisition	1954 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	10/22/2007	Split level w/o basement	$ 232,883.77	923.01											
171	PDM-PJ-04-GA-2006-002	Acquisition	1947 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	10/28/2007	Split level w/o basement	$ 209,034.84	920.97											
173	PDM-PJ-04-GA-2006-002	Acquisition	1955 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	10/28/2007	2 story w/o basement	$ 208,525.25	925.09											
169	PDM-PJ-04-GA-2006-002	Acquisition	1939 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	11/12/2007	1 Story w/o basement	$ 221,061.23	922.03											
166	PDM-PJ-04-GA-2006-002	Acquisition	1915 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	4/18/2008	Split level w/o basement	$ 226,768.66	920.78											
167	PDM-PJ-04-GA-2006-002	Acquisition	1923 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	6/1/2008	Split level w/o basement	$ 274,364.60	920.67											
168	PDM-PJ-04-GA-2006-002	Acquisition	1931 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	6/1/2008	1 Story w/o basement	$ 216,067.22	924.20											
52	PDMC-PJ-04-2005-001	Acquisition	3139 Buford Highway, Atlanta, GA 30329	North Fork Peachtree Creek	7/30/2008	2 story w/o basement	$1,015,515.93	834.20											
53	PDMC-PJ-04-2005-001	Acquisition	3145 Buford Highway, Atlanta, GA 30329	North Fork Peachtree Creek	7/30/2008	2 story w/o basement	$1,015,515.93	832.50											
54	PDMC-PJ-04-2005-001	Acquisition	3143 Buford Highway, Atlanta, GA 30329	North Fork Peachtree Creek	7/30/2008	2 story w/o basement	$1,015,515.93	832.80											
194	PDMC-PJ-04-GA-2007-001	Acquisition	520 Weschester, Decatur, GA 30030	Peavine Creek Tributary	11/18/2008	1 story w/o basement	$ 204,952.38	926.90											
195	PDMC-PJ-04-GA-2007-001	Acquisition	514 Weschester, Decatur, GA 30030	Peavine Creek Tributary	11/18/2008	1 story w/o basement	$ 198,885.84	926.58											
196	PDMC-PJ-04-GA-2007-001	Acquisition	526 Weschester, Decatur, GA 30030	Peavine Creek Tributary	11/18/2008	1 story w/o basement	$ 125,329.10	926.24											
197	PDMC-PJ-04-GA-2007-001	Acquisition	532 Weschester, Decatur, GA 30030	Peavine Creek Tributary	11/18/2008	2 story w/o basement	$ 199,987.27	925.00											
179	FMA-2007-PJ2	Acquisition	3227 Wake Robin Trail, Chamblee, GA 30341	Henderson Mill Creek	11/20/2008	2 story w/o basement	$ 303,309.46	900.21											
22	PDM-2005-PJ2	Acquisition	2148 Drew Valley, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 190,178.97	849.23											
23	PDM-2005-PJ2	Acquisition	2154 Drew Valley, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 158,983.03	848.37											
24	PDM-2005-PJ2	Acquisition	2158 Drew Valley, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 165,764.76	849.67											
25	PDM-2005-PJ2	Acquisition	2166 Drew Valley, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 113,739.23	849.60											
26	PDM-2005-PJ2	Acquisition	2292 Burch Circle NE, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 118,389.56	852.61											
27	PDM-2005-PJ2	Acquisition	2298 Burch Circle, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 211,880.50	853.04											
28	PDM-2005-PJ2	Acquisition	2304 Burch Circle, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 161,889.49	853.05											
29	PDM-2005-PJ2	Acquisition	2310 Burch Circle, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 116,064.40	853.76											
30	PDM-2005-PJ2	Acquisition	2329 Nesbitt Drive, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 114,611.17	854.25											
31	PDM-2005-PJ2	Acquisition	2335 Nesbitt Drive, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 111,317.19	853.76											

Table D.2 (part 3 of 4)

Summary of Losses Avoided and ROI Calculations for DeKalb County, September 2002 Event

No.	Disaster/ Proj No	Project Type	Address	Flooding Source	Mitigation Completion Date	Building Type	BRV (2010$)	FFE (ft, NGVD29)	WSE for Event (ft, NGVD29)	Final Flood Depth (ft)	Building Damage ($)	Contents Damage ($)	Displacement Cost ($)	Disruption Cost ($)	Debris Removal Services ($)	Reduced Insurance Transaction Cost ($)	Total Losses Avoided ($)	Total Project Investment (2010$)	ROI
32	PDM-2005-PJ2	Acquisition	2339 Nesbitt Drive, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 107,248.15	854.64											
33	PDM-2005-PJ2	Acquisition	2361 Bynum Rd, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 122,361.71	860.02											
34	PDM-2005-PJ2	Acquisition	2387 Drew Valley, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 120,908.49	866.39											
35	PDM-2005-PJ2	Acquisition	2406 Drew Valley, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o Basement	$ 149,682.38	875.91											
36	PDM-2005-PJ2	Acquisition	2411 Oostanuala Dr, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 180,103.27	878.26											
160	PDMC-PJ-04-GA-2007-005	Acquisition	2313 Hunting Valley Dr, Decatur, GA 30033	South Fork Peachtree Creek	1/12/2009	1 story w/o basement	$ 123,729.06	898.50											
191	PDMC-PJ-04-GA-2007-006	Acquisition	678 Heathmoor Pl, Decatur, GA 30032	Indian Creek	1/16/2009	1 story w/o basement	$ 146,859.05	883.70											
158	PDMC-PJ-04-GA-2007-005	Acquisition	2331 Hunting Valley Dr, Decatur, GA 30033	South Fork Peachtree Creek	1/29/2009	1 story w/o basement	$ 148,393.34	898.30											
176	FMA-2007-PJ2	Acquisition	2380 Bynum Road, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	1/30/2009	2 story w/o basement	$ 236,450.92	863.00											
181	FMA-2007-PJ2	Acquisition	2151 Medfield Trail NE, Atlanta, GA 30345	North Fork Peachtree Creek	1/30/2009	1 story w/o basement	$ 122,506.04	848.30											
175	FMA-2007-PJ2	Acquisition	2746 Dunnington Circle, Atlanta, GA 30341	Peachtree Branch of Henderson Mill Creek	2/10/2009	2 story w/o basement	$ 273,651.17	891.90											
178	FMA-2007-PJ2	Acquisition	2506 Nancy Lane, Atlanta, GA 30345	North Fork Peachtree Creek	2/10/2009	Split level w/o basement	$ 364,868.23	859.70											
182	FMA-2007-PJ2	Acquisition	3197 Barkside Court, Atlanta, GA 30341	North Fork Peachtree Creek	2/10/2009	2 story w/o basement	$ 192,625.97	892.00											
183	FMA-2007-PJ2	Acquisition	3208 Windsor Forest Road, Chamblee, GA 30341	North Fork Peachtree Creek	2/10/2009	Split level w/o basement	$ 176,319.01	884.20											
73	FMA-PJ-04-GA-2006-005	Acquisition	1986 Royal Ct, Chamblee, GA 30341	Nancy Creek	3/30/2009	2 story w/o basement	$ 252,350.21	925.98											
74	FMA-PJ-04-GA-2006-005	Acquisition	1965 Royal Ct, Atlanta, GA 30341	Nancy Creek	3/30/2009	2 story w/o basement	$ 216,780.65	925.29											
75	FMA-PJ-04-GA-2006-005	Acquisition	1976 Queens Way, Chamblee, GA 30341	Nancy Creek	3/30/2009	1 story w/o basement	$ 237,572.02	922.12											
157	PDMC-PJ-04-GA-2007-005	Acquisition	2337 Hunting Valley Dr, Decatur, GA 30033	South Fork Peachtree Creek	4/20/2009	1 story w/o basement	$ 123,729.06	899.40											
159	PDMC-PJ-04-GA-2007-005	Acquisition	2325 Hunting Valley Dr, Decatur, GA 30033	South Fork Peachtree Creek	6/22/2009	1 story w/o basement	$ 123,729.06	899.50											
55	RFC-PJ-04-GA-2006-001	Acquisition	1977 Queens Way, Chamblee, GA 30341	Nancy Creek	6/30/2009	Split level w/o basement	$ 307,284.28	920.95											
56	RFC-PJ-04-GA-2006-001	Acquisition	1982 Queens Way, Chamblee, GA 30341	Nancy Creek	6/30/2009	2 story w/o basement	$ 206,894.56	924.45											
57	RFC-PJ-04-GA-2006-001	Acquisition	1988 Queens Way, Chamblee, GA 30341	Nancy Creek	6/30/2009	2 story w/o basement	$ 240,527.66	919.84											
58	RFC-PJ-04-GA-2006-001	Acquisition	2003 Royal Court, Chamblee, GA 30341	Nancy Creek	6/30/2009	2 story w/o basement	$ 247,152.36	924.03											
59	RFC-PJ-04-GA-2006-001	Acquisition	2006 Royal Court, Chamblee, GA 30341	Nancy Creek	6/30/2009	1 story w/o basement	$ 224,730.29	922.75											
60	RFC-PJ-04-GA-2006-001	Acquisition	2014 Royal Court, Chamblee, GA 30341	Nancy Creek	6/30/2009	1 story w/o basement	$ 227,380.17	922.23											
177	FMA-2007-PJ2	Acquisition	1748 Dresden Drive , Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	7/10/2009	1 story w/o basement	$ 137,793.81	877.50											
154	PDMC-PJ-04-GA-2007-005	Acquisition	2814 Riderwood Dr, Decatur, GA 30033	Burnt Fork Creek	7/24/2009	1 story w/o basement	$ 171,426.92	960.10											
155	PDMC-PJ-04-GA-2007-005	Acquisition	2820 Riderwood Dr, Decatur, GA 30033	Burnt Fork Creek	7/24/2009	1 story w/o basement	$ 145,437.70	960.10											
161	PDMC-PJ-04-GA-2007-005	Acquisition	2397 Hunting Valley Dr, Decatur, GA 30033	South Fork Peachtree Creek	7/24/2009	1 story w/o basement	$ 146,354.97	899.40											
162	PDMC-PJ-04-GA-2007-005	Acquisition	1031 Scott Circle, Decatur, GA 30033	South Fork Peachtree Creek	7/24/2009	1 story w/o basement	$ 115,575.58	897.50											

Table D.2 (part 4 of 4)

Summary of Losses Avoided and ROI Calculations for DeKalb County, September 2002 Event

No.	Disaster/ Proj No	Project Type	Address	Flooding Source	Mitigation Completion Date	Building Type	BRV (2010$)	FFE (ft, NGVD29)	WSE for Event (ft, NGVD29)	Final Flood Depth (ft)	Building Damage ($)	Contents Damage ($)	Displacement Cost ($)	Disruption Cost ($)	Debris Removal Services ($)	Reduced Insurance Transaction Cost ($)	Total Losses Avoided ($)	Total Project Investment (2010$)	ROI
165	PDMC-PJ-04-GA-2007-005	Acquisition	999 Scott Circle, Decatur, GA 30033	South Fork Peachtree Creek	7/24/2009	1 story w/o basement	$ 199,658.34	899.50											
163	PDMC-PJ-04-GA-2007-005	Acquisition	1023 Scott Circle, Decatur, GA 30033	South Fork Peachtree Creek	7/27/2009	1 story w/o basement	$ 115,575.58	898.60											
164	PDMC-PJ-04-GA-2007-005	Acquisition	1005 Scott Circle, Decatur, GA 30033	South Fork Peachtree Creek	8/14/2009	1 story w/o basement	$ 130,965.27	899.60											
76	RFC-PJ-04-GA-001	Acquisition	631 Densley Dr, Decatur, GA 30033	South Fork Peachtree Creek Tributary	9/30/2009	2 story w/o basement	$ 296,371.05	883.60											
78	RFC-2007	Acquisition	2056 Desmond Dr, Decatur, GA 30033	South Fork Peachtree Creek Tributary	9/30/2009	1 story w/o basement	$ 186,435.85	881.50											
										TOTAL	$ 14,042.10	$ 5,396.55	$ -	$ 7,525.13	$ 712.60	$ 925.00	$ 28,601.38	$ 1,144,237.94	2.50%

BRV = building replacement value
FFE = first floor elevation
ft = feet
NGVD29 = National Geodetic Vertical Datum of 1929
ROI = Return on Investment
WSE = water surface elevation

Indicates property was not mitigated at time of the storm event.

Table D.3 (part 1 of 4)

Summary of Losses Avoided and ROI Calculations for DeKalb County, May 2003 Event

No.	Disaster/ Proj No	Project Type	Address	Flooding Source	Mitigation Completion Date	Building Type	BRV (2010$)	FFE (ft, NGVD29)	WSE for Event (ft, NGVD29)	Final Flood Depth (ft)	Building Damage ($)	Contents Damage ($)	Displacement Cost ($)	Disruption Cost ($)	Debris Removal Services ($)	Reduced Insurance Transaction Cost ($)	Total Losses Avoided ($)	Total Project Investment (2010$)	ROI
148	1209-0017	Acquisition	2000 McJenkins Dr, Decatur, GA 30032	North Fork Peachtree Creek	5/13/2002	2 story w/o basement	$ 299,215.00	850.00								$ -	$ -	$ 267,445.57	0.0%
142	1071-004	Acquisition	2023 Audubon Dr, Atlanta, GA 30329	Unnamed North Fork Peachtree Creek Tributary	7/18/2002	1 story w/o basement	$ 146,700.84	864.60								$ -	$ -	$ 167,878.71	0.0%
143	1071-004	Acquisition	2263 Melinda Dr, Atlanta, GA 30345	North Fork Peachtree Creek	7/18/2002	2 story w/o basement	$ 197,165.69	858.80								$ -	$ -	$ 164,078.39	0.0%
144	1071-004	Acquisition	1989 Queens Way, Chamblee, GA 30341	Nancy Creek	7/18/2002	1 story w/o basement	$ 239,883.91	924.00								$ -	$ -	$ 228,683.67	0.0%
145	1071-004	Acquisition	3164 Bobbie Lane, Decatur, GA 30032	Cobbs Creek	7/18/2002	2 story w/o basement	$ 160,981.79	931.10								$ -	$ -	$ 99,470.59	0.0%
146	1071-004	Acquisition	649 Cheviot Dr, Decatur, GA 30032	Indian Creek	7/18/2002	2 story w/o basement	$ 196,952.48	882.20	881.22	-0.98	$ 6,173.79	$ 2,137.92	$ -	$ 3,658.64	$ 349.14	$ 800.00	$ 13,119.49	$ 102,006.66	12.9%
147	1071-004	Acquisition	665 Cheviot Dr, Decatur, GA 30032	Indian Creek	7/18/2002	2 story w/o basement	$ 228,000.80	881.80	880.48	-1.32	$ 4,656.93	$ 1,552.31	$ -	$ 3,167.44	$ 196.10	$ -	$ 9,572.78	$ 114,674.36	8.3%
2	1209-0042	Acquisition	6251 Cathedral Lane, Lithonia, GA 30030	Stephenson Creek	5/22/2003	2 story w/o basement	$ 225,157.59	686.50											
1	1209-0042	Acquisition	3230 Barkside Court, Chamblee, GA 30030	North Fork Peachtree Creek	5/23/2003	2 story w/o basement	$ 250,382.70	884.30											
6	1209-0042	Acquisition	2293 Hunting Valley, Decatur, GA 30030	South Fork Peachtree Creek	6/10/2003	2 story w/o basement	$ 145,351.00	895.50											
4	1209-0042	Acquisition	671 Cheviot Drive, Decatur, GA 30030	Indian Creek	6/12/2003	2 story w/o basement	$ 297,752.40	880.10											
5	1209-0042	Acquisition	2441 Green Forrest, Decatur, GA 30030	Shoal Creek	7/24/2003	2 story w/o basement	$ 104,220.55	822.40											
7	1209-0042	Acquisition	2133 Medfield Trail NE, Atlanta, GA 30345	North Fork Peachtree Creek	4/16/2004	2 story w/o basement	$ 156,423.83	847.00											
11	1209-0042	Acquisition	683 Cheviot Drive, Decatur, GA 30032	Indian Creek	5/14/2004	2 story w/o basement	$ 162,080.80	881.90											
10	1209-0042	Acquisition	677 Cheviot Drive, Decatur, GA 30032	Indian Creek	5/19/2004	2 story w/o basement	$ 239,024.73	880.00											
12	1209-0042	Acquisition	687 Cheviot Drive, Decatur, GA 30032	Indian Creek	6/1/2004	2 story w/o basement	$ 183,932.77	881.90											
13	1209-0042	Acquisition	686 Heathmoor Pl, Decatur, GA 30032	Indian Creek	6/16/2004	1 story w/o basement	$ 109,259.83	879.60											
3	1209-0042	Acquisition	657 Cheviot Drive, Decatur, GA 30032	Indian Creek	8/11/2004	2 story w/o basement	$ 250,299.27	880.10											
201	1209-0042	Acquisition	2333 Poplar Springs Dr NE, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	11/18/2004	2 story w/o basement	$ 182,922.31	852.54											
9	1209-0042	Acquisition	643 Cheviot Drive, Decatur, GA 30032	Indian Creek	12/3/2004	2 story w/o basement	$ 265,262.60	880.00											
14	1209-0042	Acquisition	694 Heathmoor Pl, Decatur, GA 30032	Indian Creek	3/31/2005	1 story w/o basement	$ 140,312.02	880.50											
15	1209-0042	Acquisition	621 Densley Drive, Decatur, GA 30033	South Fork Peachtree Creek Tributary	3/31/2005	2 story w/o basement	$ 161,651.37	884.60											
16	1209-0042	Acquisition	3743 Kingswood Dr, Decatur, GA 30032	Indian Creek	3/31/2005	2 story w/o basement	$ 227,159.82	883.20											
17	1209-0042	Acquisition	2402 Drew Valley, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	3/31/2005	1 story w/o basement	$ 86,600.34	875.91											
18	1209-0042	Acquisition	2396 Drew Valley, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	3/31/2005	1 story w/o basement	$ 168,795.58	875.09											
19	1209-0042	Acquisition	2390 Drew Valley, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	3/31/2005	1 story w/o basement	$ 139,201.29	874.48											
20	1209-0042	Acquisition	2319 Poplar Springs Dr NE, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	3/31/2005	2 story w/o basement	$ 186,834.25	850.30											
21	1209-0042	Acquisition	2327 Poplar Springs Dr NE, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	3/31/2005	2 story w/o basement	$ 178,540.94	851.23											
126	1209-0042	Acquisition	2301 Poplar Springs, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	3/31/2005	2 story w/o basement	$ 238,463.54	851.20											

Table D.3 (part 2 of 4)

Summary of Losses Avoided and ROI Calculations for DeKalb County, May 2003 Event

No.	Disaster/ Proj No	Project Type	Address	Flooding Source	Mitigation Completion Date	Building Type	BRV (2010$)	FFE (ft, NGVD29)	WSE for Event (ft, NGVD29)	Final Flood Depth (ft)	Building Damage ($)	Contents Damage ($)	Displacement Cost ($)	Disruption Cost ($)	Debris Removal Services ($)	Reduced Insurance Transaction Cost ($)	Total Losses Avoided ($)	Total Project Investment (2010$)	ROI
65	1209-059	Acquisition	2813 Riderwood Dr, Decatur, GA 30033	Burnt Fork Creek	6/9/2005	2 story w/o basement	$ 304,544.63	956.30											
66	1209-059	Acquisition	3636 Bishop Dr, Tucker, GA 30084	Unnamed South Fork Peachtree Tributary	6/9/2005	1 story w/o basement	$ 176,840.70	1010.00											
67	1209-059	Acquisition	2157 Medfield Tr, Atlanta, GA 30345	North Fork Peachtree Creek	6/9/2005	1 story w/o basement	$ 138,773.75	846.90											
68	1209-059	Acquisition	2342 Nesbitt Dr, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	6/9/2005	1 story w/o basement	$ 117,179.68	855.00											
141	PDM-2005-PJ5	Acquisition	3141 Buford Highway, Atlanta, GA 30329	North Fork Peachtree Creek	8/9/2007	2 story w/o basement	$ 911,552.55	833.80											
170	PDM-PJ-04-GA-2006-002	Acquisition	1991 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	10/1/2007	Split level w/o basement	$ 203,531.24	921.60											
174	PDM-PJ-04-GA-2006-002	Acquisition	1946 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	10/16/2007	1 story w/o basement	$ 186,816.61	922.59											
172	PDM-PJ-04-GA-2006-002	Acquisition	1954 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	10/22/2007	Split level w/o basement	$ 232,883.77	923.01											
171	PDM-PJ-04-GA-2006-002	Acquisition	1947 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	10/28/2007	Split level w/o basement	$ 209,034.84	920.97											
173	PDM-PJ-04-GA-2006-002	Acquisition	1955 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	10/28/2007	2 story w/o basement	$ 208,525.25	925.09											
169	PDM-PJ-04-GA-2006-002	Acquisition	1939 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	11/12/2007	1 Story w/o basement	$ 221,061.23	922.03											
166	PDM-PJ-04-GA-2006-002	Acquisition	1915 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	4/18/2008	Split level w/o basement	$ 226,768.66	920.78											
167	PDM-PJ-04-GA-2006-002	Acquisition	1923 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	6/1/2008	Split level w/o basement	$ 274,364.60	920.67											
168	PDM-PJ-04-GA-2006-002	Acquisition	1931 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	6/1/2008	1 Story w/o basement	$ 216,067.22	924.20											
52	PDMC-PJ-04-2005-001	Acquisition	3139 Buford Highway, Atlanta, GA 30329	North Fork Peachtree Creek	7/30/2008	2 story w/o basement	$1,015,515.93	834.20											
53	PDMC-PJ-04-2005-001	Acquisition	3145 Buford Highway, Atlanta, GA 30329	North Fork Peachtree Creek	7/30/2008	2 story w/o basement	$1,015,515.93	832.50											
54	PDMC-PJ-04-2005-001	Acquisition	3143 Buford Highway, Atlanta, GA 30329	North Fork Peachtree Creek	7/30/2008	2 story w/o basement	$1,015,515.93	832.80											
194	PDMC-PJ-04-GA-2007-001	Acquisition	520 Weschester, Decatur, GA 30030	Peavine Creek Tributary	11/18/2008	1 story w/o basement	$ 204,952.38	926.90											
195	PDMC-PJ-04-GA-2007-001	Acquisition	514 Weschester, Decatur, GA 30030	Peavine Creek Tributary	11/18/2008	1 story w/o basement	$ 198,885.84	926.58											
196	PDMC-PJ-04-GA-2007-001	Acquisition	526 Weschester, Decatur, GA 30030	Peavine Creek Tributary	11/18/2008	1 story w/o basement	$ 125,329.10	926.24											
197	PDMC-PJ-04-GA-2007-001	Acquisition	532 Weschester, Decatur, GA 30030	Peavine Creek Tributary	11/18/2008	2 story w/o basement	$ 199,987.27	925.00											
179	FMA-2007-PJ2	Acquisition	3227 Wake Robin Trail, Chamblee, GA 30341	Henderson Mill Creek	11/20/2008	2 story w/o basement	$ 303,309.46	900.21											
22	PDM-2005-PJ2	Acquisition	2148 Drew Valley, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 190,178.97	849.23											
23	PDM-2005-PJ2	Acquisition	2154 Drew Valley, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 158,983.03	848.37											
24	PDM-2005-PJ2	Acquisition	2158 Drew Valley, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 165,764.76	849.67											
25	PDM-2005-PJ2	Acquisition	2166 Drew Valley, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 113,739.23	849.60											
26	PDM-2005-PJ2	Acquisition	2292 Burch Circle NE, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 118,389.56	852.61											
27	PDM-2005-PJ2	Acquisition	2298 Burch Circle, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 211,880.50	853.04											
28	PDM-2005-PJ2	Acquisition	2304 Burch Circle, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 161,889.49	853.05											
29	PDM-2005-PJ2	Acquisition	2310 Burch Circle, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 116,064.40	853.76											
30	PDM-2005-PJ2	Acquisition	2329 Nesbitt Drive, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 114,611.17	854.25											
31	PDM-2005-PJ2	Acquisition	2335 Nesbitt Drive, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 111,317.19	853.76											

Table D.3 (part 3 of 4)

Summary of Losses Avoided and ROI Calculations for DeKalb County, May 2003 Event

No.	Disaster/ Proj No	Project Type	Address	Flooding Source	Mitigation Completion Date	Building Type	BRV (2010$)	FFE (ft, NGVD29)	WSE for Event (ft, NGVD29)	Final Flood Depth (ft)	Building Damage ($)	Contents Damage ($)	Displacement Cost ($)	Disruption Cost ($)	Debris Removal Services ($)	Reduced Insurance Transaction Cost ($)	Total Losses Avoided ($)	Total Project Investment (2010$)	ROI
32	PDM-2005-PJ2	Acquisition	2339 Nesbitt Drive, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 107,248.15	854.64											
33	PDM-2005-PJ2	Acquisition	2361 Bynum Rd, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 122,361.71	860.02											
34	PDM-2005-PJ2	Acquisition	2387 Drew Valley, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 120,908.49	866.39											
35	PDM-2005-PJ2	Acquisition	2406 Drew Valley, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o Basement	$ 149,682.38	875.91											
36	PDM-2005-PJ2	Acquisition	2411 Oostanuala Dr, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 180,103.27	878.26											
160	PDMC-PJ-04-GA-2007-005	Acquisition	2313 Hunting Valley Dr, Decatur, GA 30033	South Fork Peachtree Creek	1/12/2009	1 story w/o basement	$ 123,729.06	898.50											
191	PDMC-PJ-04-GA-2007-006	Acquisition	678 Heathmoor Pl, Decatur, GA 30032	Indian Creek	1/16/2009	1 story w/o basement	$ 146,859.05	883.70											
158	PDMC-PJ-04-GA-2007-005	Acquisition	2331 Hunting Valley Dr, Decatur, GA 30033	South Fork Peachtree Creek	1/29/2009	1 story w/o basement	$ 148,393.34	898.30											
176	FMA-2007-PJ2	Acquisition	2380 Bynum Road, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	1/30/2009	2 story w/o basement	$ 236,450.92	863.00											
181	FMA-2007-PJ2	Acquisition	2151 Medfield Trail NE, Atlanta, GA 30345	North Fork Peachtree Creek	1/30/2009	1 story w/o basement	$ 122,506.04	848.30											
175	FMA-2007-PJ2	Acquisition	2746 Dunnington Circle, Atlanta, GA 30341	Peachtree Branch of Henderson Mill Creek	2/10/2009	2 story w/o basement	$ 273,651.17	891.90											
178	FMA-2007-PJ2	Acquisition	2506 Nancy Lane, Atlanta, GA 30345	North Fork Peachtree Creek	2/10/2009	Split level w/o basement	$ 364,868.23	859.70											
182	FMA-2007-PJ2	Acquisition	3197 Barkside Court, Atlanta, GA 30341	North Fork Peachtree Creek	2/10/2009	2 story w/o basement	$ 192,625.97	892.00											
183	FMA-2007-PJ2	Acquisition	3208 Windsor Forest Road, Chamblee, GA 30341	North Fork Peachtree Creek	2/10/2009	Split level w/o basement	$ 176,319.01	884.20											
73	FMA-PJ-04-GA-2006-005	Acquisition	1986 Royal Ct, Chamblee, GA 30341	Nancy Creek	3/30/2009	2 story w/o basement	$ 252,350.21	925.98											
74	FMA-PJ-04-GA-2006-005	Acquisition	1965 Royal Ct, Atlanta, GA 30341	Nancy Creek	3/30/2009	2 story w/o basement	$ 216,780.65	925.29											
75	FMA-PJ-04-GA-2006-005	Acquisition	1976 Queens Way, Chamblee, GA 30341	Nancy Creek	3/30/2009	1 story w/o basement	$ 237,572.02	922.12											
157	PDMC-PJ-04-GA-2007-005	Acquisition	2337 Hunting Valley Dr, Decatur, GA 30033	South Fork Peachtree Creek	4/20/2009	1 story w/o basement	$ 123,729.06	899.40											
159	PDMC-PJ-04-GA-2007-005	Acquisition	2325 Hunting Valley Dr, Decatur, GA 30033	South Fork Peachtree Creek	6/22/2009	1 story w/o basement	$ 123,729.06	899.50											
55	RFC-PJ-04-GA-2006-001	Acquisition	1977 Queens Way, Chamblee, GA 30341	Nancy Creek	6/30/2009	Split level w/o basement	$ 307,284.28	920.95											
56	RFC-PJ-04-GA-2006-001	Acquisition	1982 Queens Way, Chamblee, GA 30341	Nancy Creek	6/30/2009	2 story w/o basement	$ 206,894.56	924.45											
57	RFC-PJ-04-GA-2006-001	Acquisition	1988 Queens Way, Chamblee, GA 30341	Nancy Creek	6/30/2009	2 story w/o basement	$ 240,527.66	919.84											
58	RFC-PJ-04-GA-2006-001	Acquisition	2003 Royal Court, Chamblee, GA 30341	Nancy Creek	6/30/2009	2 story w/o basement	$ 247,152.36	924.03											
59	RFC-PJ-04-GA-2006-001	Acquisition	2006 Royal Court, Chamblee, GA 30341	Nancy Creek	6/30/2009	1 story w/o basement	$ 224,730.29	922.75											
60	RFC-PJ-04-GA-2006-001	Acquisition	2014 Royal Court, Chamblee, GA 30341	Nancy Creek	6/30/2009	1 story w/o basement	$ 227,380.17	922.23											
177	FMA-2007-PJ2	Acquisition	1748 Dresden Drive , Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	7/10/2009	1 story w/o basement	$ 137,793.81	877.50											
154	PDMC-PJ-04-GA-2007-005	Acquisition	2814 Riderwood Dr, Decatur, GA 30033	Burnt Fork Creek	7/24/2009	1 story w/o basement	$ 171,426.92	960.10											
155	PDMC-PJ-04-GA-2007-005	Acquisition	2820 Riderwood Dr, Decatur, GA 30033	Burnt Fork Creek	7/24/2009	1 story w/o basement	$ 145,437.70	960.10											
161	PDMC-PJ-04-GA-2007-005	Acquisition	2397 Hunting Valley Dr, Decatur, GA 30033	South Fork Peachtree Creek	7/24/2009	1 story w/o basement	$ 146,354.97	899.40											
162	PDMC-PJ-04-GA-2007-005	Acquisition	1031 Scott Circle, Decatur, GA 30033	South Fork Peachtree Creek	7/24/2009	1 story w/o basement	$ 115,575.58	897.50											

Table D.3 (part 4 of 4)

Summary of Losses Avoided and ROI Calculations for DeKalb County, May 2003 Event

No.	Disaster/ Proj No	Project Type	Address	Flooding Source	Mitigation Completion Date	Building Type	BRV (2010$)	FFE (ft, NGVD29)	WSE for Event (ft, NGVD29)	Final Flood Depth (ft)	Building Damage ($)	Contents Damage ($)	Displacement Cost ($)	Disruption Cost ($)	Debris Removal Services ($)	Reduced Insurance Transaction Cost ($)	Total Losses Avoided ($)	Total Project Investment (2010$)	ROI
165	PDMC-PJ-04-GA-2007-005	Acquisition	999 Scott Circle, Decatur, GA 30033	South Fork Peachtree Creek	7/24/2009	1 story w/o basement	$ 199,658.34	899.50											
163	PDMC-PJ-04-GA-2007-005	Acquisition	1023 Scott Circle, Decatur, GA 30033	South Fork Peachtree Creek	7/27/2009	1 story w/o basement	$ 115,575.58	898.60											
164	PDMC-PJ-04-GA-2007-005	Acquisition	1005 Scott Circle, Decatur, GA 30033	South Fork Peachtree Creek	8/14/2009	1 story w/o basement	$ 130,965.27	899.60											
76	RFC-PJ-04-GA-001	Acquisition	631 Densley Dr, Decatur, GA 30033	South Fork Peachtree Creek Tributary	9/30/2009	2 story w/o basement	$ 296,371.05	883.60											
78	RFC-2007	Acquisition	2056 Desmond Dr, Decatur, GA 30033	South Fork Peachtree Creek Tributary	9/30/2009	1 story w/o basement	$ 186,435.85	881.50											
										TOTAL	**$ 10,830.72**	**$ 3,690.22**	**$ -**	**$ 6,826.08**	**$ 545.25**	**$ 800.00**	**$ 22,692.27**	**$ 1,144,237.94**	**1.98%**

BRV = building replacement value
FFE = first floor elevation
ft = feet
NGVD29 = National Geodetic Vertical Datum of 1929
ROI = Return on Investment
WSE = water surface elevation

Indicates property was not mitigated at time of the storm event.

Table D.4 (part 1 of 4)

Summary of Losses Avoided and ROI Calculations for DeKalb County, September 2004 Event

No.	Disaster/ Proj No	Project Type	Address	Flooding Source	Mitigation Completion Date	Building Type	BRV (2010$)	FFE (ft, NGVD29)	WSE for Event (ft, NGVD29)	Final Flood Depth (ft)	Building Damage ($)	Contents Damage ($)	Displacement Cost ($)	Disruption Cost ($)	Debris Removal Services ($)	Reduced Insurance Transaction Cost ($)	Total Losses Avoided ($)	Total Project Investment (2010$)	ROI
148	1209-0017	Acquisition	2000 McJenkins Dr, Decatur, GA 30032	North Fork Peachtree Creek	5/13/2002	2 story w/o basement	$ 299,215.00	850.00	854.00	4.00	$ 93,953.51	$ 55,354.78	$ 29,825.75	$ 16,371.26	$ 3,886.74	$ 3,434.09	$ 202,826.13	$ 267,445.57	75.8%
142	1071-004	Acquisition	2023 Audubon Dr, Atlanta, GA 30329	Unnamed North Fork Peachtree Creek Tributary	7/18/2002	1 story w/o basement	$ 146,700.84	864.60	864.00	-0.60	$ 10,063.68	$ 6,865.60	$ -	$ 5,334.15	$ 412.01	$ 1,025.00	$ 23,700.44	$ 167,878.71	14.1%
143	1071-004	Acquisition	2263 Melinda Dr, Atlanta, GA 30345	North Fork Peachtree Creek	7/18/2002	2 story w/o basement	$ 197,165.69	858.80	859.00	0.20	$ 20,662.96	$ 11,317.31	$ 1,112.93	$ 6,962.28	$ 959.86	$ -	$ 41,015.35	$ 164,078.39	25.0%
144	1071-004	Acquisition	1989 Queens Way, Chamblee, GA 30341	Nancy Creek	7/18/2002	1 story w/o basement	$ 239,883.91	924.00	925.00	1.00	$ 55,892.95	$ 31,904.56	$ 5,115.12	$ 12,728.21	$ 3,513.77	$ 2,633.93	$ 111,788.53	$ 228,683.67	48.9%
145	1071-004	Acquisition	3164 Bobbie Lane, Decatur, GA 30032	Cobbs Creek	7/18/2002	2 story w/o basement	$ 160,981.79	931.10	938.00	6.90	$ 71,604.70	$ 41,951.85	$ 35,323.70	$ 22,254.12	$ 3,748.41	$ -	$ 174,882.79	$ 99,470.59	175.8%
146	1071-004	Acquisition	649 Cheviot Dr, Decatur, GA 30032	Indian Creek	7/18/2002	2 story w/o basement	$ 196,952.48	882.20	882.00	-0.20	$ 15,834.98	$ 8,272.00	$ -	$ 5,864.87	$ 903.16	$ 1,025.00	$ 31,900.01	$ 102,006.66	31.3%
147	1071-004	Acquisition	665 Cheviot Dr, Decatur, GA 30032	Indian Creek	7/18/2002	2 story w/o basement	$ 228,000.80	881.80	882.00	0.20	$ 23,894.48	$ 13,087.25	$ 1,178.97	$ 6,962.28	$ 1,018.34	$ -	$ 46,141.32	$ 114,674.36	40.2%
2	1209-0042	Acquisition	6251 Cathedral Lane, Lithonia, GA 30030	Stephenson Creek	5/22/2003	2 story w/o basement	$ 225,157.59	686.50	686.80	0.30	$ 24,924.94	$ 13,757.13	$ 1,347.27	$ 7,227.64	$ 1,458.06	$ -	$ 48,715.05	$ 168,801.42	28.9%
1	1209-0042	Acquisition	3230 Barkside Court, Chamblee, GA 30030	North Fork Peachtree Creek	5/23/2003	2 story w/o basement	$ 250,382.70	884.30	892.00	7.70	$ 119,257.28	$ 69,531.28	$ 43,110.14	$ 23,670.87	$ 7,886.31	$ 4,342.14	$ 267,798.02	$ 321,384.49	83.3%
6	1209-0042	Acquisition	2293 Hunting Valley, Decatur, GA 30030	South Fork Peachtree Creek	6/10/2003	2 story w/o basement	$ 145,351.00	895.50	898.00	2.50	$ 34,302.84	$ 20,131.11	$ 13,570.72	$ 12,863.14	$ 2,112.13	$ -	$ 82,979.94	$ 358,591.86	23.1%
4	1209-0042	Acquisition	671 Cheviot Drive, Decatur, GA 30030	Indian Creek	6/12/2003	2 story w/o basement	$ 297,752.40	880.10	882.00	1.90	$ 60,533.06	$ 35,283.66	$ 13,001.47	$ 11,392.42	$ 2,305.01	$ -	$ 122,515.62	$ 170,384.27	71.9%
5	1209-0042	Acquisition	2441 Green Forrest, Decatur, GA 30030	Shoal Creek	7/24/2003	2 story w/o basement	$ 104,220.55	822.40	824.00	1.60	$ 19,405.87	$ 11,255.82	$ 7,038.88	$ 10,623.33	$ 1,341.98	$ 1,175.00	$ 50,840.88	$ 185,687.59	27.4%
7	1209-0042	Acquisition	2133 Medfield Trail NE, Atlanta, GA 30345	North Fork Peachtree Creek	4/16/2004	2 story w/o basement	$ 156,423.83	847.00	850.00	3.00	$ 41,139.47	$ 24,245.69	$ 13,690.02	$ 14,077.49	$ 1,969.73	$ 1,961.55	$ 97,083.95	$ 274,289.34	35.4%
11	1209-0042	Acquisition	683 Cheviot Drive, Decatur, GA 30032	Indian Creek	5/14/2004	2 story w/o basement	$ 162,080.80	881.90	880.93	-0.97	$ 5,189.25	$ 1,828.32	$ -	$ 3,688.77	$ 313.14	$ -	$ 11,019.48	$ 189,510.43	5.8%
10	1209-0042	Acquisition	677 Cheviot Drive, Decatur, GA 30032	Indian Creek	5/19/2004	2 story w/o basement	$ 239,024.73	880.00	882.00	2.00	$ 49,956.17	$ 29,161.02	$ 12,126.30	$ 11,648.78	$ 2,094.35	$ 2,373.52	$ 107,360.13	$ 179,002.77	60.0%
12	1209-0042	Acquisition	687 Cheviot Drive, Decatur, GA 30032	Indian Creek	6/1/2004	2 story w/o basement	$ 183,932.77	881.90	880.63	-1.27	$ 4,040.62	$ 1,346.87	$ -	$ 3,236.83	$ 193.12	$ 800.00	$ 9,617.44	$ 191,830.47	5.0%
13	1209-0042	Acquisition	686 Heathmoor Pl, Decatur, GA 30032	Indian Creek	6/16/2004	1 story w/o basement	$ 109,259.83	879.60	882.00	2.40	$ 38,568.72	$ 21,349.37	$ 7,720.61	$ 18,125.33	$ 1,833.80	$ -	$ 87,597.83	$ 172,792.50	50.7%
3	1209-0042	Acquisition	657 Cheviot Drive, Decatur, GA 30032	Indian Creek	8/11/2004	2 story w/o basement	$ 250,299.27	880.10	882.00	1.90	$ 50,885.84	$ 29,660.46	$ 11,293.31	$ 11,392.42	$ 1,996.15	$ 2,416.39	$ 107,644.58	$ 188,799.97	57.0%
201	1209-0042	Acquisition	2333 Poplar Springs Dr NE, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	11/18/2004	2 story w/o basement	$ 182,922.31	852.54											
9	1209-0042	Acquisition	643 Cheviot Drive, Decatur, GA 30032	Indian Creek	12/3/2004	2 story w/o basement	$ 265,262.60	880.00											
14	1209-0042	Acquisition	694 Heathmoor Pl, Decatur, GA 30032	Indian Creek	3/31/2005	1 story w/o basement	$ 140,312.02	880.50											
15	1209-0042	Acquisition	621 Densley Drive, Decatur, GA 30033	South Fork Peachtree Creek Tributary	3/31/2005	2 story w/o basement	$ 161,651.37	884.60											
16	1209-0042	Acquisition	3743 Kingswood Dr, Decatur, GA 30032	Indian Creek	3/31/2005	2 story w/o basement	$ 227,159.82	883.20											
17	1209-0042	Acquisition	2402 Drew Valley, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	3/31/2005	1 story w/o basement	$ 86,600.34	875.91											
18	1209-0042	Acquisition	2396 Drew Valley, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	3/31/2005	1 story w/o basement	$ 168,795.58	875.09											
19	1209-0042	Acquisition	2390 Drew Valley, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	3/31/2005	1 story w/o basement	$ 139,201.29	874.48											
20	1209-0042	Acquisition	2319 Poplar Springs Dr NE, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	3/31/2005	2 story w/o basement	$ 186,834.25	850.30											
21	1209-0042	Acquisition	2327 Poplar Springs Dr NE, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	3/31/2005	2 story w/o basement	$ 178,540.94	851.23											
126	1209-0042	Acquisition	2301 Poplar Springs, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	3/31/2005	2 story w/o basement	$ 238,463.54	851.20											

Table D.4 (part 2 of 4)

Summary of Losses Avoided and ROI Calculations for DeKalb County, September 2004 Event

No.	Disaster/ Proj No	Project Type	Address	Flooding Source	Mitigation Completion Date	Building Type	BRV (2010$)	FFE (ft, NGVD29)	WSE for Event (ft, NGVD29)	Final Flood Depth (ft)	Building Damage ($)	Contents Damage ($)	Displacement Cost ($)	Disruption Cost ($)	Debris Removal Services ($)	Reduced Insurance Transaction Cost ($)	Total Losses Avoided ($)	Total Project Investment (2010$)	ROI
65	1209-059	Acquisition	2813 Riderwood Dr, Decatur, GA 30033	Burnt Fork Creek	6/9/2005	2 story w/o basement	$ 304,544.63	956.30											
66	1209-059	Acquisition	3636 Bishop Dr, Tucker, GA 30084	Unnamed South Fork Peachtree Tributary	6/9/2005	1 story w/o basement	$ 176,840.70	1010.00											
67	1209-059	Acquisition	2157 Medfield Tr, Atlanta, GA 30345	North Fork Peachtree Creek	6/9/2005	1 story w/o basement	$ 138,773.75	846.90											
68	1209-059	Acquisition	2342 Nesbitt Dr, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	6/9/2005	1 story w/o basement	$ 117,179.68	855.00											
141	PDM-2005-PJ5	Acquisition	3141 Buford Highway, Atlanta, GA 30329	North Fork Peachtree Creek	8/9/2007	2 story w/o basement	$ 911,552.55	833.80											
170	PDM-PJ-04-GA-2006-002	Acquisition	1991 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	10/1/2007	Split level w/o basement	$ 203,531.24	921.60											
174	PDM-PJ-04-GA-2006-002	Acquisition	1946 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	10/16/2007	1 story w/o basement	$ 186,816.61	922.59											
172	PDM-PJ-04-GA-2006-002	Acquisition	1954 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	10/22/2007	Split level w/o basement	$ 232,883.77	923.01											
171	PDM-PJ-04-GA-2006-002	Acquisition	1947 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	10/28/2007	Split level w/o basement	$ 209,034.84	920.97											
173	PDM-PJ-04-GA-2006-002	Acquisition	1955 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	10/28/2007	2 story w/o basement	$ 208,525.25	925.09											
169	PDM-PJ-04-GA-2006-002	Acquisition	1939 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	11/12/2007	1 Story w/o basement	$ 221,061.23	922.03											
166	PDM-PJ-04-GA-2006-002	Acquisition	1915 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	4/18/2008	Split level w/o basement	$ 226,768.66	920.78											
167	PDM-PJ-04-GA-2006-002	Acquisition	1923 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	6/1/2008	Split level w/o basement	$ 274,364.60	920.67											
168	PDM-PJ-04-GA-2006-002	Acquisition	1931 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	6/1/2008	1 Story w/o basement	$ 216,067.22	924.20											
52	PDMC-PJ-04-2005-001	Acquisition	3139 Buford Highway, Atlanta, GA 30329	North Fork Peachtree Creek	7/30/2008	2 story w/o basement	$1,015,515.93	834.20											
53	PDMC-PJ-04-2005-001	Acquisition	3145 Buford Highway, Atlanta, GA 30329	North Fork Peachtree Creek	7/30/2008	2 story w/o basement	$1,015,515.93	832.50											
54	PDMC-PJ-04-2005-001	Acquisition	3143 Buford Highway, Atlanta, GA 30329	North Fork Peachtree Creek	7/30/2008	2 story w/o basement	$1,015,515.93	832.80											
194	PDMC-PJ-04-GA-2007-001	Acquisition	520 Weschester, Decatur, GA 30030	Peavine Creek Tributary	11/18/2008	1 story w/o basement	$ 204,952.38	926.90											
195	PDMC-PJ-04-GA-2007-001	Acquisition	514 Weschester, Decatur, GA 30030	Peavine Creek Tributary	11/18/2008	1 story w/o basement	$ 198,885.84	926.58											
196	PDMC-PJ-04-GA-2007-001	Acquisition	526 Weschester, Decatur, GA 30030	Peavine Creek Tributary	11/18/2008	1 story w/o basement	$ 125,329.10	926.24											
197	PDMC-PJ-04-GA-2007-001	Acquisition	532 Weschester, Decatur, GA 30030	Peavine Creek Tributary	11/18/2008	2 story w/o basement	$ 199,987.27	925.00											
179	FMA-2007-PJ2	Acquisition	3227 Wake Robin Trail, Chamblee, GA 30341	Henderson Mill Creek	11/20/2008	2 story w/o basement	$ 303,309.46	900.21											
22	PDM-2005-PJ2	Acquisition	2148 Drew Valley, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 190,178.97	849.23											
23	PDM-2005-PJ2	Acquisition	2154 Drew Valley, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 158,983.03	848.37											
24	PDM-2005-PJ2	Acquisition	2158 Drew Valley, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 165,764.76	849.67											
25	PDM-2005-PJ2	Acquisition	2166 Drew Valley, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 113,739.23	849.60											
26	PDM-2005-PJ2	Acquisition	2292 Burch Circle NE, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 118,389.56	852.61											
27	PDM-2005-PJ2	Acquisition	2298 Burch Circle, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 211,880.50	853.04											
28	PDM-2005-PJ2	Acquisition	2304 Burch Circle, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 161,889.49	853.05											
29	PDM-2005-PJ2	Acquisition	2310 Burch Circle, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 116,064.40	853.76											
30	PDM-2005-PJ2	Acquisition	2329 Nesbitt Drive, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 114,611.17	854.25											
31	PDM-2005-PJ2	Acquisition	2335 Nesbitt Drive, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 111,317.19	853.76											

Table D.4 (part 3 of 4)

Summary of Losses Avoided and ROI Calculations for DeKalb County, September 2004 Event

No.	Disaster/ Proj No	Project Type	Address	Flooding Source	Mitigation Completion Date	Building Type	BRV (2010$)	FFE (ft, NGVD29)	WSE for Event (ft, NGVD29)	Final Flood Depth (ft)	Building Damage ($)	Contents Damage ($)	Displacement Cost ($)	Disruption Cost ($)	Debris Removal Services ($)	Reduced Insurance Transaction Cost ($)	Total Losses Avoided ($)	Total Project Investment (2010$)	ROI
32	PDM-2005-PJ2	Acquisition	2339 Nesbitt Drive, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 107,248.15	854.64											
33	PDM-2005-PJ2	Acquisition	2361 Bynum Rd, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 122,361.71	860.02											
34	PDM-2005-PJ2	Acquisition	2387 Drew Valley, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 120,908.49	866.39											
35	PDM-2005-PJ2	Acquisition	2406 Drew Valley, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o Basement	$ 149,682.38	875.91											
36	PDM-2005-PJ2	Acquisition	2411 Oostanuala Dr, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 180,103.27	878.26											
160	PDMC-PJ-04-GA-2007-005	Acquisition	2313 Hunting Valley Dr, Decatur, GA 30033	South Fork Peachtree Creek	1/12/2009	1 story w/o basement	$ 123,729.06	898.50											
191	PDMC-PJ-04-GA-2007-006	Acquisition	678 Heathmoor Pl, Decatur, GA 30032	Indian Creek	1/16/2009	1 story w/o basement	$ 146,859.05	883.70											
158	PDMC-PJ-04-GA-2007-005	Acquisition	2331 Hunting Valley Dr, Decatur, GA 30033	South Fork Peachtree Creek	1/29/2009	1 story w/o basement	$ 148,393.34	898.30											
176	FMA-2007-PJ2	Acquisition	2380 Bynum Road, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	1/30/2009	2 story w/o basement	$ 236,450.92	863.00											
181	FMA-2007-PJ2	Acquisition	2151 Medfield Trail NE, Atlanta, GA 30345	North Fork Peachtree Creek	1/30/2009	1 story w/o basement	$ 122,506.04	848.30											
175	FMA-2007-PJ2	Acquisition	2746 Dunnington Circle, Atlanta, GA 30341	Peachtree Branch of Henderson Mill Creek	2/10/2009	2 story w/o basement	$ 273,651.17	891.90											
178	FMA-2007-PJ2	Acquisition	2506 Nancy Lane, Atlanta, GA 30345	North Fork Peachtree Creek	2/10/2009	Split level w/o basement	$ 364,868.23	859.70											
182	FMA-2007-PJ2	Acquisition	3197 Barkside Court, Atlanta, GA 30341	North Fork Peachtree Creek	2/10/2009	2 story w/o basement	$ 192,625.97	892.00											
183	FMA-2007-PJ2	Acquisition	3208 Windsor Forest Road, Chamblee, GA 30341	North Fork Peachtree Creek	2/10/2009	Split level w/o basement	$ 176,319.01	884.20											
73	FMA-PJ-04-GA-2006-005	Acquisition	1986 Royal Ct, Chamblee, GA 30341	Nancy Creek	3/30/2009	2 story w/o basement	$ 252,350.21	925.98											
74	FMA-PJ-04-GA-2006-005	Acquisition	1965 Royal Ct, Atlanta, GA 30341	Nancy Creek	3/30/2009	2 story w/o basement	$ 216,780.65	925.29											
75	FMA-PJ-04-GA-2006-005	Acquisition	1976 Queens Way, Chamblee, GA 30341	Nancy Creek	3/30/2009	1 story w/o basement	$ 237,572.02	922.12											
157	PDMC-PJ-04-GA-2007-005	Acquisition	2337 Hunting Valley Dr, Decatur, GA 30033	South Fork Peachtree Creek	4/20/2009	1 story w/o basement	$ 123,729.06	899.40											
159	PDMC-PJ-04-GA-2007-005	Acquisition	2325 Hunting Valley Dr, Decatur, GA 30033	South Fork Peachtree Creek	6/22/2009	1 story w/o basement	$ 123,729.06	899.50											
55	RFC-PJ-04-GA-2006-001	Acquisition	1977 Queens Way, Chamblee, GA 30341	Nancy Creek	6/30/2009	Split level w/o basement	$ 307,284.28	920.95											
56	RFC-PJ-04-GA-2006-001	Acquisition	1982 Queens Way, Chamblee, GA 30341	Nancy Creek	6/30/2009	2 story w/o basement	$ 206,894.56	924.45											
57	RFC-PJ-04-GA-2006-001	Acquisition	1988 Queens Way, Chamblee, GA 30341	Nancy Creek	6/30/2009	2 story w/o basement	$ 240,527.66	919.84											
58	RFC-PJ-04-GA-2006-001	Acquisition	2003 Royal Court, Chamblee, GA 30341	Nancy Creek	6/30/2009	2 story w/o basement	$ 247,152.36	924.03											
59	RFC-PJ-04-GA-2006-001	Acquisition	2006 Royal Court, Chamblee, GA 30341	Nancy Creek	6/30/2009	1 story w/o basement	$ 224,730.29	922.75											
60	RFC-PJ-04-GA-2006-001	Acquisition	2014 Royal Court, Chamblee, GA 30341	Nancy Creek	6/30/2009	1 story w/o basement	$ 227,380.17	922.23											
177	FMA-2007-PJ2	Acquisition	1748 Dresden Drive , Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	7/10/2009	1 story w/o basement	$ 137,793.81	877.50											
154	PDMC-PJ-04-GA-2007-005	Acquisition	2814 Riderwood Dr, Decatur, GA 30033	Burnt Fork Creek	7/24/2009	1 story w/o basement	$ 171,426.92	960.10											
155	PDMC-PJ-04-GA-2007-005	Acquisition	2820 Riderwood Dr, Decatur, GA 30033	Burnt Fork Creek	7/24/2009	1 story w/o basement	$ 145,437.70	960.10											
161	PDMC-PJ-04-GA-2007-005	Acquisition	2397 Hunting Valley Dr, Decatur, GA 30033	South Fork Peachtree Creek	7/24/2009	1 story w/o basement	$ 146,354.97	899.40											
162	PDMC-PJ-04-GA-2007-005	Acquisition	1031 Scott Circle, Decatur, GA 30033	South Fork Peachtree Creek	7/24/2009	1 story w/o basement	$ 115,575.58	897.50											

Table D.4 (part 4 of 4)

Summary of Losses Avoided and ROI Calculations for DeKalb County, September 2004 Event

No.	Disaster/ Proj No	Project Type	Address	Flooding Source	Mitigation Completion Date	Building Type	BRV (2010$)	FFE (ft, NGVD29)	WSE for Event (ft, NGVD29)	Final Flood Depth (ft)	Building Damage ($)	Contents Damage ($)	Displacement Cost ($)	Disruption Cost ($)	Debris Removal Services ($)	Reduced Insurance Transaction Cost ($)	Total Losses Avoided ($)	Total Project Investment (2010$)	ROI
165	PDMC-PJ-04-GA-2007-005	Acquisition	999 Scott Circle, Decatur, GA 30033	South Fork Peachtree Creek	7/24/2009	1 story w/o basement	$ 199,658.34	899.50											
163	PDMC-PJ-04-GA-2007-005	Acquisition	1023 Scott Circle, Decatur, GA 30033	South Fork Peachtree Creek	7/27/2009	1 story w/o basement	$ 115,575.58	898.60											
164	PDMC-PJ-04-GA-2007-005	Acquisition	1005 Scott Circle, Decatur, GA 30033	South Fork Peachtree Creek	8/14/2009	1 story w/o basement	$ 130,965.27	899.60											
76	RFC-PJ-04-GA-001	Acquisition	631 Densley Dr, Decatur, GA 30033	South Fork Peachtree Creek Tributary	9/30/2009	2 story w/o basement	$ 296,371.05	883.60											
78	RFC-2007	Acquisition	2056 Desmond Dr, Decatur, GA 30033	South Fork Peachtree Creek Tributary	9/30/2009	1 story w/o basement	$ 186,435.85	881.50											
										TOTAL	$ 740,111.32	$ 426,304.08	$ 195,455.19	$ 204,424.21	$ 37,946.07	$ 21,186.61	$ 1,625,427.49	$ 3,545,313.04	45.85%

BRV = building replacement value
FFE = first floor elevation
ft = feet
NGVD29 = National Geodetic Vertical Datum of 1929
ROI = Return on Investment
WSE = water surface elevation

Indicates property was not mitigated at time of the storm event.

Table D.5 (part 1 of 4)

Summary of Losses Avoided and ROI Calculations for DeKalb County, March 2005 Event

No.	Disaster/ Proj No	Project Type	Address	Flooding Source	Mitigation Completion Date	Building Type	BRV (2010$)	FFE (ft, NGVD29)	WSE for Event (ft, NGVD29)	Final Flood Depth (ft)	Building Damage ($)	Contents Damage ($)	Displacement Cost ($)	Disruption Cost ($)	Debris Removal Services ($)	Reduced Insurance Transaction Cost ($)	Total Losses Avoided ($)	Total Project Investment (2010$)	ROI
148	1209-0017	Acquisition	2000 McJenkins Dr, Decatur, GA 30032	North Fork Peachtree Creek	5/13/2002	2 story w/o basement	$ 299,215.00	850.00	852.33	2.33	$ 67,862.31	$ 39,759.23	$ 17,370.90	$ 12,449.41	$ 2,806.98	$ 3,000.00	$ 143,248.82	$ 267,445.57	53.6%
142	1071-004	Acquisition	2023 Audubon Dr, Atlanta, GA 30329	Unnamed North Fork Peachtree Creek Tributary	7/18/2002	1 story w/o basement	$ 146,700.84	864.60								$ -	$ -	$ 167,878.71	0.0%
143	1071-004	Acquisition	2263 Melinda Dr, Atlanta, GA 30345	North Fork Peachtree Creek	7/18/2002	2 story w/o basement	$ 197,165.69	858.80	857.83	-0.97	$ 6,233.24	$ 2,173.73	$ -	$ 3,670.68	$ 286.16	$ -	$ 12,363.81	$ 164,078.39	7.5%
144	1071-004	Acquisition	1989 Queens Way, Chamblee, GA 30341	Nancy Creek	7/18/2002	1 story w/o basement	$ 239,883.91	924.00	921.58	-2.42	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 228,683.67	0.0%
145	1071-004	Acquisition	3164 Bobbie Lane, Decatur, GA 30032	Cobbs Creek	7/18/2002	2 story w/o basement	$ 160,981.79	931.10								$ -	$ -	$ 99,470.59	0.0%
146	1071-004	Acquisition	649 Cheviot Dr, Decatur, GA 30032	Indian Creek	7/18/2002	2 story w/o basement	$ 196,952.48	882.20								$ -	$ -	$ 102,006.66	0.0%
147	1071-004	Acquisition	665 Cheviot Dr, Decatur, GA 30032	Indian Creek	7/18/2002	2 story w/o basement	$ 228,000.80	881.80								$ -	$ -	$ 114,674.36	0.0%
2	1209-0042	Acquisition	6251 Cathedral Lane, Lithonia, GA 30030	Stephenson Creek	5/22/2003	2 story w/o basement	$ 225,157.59	686.50								$ -	$ -	$ 168,801.42	0.0%
1	1209-0042	Acquisition	3230 Barkside Court, Chamblee, GA 30030	North Fork Peachtree Creek	5/23/2003	2 story w/o basement	$ 250,382.70	884.30	889.89	5.59	$ 97,241.66	$ 57,146.65	$ 31,274.72	$ 19,716.22	$ 6,432.20	$ 3,550.93	$ 215,362.39	$ 321,384.49	67.0%
6	1209-0042	Acquisition	2293 Hunting Valley, Decatur, GA 30030	South Fork Peachtree Creek	6/10/2003	2 story w/o basement	$ 145,351.00	895.50								$ -	$ -	$ 358,591.86	0.0%
4	1209-0042	Acquisition	671 Cheviot Drive, Decatur, GA 30030	Indian Creek	6/12/2003	2 story w/o basement	$ 297,752.40	880.10								$ -	$ -	$ 170,384.27	0.0%
5	1209-0042	Acquisition	2441 Green Forrest, Decatur, GA 30030	Shoal Creek	7/24/2003	2 story w/o basement	$ 104,220.55	822.40								$ -	$ -	$ 185,687.59	0.0%
7	1209-0042	Acquisition	2133 Medfield Trail NE, Atlanta, GA 30345	North Fork Peachtree Creek	4/16/2004	2 story w/o basement	$ 156,423.83	847.00	849.38	2.38	$ 35,938.53	$ 21,067.34	$ 10,880.27	$ 12,582.08	$ 1,720.32	$ 1,710.18	$ 83,898.71	$ 274,289.34	30.6%
11	1209-0042	Acquisition	683 Cheviot Drive, Decatur, GA 30032	Indian Creek	5/14/2004	2 story w/o basement	$ 162,080.80	881.90								$ -	$ -	$ 189,510.43	0.0%
10	1209-0042	Acquisition	677 Cheviot Drive, Decatur, GA 30032	Indian Creek	5/19/2004	2 story w/o basement	$ 239,024.73	880.00								$ -	$ -	$ 179,002.77	0.0%
12	1209-0042	Acquisition	687 Cheviot Drive, Decatur, GA 30032	Indian Creek	6/1/2004	2 story w/o basement	$ 183,932.77	881.90								$ -	$ -	$ 191,830.47	0.0%
13	1209-0042	Acquisition	686 Heathmoor Pl, Decatur, GA 30032	Indian Creek	6/16/2004	1 story w/o basement	$ 109,259.83	879.60								$ -	$ -	$ 172,792.50	0.0%
3	1209-0042	Acquisition	657 Cheviot Drive, Decatur, GA 30032	Indian Creek	8/11/2004	2 story w/o basement	$ 250,299.27	880.10								$ -	$ -	$ 188,799.97	0.0%
201	1209-0042	Acquisition	2333 Poplar Springs Dr NE, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	11/18/2004	2 story w/o basement	$ 182,922.31	852.54								$ -	$ -	$ 337,384.25	0.0%
9	1209-0042	Acquisition	643 Cheviot Drive, Decatur, GA 30032	Indian Creek	12/3/2004	2 story w/o basement	$ 265,262.60	880.00								$ -	$ -	$ 206,030.14	0.0%
14	1209-0042	Acquisition	694 Heathmoor Pl, Decatur, GA 30032	Indian Creek	3/31/2005	1 story w/o basement	$ 140,312.02	880.50								$ -	$ -	$ 188,750.69	0.0%
15	1209-0042	Acquisition	621 Densley Drive, Decatur, GA 30033	South Fork Peachtree Creek Tributary	3/31/2005	2 story w/o basement	$ 161,651.37	884.60								$ -	$ -	$ 346,621.79	0.0%
16	1209-0042	Acquisition	3743 Kingswood Dr, Decatur, GA 30032	Indian Creek	3/31/2005	2 story w/o basement	$ 227,159.82	883.20								$ -	$ -	$ 163,013.64	0.0%
17	1209-0042	Acquisition	2402 Drew Valley, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	3/31/2005	1 story w/o basement	$ 86,600.34	875.91								$ -	$ -	$ 228,933.44	0.0%
18	1209-0042	Acquisition	2396 Drew Valley, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	3/31/2005	1 story w/o basement	$ 168,795.58	875.09								$ -	$ -	$ 350,475.22	0.0%
19	1209-0042	Acquisition	2390 Drew Valley, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	3/31/2005	1 story w/o basement	$ 139,201.29	874.48								$ -	$ -	$ 330,419.77	0.0%
20	1209-0042	Acquisition	2319 Poplar Springs Dr NE, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	3/31/2005	2 story w/o basement	$ 186,834.25	850.30								$ -	$ -	$ 279,257.53	0.0%
21	1209-0042	Acquisition	2327 Poplar Springs Dr NE, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	3/31/2005	2 story w/o basement	$ 178,540.94	851.23								$ -	$ -	$ 274,385.10	0.0%
126	1209-0042	Acquisition	2301 Poplar Springs, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	3/31/2005	2 story w/o basement	$ 238,463.54	851.20								$ -	$ -	$ 269,643.67	0.0%

Table D.5 (part 2 of 4)

Summary of Losses Avoided and ROI Calculations for DeKalb County, March 2005 Event

No.	Disaster/ Proj No	Project Type	Address	Flooding Source	Mitigation Completion Date	Building Type	BRV (2010$)	FFE (ft, NGVD29)	WSE for Event (ft, NGVD29)	Final Flood Depth (ft)	Building Damage ($)	Contents Damage ($)	Displacement Cost ($)	Disruption Cost ($)	Debris Removal Services ($)	Reduced Insurance Transaction Cost ($)	Total Losses Avoided ($)	Total Project Investment (2010$)	ROI
65	1209-059	Acquisition	2813 Riderwood Dr, Decatur, GA 30033	Burnt Fork Creek	6/9/2005	2 story w/o basement	$ 304,544.63	956.30											
66	1209-059	Acquisition	3636 Bishop Dr, Tucker, GA 30084	Unnamed South Fork Peachtree Tributary	6/9/2005	1 story w/o basement	$ 176,840.70	1010.00											
67	1209-059	Acquisition	2157 Medfield Tr, Atlanta, GA 30345	North Fork Peachtree Creek	6/9/2005	1 story w/o basement	$ 138,773.75	846.90											
68	1209-059	Acquisition	2342 Nesbitt Dr, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	6/9/2005	1 story w/o basement	$ 117,179.68	855.00											
141	PDM-2005-PJ5	Acquisition	3141 Buford Highway, Atlanta, GA 30329	North Fork Peachtree Creek	8/9/2007	2 story w/o basement	$ 911,552.55	833.80											
170	PDM-PJ-04-GA-2006-002	Acquisition	1991 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	10/1/2007	Split level w/o basement	$ 203,531.24	921.60											
174	PDM-PJ-04-GA-2006-002	Acquisition	1946 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	10/16/2007	1 story w/o basement	$ 186,816.61	922.59											
172	PDM-PJ-04-GA-2006-002	Acquisition	1954 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	10/22/2007	Split level w/o basement	$ 232,883.77	923.01											
171	PDM-PJ-04-GA-2006-002	Acquisition	1947 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	10/28/2007	Split level w/o basement	$ 209,034.84	920.97											
173	PDM-PJ-04-GA-2006-002	Acquisition	1955 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	10/28/2007	2 story w/o basement	$ 208,525.25	925.09											
169	PDM-PJ-04-GA-2006-002	Acquisition	1939 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	11/12/2007	1 Story w/o basement	$ 221,061.23	922.03											
166	PDM-PJ-04-GA-2006-002	Acquisition	1915 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	4/18/2008	Split level w/o basement	$ 226,768.66	920.78											
167	PDM-PJ-04-GA-2006-002	Acquisition	1923 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	6/1/2008	Split level w/o basement	$ 274,364.60	920.67											
168	PDM-PJ-04-GA-2006-002	Acquisition	1931 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	6/1/2008	1 Story w/o basement	$ 216,067.22	924.20											
52	PDMC-PJ-04-2005-001	Acquisition	3139 Buford Highway, Atlanta, GA 30329	North Fork Peachtree Creek	7/30/2008	2 story w/o basement	$1,015,515.93	834.20											
53	PDMC-PJ-04-2005-001	Acquisition	3145 Buford Highway, Atlanta, GA 30329	North Fork Peachtree Creek	7/30/2008	2 story w/o basement	$1,015,515.93	832.50											
54	PDMC-PJ-04-2005-001	Acquisition	3143 Buford Highway, Atlanta, GA 30329	North Fork Peachtree Creek	7/30/2008	2 story w/o basement	$1,015,515.93	832.80											
194	PDMC-PJ-04-GA-2007-001	Acquisition	520 Weschester, Decatur, GA 30030	Peavine Creek Tributary	11/18/2008	1 story w/o basement	$ 204,952.38	926.90											
195	PDMC-PJ-04-GA-2007-001	Acquisition	514 Weschester, Decatur, GA 30030	Peavine Creek Tributary	11/18/2008	1 story w/o basement	$ 198,885.84	926.58											
196	PDMC-PJ-04-GA-2007-001	Acquisition	526 Weschester, Decatur, GA 30030	Peavine Creek Tributary	11/18/2008	1 story w/o basement	$ 125,329.10	926.24											
197	PDMC-PJ-04-GA-2007-001	Acquisition	532 Weschester, Decatur, GA 30030	Peavine Creek Tributary	11/18/2008	2 story w/o basement	$ 199,987.27	925.00											
179	FMA-2007-PJ2	Acquisition	3227 Wake Robin Trail, Chamblee, GA 30341	Henderson Mill Creek	11/20/2008	2 story w/o basement	$ 303,309.46	900.21											
22	PDM-2005-PJ2	Acquisition	2148 Drew Valley, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 190,178.97	849.23											
23	PDM-2005-PJ2	Acquisition	2154 Drew Valley, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 158,983.03	848.37											
24	PDM-2005-PJ2	Acquisition	2158 Drew Valley, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 165,764.76	849.67											
25	PDM-2005-PJ2	Acquisition	2166 Drew Valley, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 113,739.23	849.60											
26	PDM-2005-PJ2	Acquisition	2292 Burch Circle NE, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 118,389.56	852.61											
27	PDM-2005-PJ2	Acquisition	2298 Burch Circle, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 211,880.50	853.04											
28	PDM-2005-PJ2	Acquisition	2304 Burch Circle, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 161,889.49	853.05											
29	PDM-2005-PJ2	Acquisition	2310 Burch Circle, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 116,064.40	853.76											
30	PDM-2005-PJ2	Acquisition	2329 Nesbitt Drive, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 114,611.17	854.25											
31	PDM-2005-PJ2	Acquisition	2335 Nesbitt Drive, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 111,317.19	853.76											

Table D.5 (part 3 of 4)

Summary of Losses Avoided and ROI Calculations for DeKalb County, March 2005 Event

No.	Disaster/ Proj No	Project Type	Address	Flooding Source	Mitigation Completion Date	Building Type	BRV (2010$)	FFE (ft, NGVD29)	WSE for Event (ft, NGVD29)	Final Flood Depth (ft)	Building Damage ($)	Contents Damage ($)	Displacement Cost ($)	Disruption Cost ($)	Debris Removal Services ($)	Reduced Insurance Transaction Cost ($)	Total Losses Avoided ($)	Total Project Investment (2010$)	ROI
32	PDM-2005-PJ2	Acquisition	2339 Nesbitt Drive, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 107,248.15	854.64											
33	PDM-2005-PJ2	Acquisition	2361 Bynum Rd, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 122,361.71	860.02											
34	PDM-2005-PJ2	Acquisition	2387 Drew Valley, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 120,908.49	866.39											
35	PDM-2005-PJ2	Acquisition	2406 Drew Valley, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o Basement	$ 149,682.38	875.91											
36	PDM-2005-PJ2	Acquisition	2411 Oostanuala Dr, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 180,103.27	878.26											
160	PDMC-PJ-04-GA-2007-005	Acquisition	2313 Hunting Valley Dr, Decatur, GA 30033	South Fork Peachtree Creek	1/12/2009	1 story w/o basement	$ 123,729.06	898.50											
191	PDMC-PJ-04-GA-2007-006	Acquisition	678 Heathmoor Pl, Decatur, GA 30032	Indian Creek	1/16/2009	1 story w/o basement	$ 146,859.05	883.70											
158	PDMC-PJ-04-GA-2007-005	Acquisition	2331 Hunting Valley Dr, Decatur, GA 30033	South Fork Peachtree Creek	1/29/2009	1 story w/o basement	$ 148,393.34	898.30											
176	FMA-2007-PJ2	Acquisition	2380 Bynum Road, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	1/30/2009	2 story w/o basement	$ 236,450.92	863.00											
181	FMA-2007-PJ2	Acquisition	2151 Medfield Trail NE, Atlanta, GA 30345	North Fork Peachtree Creek	1/30/2009	1 story w/o basement	$ 122,506.04	848.30											
175	FMA-2007-PJ2	Acquisition	2746 Dunnington Circle, Atlanta, GA 30341	Peachtree Branch of Henderson Mill Creek	2/10/2009	2 story w/o basement	$ 273,651.17	891.90											
178	FMA-2007-PJ2	Acquisition	2506 Nancy Lane, Atlanta, GA 30345	North Fork Peachtree Creek	2/10/2009	Split level w/o basement	$ 364,868.23	859.70											
182	FMA-2007-PJ2	Acquisition	3197 Barkside Court, Atlanta, GA 30341	North Fork Peachtree Creek	2/10/2009	2 story w/o basement	$ 192,625.97	892.00											
183	FMA-2007-PJ2	Acquisition	3208 Windsor Forest Road, Chamblee, GA 30341	North Fork Peachtree Creek	2/10/2009	Split level w/o basement	$ 176,319.01	884.20											
73	FMA-PJ-04-GA-2006-005	Acquisition	1986 Royal Ct, Chamblee, GA 30341	Nancy Creek	3/30/2009	2 story w/o basement	$ 252,350.21	925.98											
74	FMA-PJ-04-GA-2006-005	Acquisition	1965 Royal Ct, Atlanta, GA 30341	Nancy Creek	3/30/2009	2 story w/o basement	$ 216,780.65	925.29											
75	FMA-PJ-04-GA-2006-005	Acquisition	1976 Queens Way, Chamblee, GA 30341	Nancy Creek	3/30/2009	1 story w/o basement	$ 237,572.02	922.12											
157	PDMC-PJ-04-GA-2007-005	Acquisition	2337 Hunting Valley Dr, Decatur, GA 30033	South Fork Peachtree Creek	4/20/2009	1 story w/o basement	$ 123,729.06	899.40											
159	PDMC-PJ-04-GA-2007-005	Acquisition	2325 Hunting Valley Dr, Decatur, GA 30033	South Fork Peachtree Creek	6/22/2009	1 story w/o basement	$ 123,729.06	899.50											
55	RFC-PJ-04-GA-2006-001	Acquisition	1977 Queens Way, Chamblee, GA 30341	Nancy Creek	6/30/2009	Split level w/o basement	$ 307,284.28	920.95											
56	RFC-PJ-04-GA-2006-001	Acquisition	1982 Queens Way, Chamblee, GA 30341	Nancy Creek	6/30/2009	2 story w/o basement	$ 206,894.56	924.45											
57	RFC-PJ-04-GA-2006-001	Acquisition	1988 Queens Way, Chamblee, GA 30341	Nancy Creek	6/30/2009	2 story w/o basement	$ 240,527.66	919.84											
58	RFC-PJ-04-GA-2006-001	Acquisition	2003 Royal Court, Chamblee, GA 30341	Nancy Creek	6/30/2009	2 story w/o basement	$ 247,152.36	924.03											
59	RFC-PJ-04-GA-2006-001	Acquisition	2006 Royal Court, Chamblee, GA 30341	Nancy Creek	6/30/2009	1 story w/o basement	$ 224,730.29	922.75											
60	RFC-PJ-04-GA-2006-001	Acquisition	2014 Royal Court, Chamblee, GA 30341	Nancy Creek	6/30/2009	1 story w/o basement	$ 227,380.17	922.23											
177	FMA-2007-PJ2	Acquisition	1748 Dresden Drive , Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	7/10/2009	1 story w/o basement	$ 137,793.81	877.50											
154	PDMC-PJ-04-GA-2007-005	Acquisition	2814 Riderwood Dr, Decatur, GA 30033	Burnt Fork Creek	7/24/2009	1 story w/o basement	$ 171,426.92	960.10											
155	PDMC-PJ-04-GA-2007-005	Acquisition	2820 Riderwood Dr, Decatur, GA 30033	Burnt Fork Creek	7/24/2009	1 story w/o basement	$ 145,437.70	960.10											
161	PDMC-PJ-04-GA-2007-005	Acquisition	2397 Hunting Valley Dr, Decatur, GA 30033	South Fork Peachtree Creek	7/24/2009	1 story w/o basement	$ 146,354.97	899.40											
162	PDMC-PJ-04-GA-2007-005	Acquisition	1031 Scott Circle, Decatur, GA 30033	South Fork Peachtree Creek	7/24/2009	1 story w/o basement	$ 115,575.58	897.50											

Table D.5 (part 4 of 4)

Summary of Losses Avoided and ROI Calculations for DeKalb County, March 2005 Event

No.	Disaster/ Proj No	Project Type	Address	Flooding Source	Mitigation Completion Date	Building Type	BRV (2010$)	FFE (ft, NGVD29)	WSE for Event (ft, NGVD29)	Final Flood Depth (ft)	Building Damage ($)	Contents Damage ($)	Displacement Cost ($)	Disruption Cost ($)	Debris Removal Services ($)	Reduced Insurance Transaction Cost ($)	Total Losses Avoided ($)	Total Project Investment (2010$)	ROI
165	PDMC-PJ-04-GA-2007-005	Acquisition	999 Scott Circle, Decatur, GA 30033	South Fork Peachtree Creek	7/24/2009	1 story w/o basement	$ 199,658.34	899.50											
163	PDMC-PJ-04-GA-2007-005	Acquisition	1023 Scott Circle, Decatur, GA 30033	South Fork Peachtree Creek	7/27/2009	1 story w/o basement	$ 115,575.58	898.60											
164	PDMC-PJ-04-GA-2007-005	Acquisition	1005 Scott Circle, Decatur, GA 30033	South Fork Peachtree Creek	8/14/2009	1 story w/o basement	$ 130,965.27	899.60											
76	RFC-PJ-04-GA-001	Acquisition	631 Densley Dr, Decatur, GA 30033	South Fork Peachtree Creek Tributary	9/30/2009	2 story w/o basement	$ 296,371.05	883.60											
78	RFC-2007	Acquisition	2056 Desmond Dr, Decatur, GA 30033	South Fork Peachtree Creek Tributary	9/30/2009	1 story w/o basement	$ 186,435.85	881.50											
										TOTAL	$ 207,275.74	$ 120,146.96	$ 59,525.88	$ 48,418.39	$ 11,245.65	$ 8,261.11	$ 454,873.73	$ 6,520,228.29	6.98%

BRV = building replacement value
FFE = first floor elevation
ft = feet
NGVD29 = National Geodetic Vertical Datum of 1929
ROI = Return on Investment
WSE = water surface elevation

Indicates property was not mitigated at time of the storm event.

Table D.6 (part 1 of 4)

Summary of Losses Avoided and ROI Calculations for DeKalb County, July 2005 Event

No.	Disaster/ Proj No	Project Type	Address	Flooding Source	Mitigation Completion Date	Building Type	BRV (2010$)	FFE (ft, NGVD29)	WSE for Event (ft, NGVD29)	Final Flood Depth (ft)	Building Damage ($)	Contents Damage ($)	Displacement Cost ($)	Disruption Cost ($)	Debris Removal Services ($)	Reduced Insurance Transaction Cost ($)	Total Losses Avoided ($)	Total Project Investment (2010$)	ROI
148	1209-0017	Acquisition	2000 McJenkins Dr, Decatur, GA 30032	North Fork Peachtree Creek	5/13/2002	2 story w/o basement	$ 299,215.00	850.00								$ -	$ -	$ 267,445.57	0.0%
142	1071-004	Acquisition	2023 Audubon Dr, Atlanta, GA 30329	Unnamed North Fork Peachtree Creek Tributary	7/18/2002	1 story w/o basement	$ 146,700.84	864.60								$ -	$ -	$ 167,878.71	0.0%
143	1071-004	Acquisition	2263 Melinda Dr, Atlanta, GA 30345	North Fork Peachtree Creek	7/18/2002	2 story w/o basement	$ 197,165.69	858.80								$ -	$ -	$ 164,078.39	0.0%
144	1071-004	Acquisition	1989 Queens Way, Chamblee, GA 30341	Nancy Creek	7/18/2002	1 story w/o basement	$ 239,883.91	924.00								$ -	$ -	$ 228,683.67	0.0%
145	1071-004	Acquisition	3164 Bobbie Lane, Decatur, GA 30032	Cobbs Creek	7/18/2002	2 story w/o basement	$ 160,981.79	931.10								$ -	$ -	$ 99,470.59	0.0%
146	1071-004	Acquisition	649 Cheviot Dr, Decatur, GA 30032	Indian Creek	7/18/2002	2 story w/o basement	$ 196,952.48	882.20	883.29	1.09	$ 30,951.69	$ 17,758.06	$ 7,415.05	$ 9,316.92	$ 1,769.70	$ 1,400.00	$ 68,611.43	$ 102,006.66	67.3%
147	1071-004	Acquisition	665 Cheviot Dr, Decatur, GA 30032	Indian Creek	7/18/2002	2 story w/o basement	$ 228,000.80	881.80	882.45	0.65	$ 29,887.31	$ 16,845.46	$ 3,805.10	$ 8,144.44	$ 1,274.87	$ -	$ 59,957.18	$ 114,674.36	52.3%
2	1209-0042	Acquisition	6251 Cathedral Lane, Lithonia, GA 30030	Stephenson Creek	5/22/2003	2 story w/o basement	$ 225,157.59	686.50	686.80	0.30	$ 24,924.94	$ 13,757.13	$ 1,347.27	$ 7,227.64	$ 1,458.06	$ -	$ 48,715.05	$ 168,801.42	28.9%
1	1209-0042	Acquisition	3230 Barkside Court, Chamblee, GA 30030	North Fork Peachtree Creek	5/23/2003	2 story w/o basement	$ 250,382.70	884.30								$ -	$ -	$ 321,384.49	0.0%
6	1209-0042	Acquisition	2293 Hunting Valley, Decatur, GA 30030	South Fork Peachtree Creek	6/10/2003	2 story w/o basement	$ 145,351.00	895.50	896.38	0.88	$ 21,103.04	$ 12,024.50	$ 4,801.44	$ 8,778.72	$ 1,298.04	$ -	$ 48,005.74	$ 358,591.86	13.4%
4	1209-0042	Acquisition	671 Cheviot Drive, Decatur, GA 30030	Indian Creek	6/12/2003	2 story w/o basement	$ 297,752.40	880.10	882.10	2.00	$ 62,230.84	$ 36,326.15	$ 13,686.01	$ 11,648.87	$ 2,369.75	$ -	$ 126,261.63	$ 170,384.27	74.1%
5	1209-0042	Acquisition	2441 Green Forrest, Decatur, GA 30030	Shoal Creek	7/24/2003	2 story w/o basement	$ 104,220.55	822.40								$ -	$ -	$ 185,687.59	0.0%
7	1209-0042	Acquisition	2133 Medfield Trail NE, Atlanta, GA 30345	North Fork Peachtree Creek	4/16/2004	2 story w/o basement	$ 156,423.83	847.00								$ -	$ -	$ 274,289.34	0.0%
11	1209-0042	Acquisition	683 Cheviot Drive, Decatur, GA 30032	Indian Creek	5/14/2004	2 story w/o basement	$ 162,080.80	881.90	881.46	-0.44	$ 10,592.70	$ 5,259.08	$ -	$ 5,188.18	$ 644.30	$ -	$ 21,684.26	$ 189,510.43	11.4%
10	1209-0042	Acquisition	677 Cheviot Drive, Decatur, GA 30032	Indian Creek	5/19/2004	2 story w/o basement	$ 239,024.73	880.00	881.82	1.82	$ 47,435.69	$ 27,613.35	$ 11,004.63	$ 11,174.52	$ 1,988.51	$ 2,251.47	$ 101,468.17	$ 179,002.77	56.7%
12	1209-0042	Acquisition	687 Cheviot Drive, Decatur, GA 30032	Indian Creek	6/1/2004	2 story w/o basement	$ 183,932.77	881.90	881.15	-0.75	$ 8,404.60	$ 3,672.10	$ -	$ 4,303.93	$ 404.26	$ 925.00	$ 17,709.88	$ 191,830.47	9.2%
13	1209-0042	Acquisition	686 Heathmoor Pl, Decatur, GA 30032	Indian Creek	6/16/2004	1 story w/o basement	$ 109,259.83	879.60	881.89	2.29	$ 37,650.04	$ 20,878.55	$ 7,382.50	$ 17,747.16	$ 1,790.31	$ -	$ 85,448.56	$ 172,792.50	49.5%
3	1209-0042	Acquisition	657 Cheviot Drive, Decatur, GA 30032	Indian Creek	8/11/2004	2 story w/o basement	$ 250,299.27	880.10	882.84	2.74	$ 62,369.32	$ 36,682.31	$ 16,310.24	$ 13,455.87	$ 2,447.34	$ 2,971.55	$ 134,236.63	$ 188,799.97	71.1%
201	1209-0042	Acquisition	2333 Poplar Springs Dr NE, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	11/18/2004	2 story w/o basement	$ 182,922.31	852.54	848.41	-4.13	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 337,384.25	0.0%
9	1209-0042	Acquisition	643 Cheviot Drive, Decatur, GA 30032	Indian Creek	12/3/2004	2 story w/o basement	$ 265,262.60	880.00	883.75	3.75	$ 79,934.30	$ 47,098.20	$ 29,301.65	$ 15,801.88	$ 3,910.12	$ -	$ 176,046.15	$ 206,030.14	85.4%
14	1209-0042	Acquisition	694 Heathmoor Pl, Decatur, GA 30032	Indian Creek	3/31/2005	1 story w/o basement	$ 140,312.02	880.50	881.50	1.00	$ 32,646.07	$ 18,637.01	$ 4,420.63	$ 12,713.26	$ 1,689.98	$ 1,600.00	$ 71,706.94	$ 188,750.69	38.0%
15	1209-0042	Acquisition	621 Densley Drive, Decatur, GA 30033	South Fork Peachtree Creek Tributary	3/31/2005	2 story w/o basement	$ 161,651.37	884.60								$ -	$ -	$ 346,621.79	0.0%
16	1209-0042	Acquisition	3743 Kingswood Dr, Decatur, GA 30032	Indian Creek	3/31/2005	2 story w/o basement	$ 227,159.82	883.20	884.41	1.21	$ 37,232.03	$ 21,423.10	$ 8,341.30	$ 9,620.47	$ 1,873.59	$ 1,759.65	$ 80,250.14	$ 163,013.64	49.2%
17	1209-0042	Acquisition	2402 Drew Valley, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	3/31/2005	1 story w/o basement	$ 86,600.34	875.91	867.04	-8.87	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 228,933.44	0.0%
18	1209-0042	Acquisition	2396 Drew Valley, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	3/31/2005	1 story w/o basement	$ 168,795.58	875.09	868.34	-6.75	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 350,475.22	0.0%
19	1209-0042	Acquisition	2390 Drew Valley, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	3/31/2005	1 story w/o basement	$ 139,201.29	874.48	869.29	-5.19	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 330,419.77	0.0%
20	1209-0042	Acquisition	2319 Poplar Springs Dr NE, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	3/31/2005	2 story w/o basement	$ 186,834.25	850.30	845.30	-5.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 279,257.53	0.0%
21	1209-0042	Acquisition	2327 Poplar Springs Dr NE, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	3/31/2005	2 story w/o basement	$ 178,540.94	851.23	845.00	-6.23	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 274,385.10	0.0%
126	1209-0042	Acquisition	2301 Poplar Springs, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	3/31/2005	2 story w/o basement	$ 238,463.54	851.20	845.07	-6.13	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 269,643.67	0.0%

Table D.6 (part 2 of 4)

Summary of Losses Avoided and ROI Calculations for DeKalb County, July 2005 Event

No.	Disaster/ Proj No	Project Type	Address	Flooding Source	Mitigation Completion Date	Building Type	BRV (2010$)	FFE (ft, NGVD29)	WSE for Event (ft, NGVD29)	Final Flood Depth (ft)	Building Damage ($)	Contents Damage ($)	Displacement Cost ($)	Disruption Cost ($)	Debris Removal Services ($)	Reduced Insurance Transaction Cost ($)	Total Losses Avoided ($)	Total Project Investment (2010$)	ROI
65	1209-059	Acquisition	2813 Riderwood Dr, Decatur, GA 30033	Burnt Fork Creek	6/9/2005	2 story w/o basement	$ 304,544.63	956.30								$ -	$ -	$ 407,710.90	0.0%
66	1209-059	Acquisition	3636 Bishop Dr, Tucker, GA 30084	Unnamed South Fork Peachtree Tributary	6/9/2005	1 story w/o basement	$ 176,840.70	1010.00								$ -	$ -	$ 198,247.46	0.0%
67	1209-059	Acquisition	2157 Medfield Tr, Atlanta, GA 30345	North Fork Peachtree Creek	6/9/2005	1 story w/o basement	$ 138,773.75	846.90								$ -	$ -	$ 225,491.56	0.0%
68	1209-059	Acquisition	2342 Nesbitt Dr, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	6/9/2005	1 story w/o basement	$ 117,179.68	855.00	852.90	-2.10	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 267,842.16	0.0%
141	PDM-2005-PJ5	Acquisition	3141 Buford Highway, Atlanta, GA 30329	North Fork Peachtree Creek	8/9/2007	2 story w/o basement	$ 911,552.55	833.80											
170	PDM-PJ-04-GA-2006-002	Acquisition	1991 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	10/1/2007	Split level w/o basement	$ 203,531.24	921.60											
174	PDM-PJ-04-GA-2006-002	Acquisition	1946 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	10/16/2007	1 story w/o basement	$ 186,816.61	922.59											
172	PDM-PJ-04-GA-2006-002	Acquisition	1954 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	10/22/2007	Split level w/o basement	$ 232,883.77	923.01											
171	PDM-PJ-04-GA-2006-002	Acquisition	1947 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	10/28/2007	Split level w/o basement	$ 209,034.84	920.97											
173	PDM-PJ-04-GA-2006-002	Acquisition	1955 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	10/28/2007	2 story w/o basement	$ 208,525.25	925.09											
169	PDM-PJ-04-GA-2006-002	Acquisition	1939 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	11/12/2007	1 Story w/o basement	$ 221,061.23	922.03											
166	PDM-PJ-04-GA-2006-002	Acquisition	1915 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	4/18/2008	Split level w/o basement	$ 226,768.66	920.78											
167	PDM-PJ-04-GA-2006-002	Acquisition	1923 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	6/1/2008	Split level w/o basement	$ 274,364.60	920.67											
168	PDM-PJ-04-GA-2006-002	Acquisition	1931 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	6/1/2008	1 Story w/o basement	$ 216,067.22	924.20											
52	PDMC-PJ-04-2005-001	Acquisition	3139 Buford Highway, Atlanta, GA 30329	North Fork Peachtree Creek	7/30/2008	2 story w/o basement	$1,015,515.93	834.20											
53	PDMC-PJ-04-2005-001	Acquisition	3145 Buford Highway, Atlanta, GA 30329	North Fork Peachtree Creek	7/30/2008	2 story w/o basement	$1,015,515.93	832.50											
54	PDMC-PJ-04-2005-001	Acquisition	3143 Buford Highway, Atlanta, GA 30329	North Fork Peachtree Creek	7/30/2008	2 story w/o basement	$1,015,515.93	832.80											
194	PDMC-PJ-04-GA-2007-001	Acquisition	520 Weschester, Decatur, GA 30030	Peavine Creek Tributary	11/18/2008	1 story w/o basement	$ 204,952.38	926.90											
195	PDMC-PJ-04-GA-2007-001	Acquisition	514 Weschester, Decatur, GA 30030	Peavine Creek Tributary	11/18/2008	1 story w/o basement	$ 198,885.84	926.58											
196	PDMC-PJ-04-GA-2007-001	Acquisition	526 Weschester, Decatur, GA 30030	Peavine Creek Tributary	11/18/2008	1 story w/o basement	$ 125,329.10	926.24											
197	PDMC-PJ-04-GA-2007-001	Acquisition	532 Weschester, Decatur, GA 30030	Peavine Creek Tributary	11/18/2008	2 story w/o basement	$ 199,987.27	925.00											
179	FMA-2007-PJ2	Acquisition	3227 Wake Robin Trail, Chamblee, GA 30341	Henderson Mill Creek	11/20/2008	2 story w/o basement	$ 303,309.46	900.21											
22	PDM-2005-PJ2	Acquisition	2148 Drew Valley, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 190,178.97	849.23											
23	PDM-2005-PJ2	Acquisition	2154 Drew Valley, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 158,983.03	848.37											
24	PDM-2005-PJ2	Acquisition	2158 Drew Valley, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 165,764.76	849.67											
25	PDM-2005-PJ2	Acquisition	2166 Drew Valley, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 113,739.23	849.60											
26	PDM-2005-PJ2	Acquisition	2292 Burch Circle NE, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 118,389.56	852.61											
27	PDM-2005-PJ2	Acquisition	2298 Burch Circle, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 211,880.50	853.04											
28	PDM-2005-PJ2	Acquisition	2304 Burch Circle, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 161,889.49	853.05											
29	PDM-2005-PJ2	Acquisition	2310 Burch Circle, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 116,064.40	853.76											
30	PDM-2005-PJ2	Acquisition	2329 Nesbitt Drive, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 114,611.17	854.25											
31	PDM-2005-PJ2	Acquisition	2335 Nesbitt Drive, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 111,317.19	853.76											

Table D.6 (part 3 of 4)

Summary of Losses Avoided and ROI Calculations for DeKalb County, July 2005 Event

No.	Disaster/ Proj No	Project Type	Address	Flooding Source	Mitigation Completion Date	Building Type	BRV (2010$)	FFE (ft, NGVD29)	WSE for Event (ft, NGVD29)	Final Flood Depth (ft)	Building Damage ($)	Contents Damage ($)	Displacement Cost ($)	Disruption Cost ($)	Debris Removal Services ($)	Reduced Insurance Transaction Cost ($)	Total Losses Avoided ($)	Total Project Investment (2010$)	ROI
32	PDM-2005-PJ2	Acquisition	2339 Nesbitt Drive, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 107,248.15	854.64											
33	PDM-2005-PJ2	Acquisition	2361 Bynum Rd, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 122,361.71	860.02											
34	PDM-2005-PJ2	Acquisition	2387 Drew Valley, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 120,908.49	866.39											
35	PDM-2005-PJ2	Acquisition	2406 Drew Valley, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o Basement	$ 149,682.38	875.91											
36	PDM-2005-PJ2	Acquisition	2411 Oostanuala Dr, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 180,103.27	878.26											
160	PDMC-PJ-04-GA-2007-005	Acquisition	2313 Hunting Valley Dr, Decatur, GA 30033	South Fork Peachtree Creek	1/12/2009	1 story w/o basement	$ 123,729.06	898.50											
191	PDMC-PJ-04-GA-2007-006	Acquisition	678 Heathmoor Pl, Decatur, GA 30032	Indian Creek	1/16/2009	1 story w/o basement	$ 146,859.05	883.70											
158	PDMC-PJ-04-GA-2007-005	Acquisition	2331 Hunting Valley Dr, Decatur, GA 30033	South Fork Peachtree Creek	1/29/2009	1 story w/o basement	$ 148,393.34	898.30											
176	FMA-2007-PJ2	Acquisition	2380 Bynum Road, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	1/30/2009	2 story w/o basement	$ 236,450.92	863.00											
181	FMA-2007-PJ2	Acquisition	2151 Medfield Trail NE, Atlanta, GA 30345	North Fork Peachtree Creek	1/30/2009	1 story w/o basement	$ 122,506.04	848.30											
175	FMA-2007-PJ2	Acquisition	2746 Dunnington Circle, Atlanta, GA 30341	Peachtree Branch of Henderson Mill Creek	2/10/2009	2 story w/o basement	$ 273,651.17	891.90											
178	FMA-2007-PJ2	Acquisition	2506 Nancy Lane, Atlanta, GA 30345	North Fork Peachtree Creek	2/10/2009	Split level w/o basement	$ 364,868.23	859.70											
182	FMA-2007-PJ2	Acquisition	3197 Barkside Court, Atlanta, GA 30341	North Fork Peachtree Creek	2/10/2009	2 story w/o basement	$ 192,625.97	892.00											
183	FMA-2007-PJ2	Acquisition	3208 Windsor Forest Road, Chamblee, GA 30341	North Fork Peachtree Creek	2/10/2009	Split level w/o basement	$ 176,319.01	884.20											
73	FMA-PJ-04-GA-2006-005	Acquisition	1986 Royal Ct, Chamblee, GA 30341	Nancy Creek	3/30/2009	2 story w/o basement	$ 252,350.21	925.98											
74	FMA-PJ-04-GA-2006-005	Acquisition	1965 Royal Ct, Atlanta, GA 30341	Nancy Creek	3/30/2009	2 story w/o basement	$ 216,780.65	925.29											
75	FMA-PJ-04-GA-2006-005	Acquisition	1976 Queens Way, Chamblee, GA 30341	Nancy Creek	3/30/2009	1 story w/o basement	$ 237,572.02	922.12											
157	PDMC-PJ-04-GA-2007-005	Acquisition	2337 Hunting Valley Dr, Decatur, GA 30033	South Fork Peachtree Creek	4/20/2009	1 story w/o basement	$ 123,729.06	899.40											
159	PDMC-PJ-04-GA-2007-005	Acquisition	2325 Hunting Valley Dr, Decatur, GA 30033	South Fork Peachtree Creek	6/22/2009	1 story w/o basement	$ 123,729.06	899.50											
55	RFC-PJ-04-GA-2006-001	Acquisition	1977 Queens Way, Chamblee, GA 30341	Nancy Creek	6/30/2009	Split level w/o basement	$ 307,284.28	920.95											
56	RFC-PJ-04-GA-2006-001	Acquisition	1982 Queens Way, Chamblee, GA 30341	Nancy Creek	6/30/2009	2 story w/o basement	$ 206,894.56	924.45											
57	RFC-PJ-04-GA-2006-001	Acquisition	1988 Queens Way, Chamblee, GA 30341	Nancy Creek	6/30/2009	2 story w/o basement	$ 240,527.66	919.84											
58	RFC-PJ-04-GA-2006-001	Acquisition	2003 Royal Court, Chamblee, GA 30341	Nancy Creek	6/30/2009	2 story w/o basement	$ 247,152.36	924.03											
59	RFC-PJ-04-GA-2006-001	Acquisition	2006 Royal Court, Chamblee, GA 30341	Nancy Creek	6/30/2009	1 story w/o basement	$ 224,730.29	922.75											
60	RFC-PJ-04-GA-2006-001	Acquisition	2014 Royal Court, Chamblee, GA 30341	Nancy Creek	6/30/2009	1 story w/o basement	$ 227,380.17	922.23											
177	FMA-2007-PJ2	Acquisition	1748 Dresden Drive , Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	7/10/2009	1 story w/o basement	$ 137,793.81	877.50											
154	PDMC-PJ-04-GA-2007-005	Acquisition	2814 Riderwood Dr, Decatur, GA 30033	Burnt Fork Creek	7/24/2009	1 story w/o basement	$ 171,426.92	960.10											
155	PDMC-PJ-04-GA-2007-005	Acquisition	2820 Riderwood Dr, Decatur, GA 30033	Burnt Fork Creek	7/24/2009	1 story w/o basement	$ 145,437.70	960.10											
161	PDMC-PJ-04-GA-2007-005	Acquisition	2397 Hunting Valley Dr, Decatur, GA 30033	South Fork Peachtree Creek	7/24/2009	1 story w/o basement	$ 146,354.97	899.40											
162	PDMC-PJ-04-GA-2007-005	Acquisition	1031 Scott Circle, Decatur, GA 30033	South Fork Peachtree Creek	7/24/2009	1 story w/o basement	$ 115,575.58	897.50											

Table D.6 (part 4 of 4)

Summary of Losses Avoided and ROI Calculations for DeKalb County, July 2005 Event

No.	Disaster/ Proj No	Project Type	Address	Flooding Source	Mitigation Completion Date	Building Type	BRV (2010$)	FFE (ft, NGVD29)	WSE for Event (ft, NGVD29)	Final Flood Depth (ft)	Building Damage ($)	Contents Damage ($)	Displacement Cost ($)	Disruption Cost ($)	Debris Removal Services ($)	Reduced Insurance Transaction Cost ($)	Total Losses Avoided ($)	Total Project Investment (2010$)	ROI
165	PDMC-PJ-04-GA-2007-005	Acquisition	999 Scott Circle, Decatur, GA 30033	South Fork Peachtree Creek	7/24/2009	1 story w/o basement	$ 199,658.34	899.50											
163	PDMC-PJ-04-GA-2007-005	Acquisition	1023 Scott Circle, Decatur, GA 30033	South Fork Peachtree Creek	7/27/2009	1 story w/o basement	$ 115,575.58	898.60											
164	PDMC-PJ-04-GA-2007-005	Acquisition	1005 Scott Circle, Decatur, GA 30033	South Fork Peachtree Creek	8/14/2009	1 story w/o basement	$ 130,965.27	899.60											
76	RFC-PJ-04-GA-001	Acquisition	631 Densley Dr, Decatur, GA 30033	South Fork Peachtree Creek Tributary	9/30/2009	2 story w/o basement	$ 296,371.05	883.60											
78	RFC-2007	Acquisition	2056 Desmond Dr, Decatur, GA 30033	South Fork Peachtree Creek Tributary	9/30/2009	1 story w/o basement	$ 186,435.85	881.50											
										TOTAL	$ 485,362.58	$ 277,974.98	$ 107,815.82	$ 135,121.87	$ 22,918.82	$ 10,907.67	$ 1,040,101.75	$ 7,619,520.37	13.65%

BRV = building replacement value
FFE = first floor elevation
ft = feet
NGVD29 = National Geodetic Vertical Datum of 1929
ROI = Return on Investment
WSE = water surface elevation

Indicates property was not mitigated at time of the storm event.

Table D.7 (part 1 of 4)

Summary of Losses Avoided and ROI Calculations for DeKalb County, June 2006 Event

No.	Disaster/ Proj No	Project Type	Address	Flooding Source	Mitigation Completion Date	Building Type	BRV (2010$)	FFE (ft, NGVD29)	WSE for Event (ft, NGVD29)	Final Flood Depth (ft)	Building Damage ($)	Contents Damage ($)	Displacement Cost ($)	Disruption Cost ($)	Debris Removal Services ($)	Reduced Insurance Transaction Cost ($)	Total Losses Avoided ($)	Total Project Investment (2010$)	ROI
148	1209-0017	Acquisition	2000 McJenkins Dr, Decatur, GA 30032	North Fork Peachtree Creek	5/13/2002	2 story w/o basement	$ 299,215.0	850.00								$ -	$ -	$ 267,445.6	0.0%
142	1071-004	Acquisition	2023 Audubon Dr, Atlanta, GA 30329	Unnamed North Fork Peachtree Creek Tributary	7/18/2002	1 story w/o basement	$ 146,700.8	864.60								$ -	$ -	$ 167,878.7	0.0%
143	1071-004	Acquisition	2263 Melinda Dr, Atlanta, GA 30345	North Fork Peachtree Creek	7/18/2002	2 story w/o basement	$ 197,165.7	858.80								$ -	$ -	$ 164,078.4	0.0%
144	1071-004	Acquisition	1989 Queens Way, Chamblee, GA 30341	Nancy Creek	7/18/2002	1 story w/o basement	$ 239,883.9	924.00	920.93	-3.07	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 228,683.7	0.0%
145	1071-004	Acquisition	3164 Bobbie Lane, Decatur, GA 30032	Cobbs Creek	7/18/2002	2 story w/o basement	$ 160,981.8	931.10								$ -	$ -	$ 99,470.6	0.0%
146	1071-004	Acquisition	649 Cheviot Dr, Decatur, GA 30032	Indian Creek	7/18/2002	2 story w/o basement	$ 196,952.5	882.20								$ -	$ -	$ 102,006.7	0.0%
147	1071-004	Acquisition	665 Cheviot Dr, Decatur, GA 30032	Indian Creek	7/18/2002	2 story w/o basement	$ 228,000.8	881.80								$ -	$ -	$ 114,674.4	0.0%
2	1209-0042	Acquisition	6251 Cathedral Lane, Lithonia, GA 30030	Stephenson Creek	5/22/2003	2 story w/o basement	$ 225,157.6	686.50								$ -	$ -	$ 168,801.4	0.0%
1	1209-0042	Acquisition	3230 Barkside Court, Chamblee, GA 30030	North Fork Peachtree Creek	5/23/2003	2 story w/o basement	$ 250,382.7	884.30								$ -	$ -	$ 321,384.5	0.0%
6	1209-0042	Acquisition	2293 Hunting Valley, Decatur, GA 30030	South Fork Peachtree Creek	6/10/2003	2 story w/o basement	$ 145,351.0	895.50								$ -	$ -	$ 358,591.9	0.0%
4	1209-0042	Acquisition	671 Cheviot Drive, Decatur, GA 30030	Indian Creek	6/12/2003	2 story w/o basement	$ 297,752.4	880.10								$ -	$ -	$ 170,384.3	0.0%
5	1209-0042	Acquisition	2441 Green Forrest, Decatur, GA 30030	Shoal Creek	7/24/2003	2 story w/o basement	$ 104,220.6	822.40								$ -	$ -	$ 185,687.6	0.0%
7	1209-0042	Acquisition	2133 Medfield Trail NE, Atlanta, GA 30345	North Fork Peachtree Creek	4/16/2004	2 story w/o basement	$ 156,423.8	847.00								$ -	$ -	$ 274,289.3	0.0%
11	1209-0042	Acquisition	683 Cheviot Drive, Decatur, GA 30032	Indian Creek	5/14/2004	2 story w/o basement	$ 162,080.8	881.90								$ -	$ -	$ 189,510.4	0.0%
10	1209-0042	Acquisition	677 Cheviot Drive, Decatur, GA 30032	Indian Creek	5/19/2004	2 story w/o basement	$ 239,024.7	880.00								$ -	$ -	$ 179,002.8	0.0%
12	1209-0042	Acquisition	687 Cheviot Drive, Decatur, GA 30032	Indian Creek	6/1/2004	2 story w/o basement	$ 183,932.8	881.90								$ -	$ -	$ 191,830.5	0.0%
13	1209-0042	Acquisition	686 Heathmoor Pl, Decatur, GA 30032	Indian Creek	6/16/2004	1 story w/o basement	$ 109,259.8	879.60								$ -	$ -	$ 172,792.5	0.0%
3	1209-0042	Acquisition	657 Cheviot Drive, Decatur, GA 30032	Indian Creek	8/11/2004	2 story w/o basement	$ 250,299.3	880.10								$ -	$ -	$ 188,800.0	0.0%
201	1209-0042	Acquisition	2333 Poplar Springs Dr NE, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	11/18/2004	2 story w/o basement	$ 182,922.3	852.54	849.62	-2.92	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 337,384.3	0.0%
9	1209-0042	Acquisition	643 Cheviot Drive, Decatur, GA 30032	Indian Creek	12/3/2004	2 story w/o basement	$ 265,262.6	880.00								$ -	$ -	$ 206,030.1	0.0%
14	1209-0042	Acquisition	694 Heathmoor Pl, Decatur, GA 30032	Indian Creek	3/31/2005	1 story w/o basement	$ 140,312.0	880.50								$ -	$ -	$ 188,750.7	0.0%
15	1209-0042	Acquisition	621 Densley Drive, Decatur, GA 30033	South Fork Peachtree Creek Tributary	3/31/2005	2 story w/o basement	$ 161,651.4	884.60								$ -	$ -	$ 346,621.8	0.0%
16	1209-0042	Acquisition	3743 Kingswood Dr, Decatur, GA 30032	Indian Creek	3/31/2005	2 story w/o basement	$ 227,159.8	883.20								$ -	$ -	$ 163,013.6	0.0%
17	1209-0042	Acquisition	2402 Drew Valley, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	3/31/2005	1 story w/o basement	$ 86,600.3	875.91	867.90	-8.01	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 228,933.4	0.0%
18	1209-0042	Acquisition	2396 Drew Valley, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	3/31/2005	1 story w/o basement	$ 168,795.6	875.09	869.43	-5.66	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 350,475.2	0.0%
19	1209-0042	Acquisition	2390 Drew Valley, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	3/31/2005	1 story w/o basement	$ 139,201.3	874.48	870.54	-3.94	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 330,419.8	0.0%
20	1209-0042	Acquisition	2319 Poplar Springs Dr NE, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	3/31/2005	2 story w/o basement	$ 186,834.3	850.30	846.65	-3.65	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 279,257.5	0.0%

Table D.7 (part 2 of 4)

Summary of Losses Avoided and ROI Calculations for DeKalb County, June 2006 Event

No.	Disaster/ Proj No	Project Type	Address	Flooding Source	Mitigation Completion Date	Building Type	BRV (2010$)	FFE (ft, NGVD29)	WSE for Event (ft, NGVD29)	Final Flood Depth (ft)	Building Damage ($)	Contents Damage ($)	Displacement Cost ($)	Disruption Cost ($)	Debris Removal Services ($)	Reduced Insurance Transaction Cost ($)	Total Losses Avoided ($)	Total Project Investment (2010$)	ROI
21	1209-0042	Acquisition	2327 Poplar Springs Dr NE, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	3/31/2005	2 story w/o basement	$ 178,540.9	851.23	846.63	-4.60	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 274,385.1	0.0%
126	1209-0042	Acquisition	2301 Poplar Springs, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	3/31/2005	2 story w/o basement	$ 238,463.5	851.20	846.63	-4.57	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 269,643.7	0.0%
65	1209-059	Acquisition	2813 Riderwood Dr, Decatur, GA 30033	Burnt Fork Creek	6/9/2005	2 story w/o basement	$ 304,544.6	956.30								$ -	$ -	$ 407,710.9	0.0%
66	1209-059	Acquisition	3636 Bishop Dr, Tucker, GA 30084	Unnamed South Fork Peachtree Tributary	6/9/2005	1 story w/o basement	$ 176,840.7	1010.00								$ -	$ -	$ 198,247.5	0.0%
67	1209-059	Acquisition	2157 Medfield Tr, Atlanta, GA 30345	North Fork Peachtree Creek	6/9/2005	1 story w/o basement	$ 138,773.8	846.90								$ -	$ -	$ 225,491.6	0.0%
68	1209-059	Acquisition	2342 Nesbitt Dr, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	6/9/2005	1 story w/o basement	$ 117,179.7	855.00	853.68	-1.32	$ 2,003.8	$ 1,923.7	$ -	$ 3,017.9	$ 85.8	$ -	$ 7,031.2	$ 267,842.2	2.6%
141	PDM-2005-PJ5	Acquisition	3141 Buford Highway, Atlanta, GA 30329	North Fork Peachtree Creek	8/9/2007	2 story w/o basement	$ 911,552.6	833.80											
170	PDM-PJ-04-GA-2006-002	Acquisition	1991 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	10/1/2007	Split level w/o basement	$ 203,531.2	921.60											
174	PDM-PJ-04-GA-2006-002	Acquisition	1946 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	10/16/2007	1 story w/o basement	$ 186,816.6	922.59											
172	PDM-PJ-04-GA-2006-002	Acquisition	1954 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	10/22/2007	Split level w/o basement	$ 232,883.8	923.01											
171	PDM-PJ-04-GA-2006-002	Acquisition	1947 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	10/28/2007	Split level w/o basement	$ 209,034.8	920.97											
173	PDM-PJ-04-GA-2006-002	Acquisition	1955 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	10/28/2007	2 story w/o basement	$ 208,525.3	925.09											
169	PDM-PJ-04-GA-2006-002	Acquisition	1939 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	11/12/2007	1 Story w/o basement	$ 221,061.2	922.03											
166	PDM-PJ-04-GA-2006-002	Acquisition	1915 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	4/18/2008	Split level w/o basement	$ 226,768.7	920.78											
167	PDM-PJ-04-GA-2006-002	Acquisition	1923 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	6/1/2008	Split level w/o basement	$ 274,364.6	920.67											
168	PDM-PJ-04-GA-2006-002	Acquisition	1931 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	6/1/2008	1 Story w/o basement	$ 216,067.2	924.20											
52	PDMC-PJ-04-2005-001	Acquisition	3139 Buford Highway, Atlanta, GA 30329	North Fork Peachtree Creek	7/30/2008	2 story w/o basement	$ 1,015,515.9	834.20											
53	PDMC-PJ-04-2005-001	Acquisition	3145 Buford Highway, Atlanta, GA 30329	North Fork Peachtree Creek	7/30/2008	2 story w/o basement	$ 1,015,515.9	832.50											
54	PDMC-PJ-04-2005-001	Acquisition	3143 Buford Highway, Atlanta, GA 30329	North Fork Peachtree Creek	7/30/2008	2 story w/o basement	$ 1,015,515.9	832.80											
194	PDMC-PJ-04-GA-2007-001	Acquisition	520 Weschester, Decatur, GA 30030	Peavine Creek Tributary	11/18/2008	1 story w/o basement	$ 204,952.4	926.90											
195	PDMC-PJ-04-GA-2007-001	Acquisition	514 Weschester, Decatur, GA 30030	Peavine Creek Tributary	11/18/2008	1 story w/o basement	$ 198,885.8	926.58											
196	PDMC-PJ-04-GA-2007-001	Acquisition	526 Weschester, Decatur, GA 30030	Peavine Creek Tributary	11/18/2008	1 story w/o basement	$ 125,329.1	926.24											
197	PDMC-PJ-04-GA-2007-001	Acquisition	532 Weschester, Decatur, GA 30030	Peavine Creek Tributary	11/18/2008	2 story w/o basement	$ 199,987.3	925.00											
179	FMA-2007-PJ2	Acquisition	3227 Wake Robin Trail, Chamblee, GA 30341	Henderson Mill Creek	11/20/2008	2 story w/o basement	$ 303,309.5	900.21											
22	PDM-2005-PJ2	Acquisition	2148 Drew Valley, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 190,179.0	849.23											
23	PDM-2005-PJ2	Acquisition	2154 Drew Valley, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 158,983.0	848.37											
24	PDM-2005-PJ2	Acquisition	2158 Drew Valley, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 165,764.8	849.67											
25	PDM-2005-PJ2	Acquisition	2166 Drew Valley, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 113,739.2	849.60											
26	PDM-2005-PJ2	Acquisition	2292 Burch Circle NE, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 118,389.6	852.61											
27	PDM-2005-PJ2	Acquisition	2298 Burch Circle, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 211,880.5	853.04											

Table D.7 (part 3 of 4)

Summary of Losses Avoided and ROI Calculations for DeKalb County, June 2006 Event

No.	Disaster/ Proj No	Project Type	Address	Flooding Source	Mitigation Completion Date	Building Type	BRV (2010$)	FFE (ft, NGVD29)	WSE for Event (ft, NGVD29)	Final Flood Depth (ft)	Building Damage ($)	Contents Damage ($)	Displacement Cost ($)	Disruption Cost ($)	Debris Removal Services ($)	Reduced Insurance Transaction Cost ($)	Total Losses Avoided ($)	Total Project Investment (2010$)	ROI
28	PDM-2005-PJ2	Acquisition	2304 Burch Circle, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 161,889.5	853.05											
29	PDM-2005-PJ2	Acquisition	2310 Burch Circle, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 116,064.4	853.76											
30	PDM-2005-PJ2	Acquisition	2329 Nesbitt Drive, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 114,611.2	854.25											
31	PDM-2005-PJ2	Acquisition	2335 Nesbitt Drive, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 111,317.2	853.76											
32	PDM-2005-PJ2	Acquisition	2339 Nesbitt Drive, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 107,248.2	854.64											
33	PDM-2005-PJ2	Acquisition	2361 Bynum Rd, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 122,361.7	860.02											
34	PDM-2005-PJ2	Acquisition	2387 Drew Valley, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 120,908.5	866.39											
35	PDM-2005-PJ2	Acquisition	2406 Drew Valley, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o Basement	$ 149,682.4	875.91											
36	PDM-2005-PJ2	Acquisition	2411 Oostanuala Dr, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 180,103.3	878.26											
160	PDMC-PJ-04-GA-2007-005	Acquisition	2313 Hunting Valley Dr, Decatur, GA 30033	South Fork Peachtree Creek	1/12/2009	1 story w/o basement	$ 123,729.1	898.50											
191	PDMC-PJ-04-GA-2007-006	Acquisition	678 Heathmoor Pl, Decatur, GA 30032	Indian Creek	1/16/2009	1 story w/o basement	$ 146,859.0	883.70											
158	PDMC-PJ-04-GA-2007-005	Acquisition	2331 Hunting Valley Dr, Decatur, GA 30033	South Fork Peachtree Creek	1/29/2009	1 story w/o basement	$ 148,393.3	898.30											
176	FMA-2007-PJ2	Acquisition	2380 Bynum Road, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	1/30/2009	2 story w/o basement	$ 236,450.9	863.00											
181	FMA-2007-PJ2	Acquisition	2151 Medfield Trail NE, Atlanta, GA 30345	North Fork Peachtree Creek	1/30/2009	1 story w/o basement	$ 122,506.0	848.30											
175	FMA-2007-PJ2	Acquisition	2746 Dunnington Circle, Atlanta, GA 30341	Peachtree Branch of Henderson Mill Creek	2/10/2009	2 story w/o basement	$ 273,651.2	891.90											
178	FMA-2007-PJ2	Acquisition	2506 Nancy Lane, Atlanta, GA 30345	North Fork Peachtree Creek	2/10/2009	Split level w/o basement	$ 364,868.2	859.70											
182	FMA-2007-PJ2	Acquisition	3197 Barkside Court, Atlanta, GA 30341	North Fork Peachtree Creek	2/10/2009	2 story w/o basement	$ 192,626.0	892.00											
183	FMA-2007-PJ2	Acquisition	3208 Windsor Forest Road, Chamblee, GA 30341	North Fork Peachtree Creek	2/10/2009	Split level w/o basement	$ 176,319.0	884.20											
73	FMA-PJ-04-GA-2006-005	Acquisition	1986 Royal Ct, Chamblee, GA 30341	Nancy Creek	3/30/2009	2 story w/o basement	$ 252,350.2	925.98											
74	FMA-PJ-04-GA-2006-005	Acquisition	1965 Royal Ct, Atlanta, GA 30341	Nancy Creek	3/30/2009	2 story w/o basement	$ 216,780.6	925.29											
75	FMA-PJ-04-GA-2006-005	Acquisition	1976 Queens Way, Chamblee, GA 30341	Nancy Creek	3/30/2009	1 story w/o basement	$ 237,572.0	922.12											
157	PDMC-PJ-04-GA-2007-005	Acquisition	2337 Hunting Valley Dr, Decatur, GA 30033	South Fork Peachtree Creek	4/20/2009	1 story w/o basement	$ 123,729.1	899.40											
159	PDMC-PJ-04-GA-2007-005	Acquisition	2325 Hunting Valley Dr, Decatur, GA 30033	South Fork Peachtree Creek	6/22/2009	1 story w/o basement	$ 123,729.1	899.50											
55	RFC-PJ-04-GA-2006-001	Acquisition	1977 Queens Way, Chamblee, GA 30341	Nancy Creek	6/30/2009	Split level w/o basement	$ 307,284.3	920.95											
56	RFC-PJ-04-GA-2006-001	Acquisition	1982 Queens Way, Chamblee, GA 30341	Nancy Creek	6/30/2009	2 story w/o basement	$ 206,894.6	924.45											

Table D.7 (part 4 of 4)

Summary of Losses Avoided and ROI Calculations for DeKalb County, June 2006 Event

No.	Disaster/ Proj No	Project Type	Address	Flooding Source	Mitigation Completion Date	Building Type	BRV (2010$)	FFE (ft, NGVD29)	WSE for Event (ft, NGVD29)	Final Flood Depth (ft)	Building Damage ($)	Contents Damage ($)	Displacement Cost ($)	Disruption Cost ($)	Debris Removal Services ($)	Reduced Insurance Transaction Cost ($)	Total Losses Avoided ($)	Total Project Investment (2010$)	ROI
57	RFC-PJ-04-GA-2006-001	Acquisition	1988 Queens Way, Chamblee, GA 30341	Nancy Creek	6/30/2009	2 story w/o basement	$ 240,527.7	919.84											
58	RFC-PJ-04-GA-2006-001	Acquisition	2003 Royal Court, Chamblee, GA 30341	Nancy Creek	6/30/2009	2 story w/o basement	$ 247,152.4	924.03											
59	RFC-PJ-04-GA-2006-001	Acquisition	2006 Royal Court, Chamblee, GA 30341	Nancy Creek	6/30/2009	1 story w/o basement	$ 224,730.3	922.75											
60	RFC-PJ-04-GA-2006-001	Acquisition	2014 Royal Court, Chamblee, GA 30341	Nancy Creek	6/30/2009	1 story w/o basement	$ 227,380.2	922.23											
177	FMA-2007-PJ2	Acquisition	1748 Dresden Drive , Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	7/10/2009	1 story w/o basement	$ 137,793.8	877.50											
154	PDMC-PJ-04-GA-2007-005	Acquisition	2814 Riderwood Dr, Decatur, GA 30033	Burnt Fork Creek	7/24/2009	1 story w/o basement	$ 171,426.9	960.10											
155	PDMC-PJ-04-GA-2007-005	Acquisition	2820 Riderwood Dr, Decatur, GA 30033	Burnt Fork Creek	7/24/2009	1 story w/o basement	$ 145,437.7	960.10											
161	PDMC-PJ-04-GA-2007-005	Acquisition	2397 Hunting Valley Dr, Decatur, GA 30033	South Fork Peachtree Creek	7/24/2009	1 story w/o basement	$ 146,355.0	899.40											
162	PDMC-PJ-04-GA-2007-005	Acquisition	1031 Scott Circle, Decatur, GA 30033	South Fork Peachtree Creek	7/24/2009	1 story w/o basement	$ 115,575.6	897.50											
165	PDMC-PJ-04-GA-2007-005	Acquisition	999 Scott Circle, Decatur, GA 30033	South Fork Peachtree Creek	7/24/2009	1 story w/o basement	$ 199,658.3	899.50											
163	PDMC-PJ-04-GA-2007-005	Acquisition	1023 Scott Circle, Decatur, GA 30033	South Fork Peachtree Creek	7/27/2009	1 story w/o basement	$ 115,575.6	898.60											
164	PDMC-PJ-04-GA-2007-005	Acquisition	1005 Scott Circle, Decatur, GA 30033	South Fork Peachtree Creek	8/14/2009	1 story w/o basement	$ 130,965.3	899.60											
76	RFC-PJ-04-GA-001	Acquisition	631 Densley Dr, Decatur, GA 30033	South Fork Peachtree Creek Tributary	9/30/2009	2 story w/o basement	$ 296,371.0	883.60											
78	RFC-2007	Acquisition	2056 Desmond Dr, Decatur, GA 30033	South Fork Peachtree Creek Tributary	9/30/2009	1 story w/o basement	$ 186,435.9	881.50											
										TOTAL	$ 2,003.8	$ 1,923.7	$ -	$ 3,017.9	$ 85.8	$ -	$ 7,031.2	$ 7,619,520.4	0.09%

BRV = building replacement value
FFE = first floor elevation
ft = feet
NGVD29 = National Geodetic Vertical Datum of 1929
ROI = Return on Investment
WSE = water surface elevation

Indicates property was not mitigated at time of the storm event.

Table D.8 (part 1 of 4)

Summary of Losses Avoided and ROI Calculations for DeKalb County, August 2006 Event

No.	Disaster/ Proj No	Project Type	Address	Flooding Source	Mitigation Completion Date	Building Type	BRV (2010$)	FFE (ft, NGVD29)	WSE for Event (ft, NGVD29)	Final Flood Depth (ft)	Building Damage ($)	Contents Damage ($)	Displacement Cost ($)	Disruption Cost ($)	Debris Removal Services ($)	Reduced Insurance Transaction Cost ($)	Total Losses Avoided ($)	Total Project Investment (2010$)	ROI
148	1209-0017	Acquisition	2000 McJenkins Dr, Decatur, GA 30032	North Fork Peachtree Creek	5/13/2002	2 story w/o basement	$ 299,215.00	850.00	850.29	0.29	$ 33,030.22	$ 18,223.79	$ 2,197.70	$ 7,213.68	$ 1,364.19	$ 1,600.00	$ 63,629.58	$ 267,445.57	23.8%
142	1071-004	Acquisition	2023 Audubon Dr, Atlanta, GA 30329	Unnamed North Fork Peachtree Creek Tributary	7/18/2002	1 story w/o basement	$ 146,700.84	864.60								$ -	$ -	$ 167,878.71	0.0%
143	1071-004	Acquisition	2263 Melinda Dr, Atlanta, GA 30345	North Fork Peachtree Creek	7/18/2002	2 story w/o basement	$ 197,165.69	858.80	855.89	-2.91	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 164,078.39	0.0%
144	1071-004	Acquisition	1989 Queens Way, Chamblee, GA 30341	Nancy Creek	7/18/2002	1 story w/o basement	$ 239,883.91	924.00								$ -	$ -	$ 228,683.67	0.0%
145	1071-004	Acquisition	3164 Bobbie Lane, Decatur, GA 30032	Cobbs Creek	7/18/2002	2 story w/o basement	$ 160,981.79	931.10								$ -	$ -	$ 99,470.59	0.0%
146	1071-004	Acquisition	649 Cheviot Dr, Decatur, GA 30032	Indian Creek	7/18/2002	2 story w/o basement	$ 196,952.48	882.20								$ -	$ -	$ 102,006.66	0.0%
147	1071-004	Acquisition	665 Cheviot Dr, Decatur, GA 30032	Indian Creek	7/18/2002	2 story w/o basement	$ 228,000.80	881.80								$ -	$ -	$ 114,674.36	0.0%
2	1209-0042	Acquisition	6251 Cathedral Lane, Lithonia, GA 30030	Stephenson Creek	5/22/2003	2 story w/o basement	$ 225,157.59	686.50								$ -	$ -	$ 168,801.42	0.0%
1	1209-0042	Acquisition	3230 Barkside Court, Chamblee, GA 30030	North Fork Peachtree Creek	5/23/2003	2 story w/o basement	$ 250,382.70	884.30	888.07	3.77	$ 75,708.99	$ 44,608.34	$ 21,118.49	$ 15,848.33	$ 5,008.33	$ 3,000.00	$ 165,292.49	$ 321,384.49	51.4%
6	1209-0042	Acquisition	2293 Hunting Valley, Decatur, GA 30030	South Fork Peachtree Creek	6/10/2003	2 story w/o basement	$ 145,351.00	895.50	895.41	-0.09	$ 12,724.56	$ 6,764.00	$ -	$ 6,186.16	$ 780.88	$ -	$ 26,455.60	$ 358,591.86	7.4%
4	1209-0042	Acquisition	671 Cheviot Drive, Decatur, GA 30030	Indian Creek	6/12/2003	2 story w/o basement	$ 297,752.40	880.10								$ -	$ -	$ 170,384.27	0.0%
5	1209-0042	Acquisition	2441 Green Forrest, Decatur, GA 30030	Shoal Creek	7/24/2003	2 story w/o basement	$ 104,220.55	822.40								$ -	$ -	$ 185,687.59	0.0%
7	1209-0042	Acquisition	2133 Medfield Trail NE, Atlanta, GA 30345	North Fork Peachtree Creek	4/16/2004	2 story w/o basement	$ 156,423.83	847.00	847.47	0.47	$ 18,896.61	$ 10,548.65	$ 2,150.49	$ 7,682.08	$ 902.72	$ 1,175.00	$ 41,355.54	$ 274,289.34	15.1%
11	1209-0042	Acquisition	683 Cheviot Drive, Decatur, GA 30032	Indian Creek	5/14/2004	2 story w/o basement	$ 162,080.80	881.90								$ -	$ -	$ 189,510.43	0.0%
10	1209-0042	Acquisition	677 Cheviot Drive, Decatur, GA 30032	Indian Creek	5/19/2004	2 story w/o basement	$ 239,024.73	880.00								$ -	$ -	$ 179,002.77	0.0%
12	1209-0042	Acquisition	687 Cheviot Drive, Decatur, GA 30032	Indian Creek	6/1/2004	2 story w/o basement	$ 183,932.77	881.90								$ -	$ -	$ 191,830.47	0.0%
13	1209-0042	Acquisition	686 Heathmoor Pl, Decatur, GA 30032	Indian Creek	6/16/2004	1 story w/o basement	$ 109,259.83	879.60								$ -	$ -	$ 172,792.50	0.0%
3	1209-0042	Acquisition	657 Cheviot Drive, Decatur, GA 30032	Indian Creek	8/11/2004	2 story w/o basement	$ 250,299.27	880.10								$ -	$ -	$ 188,799.97	0.0%
201	1209-0042	Acquisition	2333 Poplar Springs Dr NE, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	11/18/2004	2 story w/o basement	$ 182,922.31	852.54								$ -	$ -	$ 337,384.25	0.0%
9	1209-0042	Acquisition	643 Cheviot Drive, Decatur, GA 30032	Indian Creek	12/3/2004	2 story w/o basement	$ 265,262.60	880.00								$ -	$ -	$ 206,030.14	0.0%
14	1209-0042	Acquisition	694 Heathmoor Pl, Decatur, GA 30032	Indian Creek	3/31/2005	1 story w/o basement	$ 140,312.02	880.50								$ -	$ -	$ 188,750.69	0.0%
15	1209-0042	Acquisition	621 Densley Drive, Decatur, GA 30033	South Fork Peachtree Creek Tributary	3/31/2005	2 story w/o basement	$ 161,651.37	884.60								$ -	$ -	$ 346,621.79	0.0%
16	1209-0042	Acquisition	3743 Kingswood Dr, Decatur, GA 30032	Indian Creek	3/31/2005	2 story w/o basement	$ 227,159.82	883.20								$ -	$ -	$ 163,013.64	0.0%
17	1209-0042	Acquisition	2402 Drew Valley, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	3/31/2005	1 story w/o basement	$ 86,600.34	875.91								$ -	$ -	$ 228,933.44	0.0%
18	1209-0042	Acquisition	2396 Drew Valley, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	3/31/2005	1 story w/o basement	$ 168,795.58	875.09								$ -	$ -	$ 350,475.22	0.0%
19	1209-0042	Acquisition	2390 Drew Valley, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	3/31/2005	1 story w/o basement	$ 139,201.29	874.48								$ -	$ -	$ 330,419.77	0.0%
20	1209-0042	Acquisition	2319 Poplar Springs Dr NE, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	3/31/2005	2 story w/o basement	$ 186,834.25	850.30								$ -	$ -	$ 279,257.53	0.0%
21	1209-0042	Acquisition	2327 Poplar Springs Dr NE, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	3/31/2005	2 story w/o basement	$ 178,540.94	851.23								$ -	$ -	$ 274,385.10	0.0%
126	1209-0042	Acquisition	2301 Poplar Springs, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	3/31/2005	2 story w/o basement	$ 238,463.54	851.20								$ -	$ -	$ 269,643.67	0.0%

Table D.8 (part 2 of 4)

Summary of Losses Avoided and ROI Calculations for DeKalb County, August 2006 Event

No.	Disaster/ Proj No	Project Type	Address	Flooding Source	Mitigation Completion Date	Building Type	BRV (2010$)	FFE (ft, NGVD29)	WSE for Event (ft, NGVD29)	Final Flood Depth (ft)	Building Damage ($)	Contents Damage ($)	Displacement Cost ($)	Disruption Cost ($)	Debris Removal Services ($)	Reduced Insurance Transaction Cost ($)	Total Losses Avoided ($)	Total Project Investment (2010$)	ROI
65	1209-059	Acquisition	2813 Riderwood Dr, Decatur, GA 30033	Burnt Fork Creek	6/9/2005	2 story w/o basement	$ 304,544.63	956.30								$ -	$ -	$ 407,710.90	0.0%
66	1209-059	Acquisition	3636 Bishop Dr, Tucker, GA 30084	Unnamed South Fork Peachtree Tributary	6/9/2005	1 story w/o basement	$ 176,840.70	1010.00								$ -	$ -	$ 198,247.46	0.0%
67	1209-059	Acquisition	2157 Medfield Tr, Atlanta, GA 30345	North Fork Peachtree Creek	6/9/2005	1 story w/o basement	$ 138,773.75	846.90	848.04	1.14	$ 34,027.31	$ 19,341.90	$ 4,907.31	$ 13,276.91	$ 1,728.60	$ 1,601.08	$ 74,883.11	$ 225,491.56	33.2%
68	1209-059	Acquisition	2342 Nesbitt Dr, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	6/9/2005	1 story w/o basement	$ 117,179.68	855.00								$ -	$ -	$ 267,842.16	0.0%
141	PDM-2005-PJ5	Acquisition	3141 Buford Highway, Atlanta, GA 30329	North Fork Peachtree Creek	8/9/2007	2 story w/o basement	$ 911,552.55	833.80											
170	PDM-PJ-04-GA-2006-002	Acquisition	1991 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	10/1/2007	Split level w/o basement	$ 203,531.24	921.60											
174	PDM-PJ-04-GA-2006-002	Acquisition	1946 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	10/16/2007	1 story w/o basement	$ 186,816.61	922.59											
172	PDM-PJ-04-GA-2006-002	Acquisition	1954 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	10/22/2007	Split level w/o basement	$ 232,883.77	923.01											
171	PDM-PJ-04-GA-2006-002	Acquisition	1947 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	10/28/2007	Split level w/o basement	$ 209,034.84	920.97											
173	PDM-PJ-04-GA-2006-002	Acquisition	1955 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	10/28/2007	2 story w/o basement	$ 208,525.25	925.09											
169	PDM-PJ-04-GA-2006-002	Acquisition	1939 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	11/12/2007	1 Story w/o basement	$ 221,061.23	922.03											
166	PDM-PJ-04-GA-2006-002	Acquisition	1915 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	4/18/2008	Split level w/o basement	$ 226,768.66	920.78											
167	PDM-PJ-04-GA-2006-002	Acquisition	1923 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	6/1/2008	Split level w/o basement	$ 274,364.60	920.67											
168	PDM-PJ-04-GA-2006-002	Acquisition	1931 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	6/1/2008	1 Story w/o basement	$ 216,067.22	924.20											
52	PDMC-PJ-04-2005-001	Acquisition	3139 Buford Highway, Atlanta, GA 30329	North Fork Peachtree Creek	7/30/2008	2 story w/o basement	$1,015,515.93	834.20											
53	PDMC-PJ-04-2005-001	Acquisition	3145 Buford Highway, Atlanta, GA 30329	North Fork Peachtree Creek	7/30/2008	2 story w/o basement	$1,015,515.93	832.50											
54	PDMC-PJ-04-2005-001	Acquisition	3143 Buford Highway, Atlanta, GA 30329	North Fork Peachtree Creek	7/30/2008	2 story w/o basement	$1,015,515.93	832.80											
194	PDMC-PJ-04-GA-2007-001	Acquisition	520 Weschester, Decatur, GA 30030	Peavine Creek Tributary	11/18/2008	1 story w/o basement	$ 204,952.38	926.90											
195	PDMC-PJ-04-GA-2007-001	Acquisition	514 Weschester, Decatur, GA 30030	Peavine Creek Tributary	11/18/2008	1 story w/o basement	$ 198,885.84	926.58											
196	PDMC-PJ-04-GA-2007-001	Acquisition	526 Weschester, Decatur, GA 30030	Peavine Creek Tributary	11/18/2008	1 story w/o basement	$ 125,329.10	926.24											
197	PDMC-PJ-04-GA-2007-001	Acquisition	532 Weschester, Decatur, GA 30030	Peavine Creek Tributary	11/18/2008	2 story w/o basement	$ 199,987.27	925.00											
179	FMA-2007-PJ2	Acquisition	3227 Wake Robin Trail, Chamblee, GA 30341	Henderson Mill Creek	11/20/2008	2 story w/o basement	$ 303,309.46	900.21											
22	PDM-2005-PJ2	Acquisition	2148 Drew Valley, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 190,178.97	849.23											
23	PDM-2005-PJ2	Acquisition	2154 Drew Valley, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 158,983.03	848.37											
24	PDM-2005-PJ2	Acquisition	2158 Drew Valley, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 165,764.76	849.67											
25	PDM-2005-PJ2	Acquisition	2166 Drew Valley, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 113,739.23	849.60											
26	PDM-2005-PJ2	Acquisition	2292 Burch Circle NE, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 118,389.56	852.61											
27	PDM-2005-PJ2	Acquisition	2298 Burch Circle, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 211,880.50	853.04											
28	PDM-2005-PJ2	Acquisition	2304 Burch Circle, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 161,889.49	853.05											
29	PDM-2005-PJ2	Acquisition	2310 Burch Circle, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 116,064.40	853.76											
30	PDM-2005-PJ2	Acquisition	2329 Nesbitt Drive, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 114,611.17	854.25											
31	PDM-2005-PJ2	Acquisition	2335 Nesbitt Drive, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 111,317.19	853.76											

Table D.8 (part 3 of 4)

Summary of Losses Avoided and ROI Calculations for DeKalb County, August 2006 Event

No.	Disaster/ Proj No	Project Type	Address	Flooding Source	Mitigation Completion Date	Building Type	BRV (2010$)	FFE (ft, NGVD29)	WSE for Event (ft, NGVD29)	Final Flood Depth (ft)	Building Damage ($)	Contents Damage ($)	Displacement Cost ($)	Disruption Cost ($)	Debris Removal Services ($)	Reduced Insurance Transaction Cost ($)	Total Losses Avoided ($)	Total Project Investment (2010$)	ROI
32	PDM-2005-PJ2	Acquisition	2339 Nesbitt Drive, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 107,248.15	854.64											
33	PDM-2005-PJ2	Acquisition	2361 Bynum Rd, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 122,361.71	860.02											
34	PDM-2005-PJ2	Acquisition	2387 Drew Valley, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 120,908.49	866.39											
35	PDM-2005-PJ2	Acquisition	2406 Drew Valley, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o Basement	$ 149,682.38	875.91											
36	PDM-2005-PJ2	Acquisition	2411 Oostanuala Dr, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 180,103.27	878.26											
160	PDMC-PJ-04-GA-2007-005	Acquisition	2313 Hunting Valley Dr, Decatur, GA 30033	South Fork Peachtree Creek	1/12/2009	1 story w/o basement	$ 123,729.06	898.50											
191	PDMC-PJ-04-GA-2007-006	Acquisition	678 Heathmoor Pl, Decatur, GA 30032	Indian Creek	1/16/2009	1 story w/o basement	$ 146,859.05	883.70											
158	PDMC-PJ-04-GA-2007-005	Acquisition	2331 Hunting Valley Dr, Decatur, GA 30033	South Fork Peachtree Creek	1/29/2009	1 story w/o basement	$ 148,393.34	898.30											
176	FMA-2007-PJ2	Acquisition	2380 Bynum Road, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	1/30/2009	2 story w/o basement	$ 236,450.92	863.00											
181	FMA-2007-PJ2	Acquisition	2151 Medfield Trail NE, Atlanta, GA 30345	North Fork Peachtree Creek	1/30/2009	1 story w/o basement	$ 122,506.04	848.30											
175	FMA-2007-PJ2	Acquisition	2746 Dunnington Circle, Atlanta, GA 30341	Peachtree Branch of Henderson Mill Creek	2/10/2009	2 story w/o basement	$ 273,651.17	891.90											
178	FMA-2007-PJ2	Acquisition	2506 Nancy Lane, Atlanta, GA 30345	North Fork Peachtree Creek	2/10/2009	Split level w/o basement	$ 364,868.23	859.70											
182	FMA-2007-PJ2	Acquisition	3197 Barkside Court, Atlanta, GA 30341	North Fork Peachtree Creek	2/10/2009	2 story w/o basement	$ 192,625.97	892.00											
183	FMA-2007-PJ2	Acquisition	3208 Windsor Forest Road, Chamblee, GA 30341	North Fork Peachtree Creek	2/10/2009	Split level w/o basement	$ 176,319.01	884.20											
73	FMA-PJ-04-GA-2006-005	Acquisition	1986 Royal Ct, Chamblee, GA 30341	Nancy Creek	3/30/2009	2 story w/o basement	$ 252,350.21	925.98											
74	FMA-PJ-04-GA-2006-005	Acquisition	1965 Royal Ct, Atlanta, GA 30341	Nancy Creek	3/30/2009	2 story w/o basement	$ 216,780.65	925.29											
75	FMA-PJ-04-GA-2006-005	Acquisition	1976 Queens Way, Chamblee, GA 30341	Nancy Creek	3/30/2009	1 story w/o basement	$ 237,572.02	922.12											
157	PDMC-PJ-04-GA-2007-005	Acquisition	2337 Hunting Valley Dr, Decatur, GA 30033	South Fork Peachtree Creek	4/20/2009	1 story w/o basement	$ 123,729.06	899.40											
159	PDMC-PJ-04-GA-2007-005	Acquisition	2325 Hunting Valley Dr, Decatur, GA 30033	South Fork Peachtree Creek	6/22/2009	1 story w/o basement	$ 123,729.06	899.50											
55	RFC-PJ-04-GA-2006-001	Acquisition	1977 Queens Way, Chamblee, GA 30341	Nancy Creek	6/30/2009	Split level w/o basement	$ 307,284.28	920.95											
56	RFC-PJ-04-GA-2006-001	Acquisition	1982 Queens Way, Chamblee, GA 30341	Nancy Creek	6/30/2009	2 story w/o basement	$ 206,894.56	924.45											
57	RFC-PJ-04-GA-2006-001	Acquisition	1988 Queens Way, Chamblee, GA 30341	Nancy Creek	6/30/2009	2 story w/o basement	$ 240,527.66	919.84											
58	RFC-PJ-04-GA-2006-001	Acquisition	2003 Royal Court, Chamblee, GA 30341	Nancy Creek	6/30/2009	2 story w/o basement	$ 247,152.36	924.03											
59	RFC-PJ-04-GA-2006-001	Acquisition	2006 Royal Court, Chamblee, GA 30341	Nancy Creek	6/30/2009	1 story w/o basement	$ 224,730.29	922.75											
60	RFC-PJ-04-GA-2006-001	Acquisition	2014 Royal Court, Chamblee, GA 30341	Nancy Creek	6/30/2009	1 story w/o basement	$ 227,380.17	922.23											
177	FMA-2007-PJ2	Acquisition	1748 Dresden Drive , Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	7/10/2009	1 story w/o basement	$ 137,793.81	877.50											
154	PDMC-PJ-04-GA-2007-005	Acquisition	2814 Riderwood Dr, Decatur, GA 30033	Burnt Fork Creek	7/24/2009	1 story w/o basement	$ 171,426.92	960.10											
155	PDMC-PJ-04-GA-2007-005	Acquisition	2820 Riderwood Dr, Decatur, GA 30033	Burnt Fork Creek	7/24/2009	1 story w/o basement	$ 145,437.70	960.10											
161	PDMC-PJ-04-GA-2007-005	Acquisition	2397 Hunting Valley Dr, Decatur, GA 30033	South Fork Peachtree Creek	7/24/2009	1 story w/o basement	$ 146,354.97	899.40											
162	PDMC-PJ-04-GA-2007-005	Acquisition	1031 Scott Circle, Decatur, GA 30033	South Fork Peachtree Creek	7/24/2009	1 story w/o basement	$ 115,575.58	897.50											

Table D.8 (part 4 of 4)

Summary of Losses Avoided and ROI Calculations for DeKalb County, August 2006 Event

No.	Disaster/ Proj No	Project Type	Address	Flooding Source	Mitigation Completion Date	Building Type	BRV (2010$)	FFE (ft, NGVD29)	WSE for Event (ft, NGVD29)	Final Flood Depth (ft)	Building Damage ($)	Contents Damage ($)	Displacement Cost ($)	Disruption Cost ($)	Debris Removal Services ($)	Reduced Insurance Transaction Cost ($)	Total Losses Avoided ($)	Total Project Investment (2010$)	ROI
165	PDMC-PJ-04-GA-2007-005	Acquisition	999 Scott Circle, Decatur, GA 30033	South Fork Peachtree Creek	7/24/2009	1 story w/o basement	$ 199,658.34	899.50											
163	PDMC-PJ-04-GA-2007-005	Acquisition	1023 Scott Circle, Decatur, GA 30033	South Fork Peachtree Creek	7/27/2009	1 story w/o basement	$ 115,575.58	898.60											
164	PDMC-PJ-04-GA-2007-005	Acquisition	1005 Scott Circle, Decatur, GA 30033	South Fork Peachtree Creek	8/14/2009	1 story w/o basement	$ 130,965.27	899.60											
76	RFC-PJ-04-GA-001	Acquisition	631 Densley Dr, Decatur, GA 30033	South Fork Peachtree Creek Tributary	9/30/2009	2 story w/o basement	$ 296,371.05	883.60											
78	RFC-2007	Acquisition	2056 Desmond Dr, Decatur, GA 30033	South Fork Peachtree Creek Tributary	9/30/2009	1 story w/o basement	$ 186,435.85	881.50											
										TOTAL	$ 174,387.69	$ 99,486.69	$ 30,373.99	$ 50,207.16	$ 9,784.72	$ 7,376.08	$ 371,616.33	$ 7,619,520.37	4.88%

BRV = building replacement value
FFE = first floor elevation
ft = feet
NGVD29 = National Geodetic Vertical Datum of 1929
ROI = Return on Investment
WSE = water surface elevation

Indicates property was not mitigated at time of the storm event.

Table D.9 (part 1 of 4)

Summary of Losses Avoided and ROI Calculations for DeKalb County, December 2007 Event

No.	Disaster/ Proj No	Project Type	Address	Flooding Source	Mitigation Completion Date	Building Type	BRV (2010$)	FFE (ft, NGVD29)	WSE for Event (ft, NGVD29)	Final Flood Depth (ft)	Building Damage ($)	Contents Damage ($)	Displacement Cost ($)	Disruption Cost ($)	Debris Removal Services ($)	Reduced Insurance Transaction Cost ($)	Total Losses Avoided ($)	Total Project Investment (2010$)	ROI
148	1209-0017	Acquisition	2000 McJenkins Dr, Decatur, GA 30032	North Fork Peachtree Creek	5/13/2002	2 story w/o basement	$ 299,215.00	850.00	850.20	0.20	$ 31,440.91	$ 17,227.11	$ 1,526.42	$ 6,974.79	$ 1,298.33	$ 1,400.00	$ 59,867.56	$ 267,445.57	22.4%
142	1071-004	Acquisition	2023 Audubon Dr, Atlanta, GA 30329	Unnamed North Fork Peachtree Creek Tributary	7/18/2002	1 story w/o basement	$ 146,700.84	864.60								$ -	$ -	$ 167,878.71	0.0%
143	1071-004	Acquisition	2263 Melinda Dr, Atlanta, GA 30345	North Fork Peachtree Creek	7/18/2002	2 story w/o basement	$ 197,165.69	858.80	855.82	-2.98	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 164,078.39	0.0%
144	1071-004	Acquisition	1989 Queens Way, Chamblee, GA 30341	Nancy Creek	7/18/2002	1 story w/o basement	$ 239,883.91	924.00	920.60	-3.40	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 228,683.67	0.0%
145	1071-004	Acquisition	3164 Bobbie Lane, Decatur, GA 30032	Cobbs Creek	7/18/2002	2 story w/o basement	$ 160,981.79	931.10								$ -	$ -	$ 99,470.59	0.0%
146	1071-004	Acquisition	649 Cheviot Dr, Decatur, GA 30032	Indian Creek	7/18/2002	2 story w/o basement	$ 196,952.48	882.20								$ -	$ -	$ 102,006.66	0.0%
147	1071-004	Acquisition	665 Cheviot Dr, Decatur, GA 30032	Indian Creek	7/18/2002	2 story w/o basement	$ 228,000.80	881.80								$ -	$ -	$ 114,674.36	0.0%
2	1209-0042	Acquisition	6251 Cathedral Lane, Lithonia, GA 30030	Stephenson Creek	5/22/2003	2 story w/o basement	$ 225,157.59	686.50								$ -	$ -	$ 168,801.42	0.0%
1	1209-0042	Acquisition	3230 Barkside Court, Chamblee, GA 30030	North Fork Peachtree Creek	5/23/2003	2 story w/o basement	$ 250,382.70	884.30	887.98	3.68	$ 74,585.89	$ 43,947.70	$ 20,626.08	$ 15,646.59	$ 4,934.04	$ 3,000.00	$ 162,740.30	$ 321,384.49	50.6%
6	1209-0042	Acquisition	2293 Hunting Valley, Decatur, GA 30030	South Fork Peachtree Creek	6/10/2003	2 story w/o basement	$ 145,351.00	895.50								$ -	$ -	$ 358,591.86	0.0%
4	1209-0042	Acquisition	671 Cheviot Drive, Decatur, GA 30030	Indian Creek	6/12/2003	2 story w/o basement	$ 297,752.40	880.10								$ -	$ -	$ 170,384.27	0.0%
5	1209-0042	Acquisition	2441 Green Forrest, Decatur, GA 30030	Shoal Creek	7/24/2003	2 story w/o basement	$ 104,220.55	822.40								$ -	$ -	$ 185,687.59	0.0%
7	1209-0042	Acquisition	2133 Medfield Trail NE, Atlanta, GA 30345	North Fork Peachtree Creek	4/16/2004	2 story w/o basement	$ 156,423.83	847.00	847.39	0.39	$ 18,158.13	$ 10,085.54	$ 1,785.34	$ 7,469.74	$ 867.27	$ 1,175.00	$ 39,541.02	$ 274,289.34	14.4%
11	1209-0042	Acquisition	683 Cheviot Drive, Decatur, GA 30032	Indian Creek	5/14/2004	2 story w/o basement	$ 162,080.80	881.90								$ -	$ -	$ 189,510.43	0.0%
10	1209-0042	Acquisition	677 Cheviot Drive, Decatur, GA 30032	Indian Creek	5/19/2004	2 story w/o basement	$ 239,024.73	880.00								$ -	$ -	$ 179,002.77	0.0%
12	1209-0042	Acquisition	687 Cheviot Drive, Decatur, GA 30032	Indian Creek	6/1/2004	2 story w/o basement	$ 183,932.77	881.90								$ -	$ -	$ 191,830.47	0.0%
13	1209-0042	Acquisition	686 Heathmoor Pl, Decatur, GA 30032	Indian Creek	6/16/2004	1 story w/o basement	$ 109,259.83	879.60								$ -	$ -	$ 172,792.50	0.0%
3	1209-0042	Acquisition	657 Cheviot Drive, Decatur, GA 30032	Indian Creek	8/11/2004	2 story w/o basement	$ 250,299.27	880.10								$ -	$ -	$ 188,799.97	0.0%
201	1209-0042	Acquisition	2333 Poplar Springs Dr NE, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	11/18/2004	2 story w/o basement	$ 182,922.31	852.54								$ -	$ -	$ 337,384.25	0.0%
9	1209-0042	Acquisition	643 Cheviot Drive, Decatur, GA 30032	Indian Creek	12/3/2004	2 story w/o basement	$ 265,262.60	880.00								$ -	$ -	$ 206,030.14	0.0%
14	1209-0042	Acquisition	694 Heathmoor Pl, Decatur, GA 30032	Indian Creek	3/31/2005	1 story w/o basement	$ 140,312.02	880.50								$ -	$ -	$ 188,750.69	0.0%
15	1209-0042	Acquisition	621 Densley Drive, Decatur, GA 30033	South Fork Peachtree Creek Tributary	3/31/2005	2 story w/o basement	$ 161,651.37	884.60								$ -	$ -	$ 346,621.79	0.0%
16	1209-0042	Acquisition	3743 Kingswood Dr, Decatur, GA 30032	Indian Creek	3/31/2005	2 story w/o basement	$ 227,159.82	883.20								$ -	$ -	$ 163,013.64	0.0%
17	1209-0042	Acquisition	2402 Drew Valley, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	3/31/2005	1 story w/o basement	$ 86,600.34	875.91								$ -	$ -	$ 228,933.44	0.0%
18	1209-0042	Acquisition	2396 Drew Valley, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	3/31/2005	1 story w/o basement	$ 168,795.58	875.09								$ -	$ -	$ 350,475.22	0.0%
19	1209-0042	Acquisition	2390 Drew Valley, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	3/31/2005	1 story w/o basement	$ 139,201.29	874.48								$ -	$ -	$ 330,419.77	0.0%
20	1209-0042	Acquisition	2319 Poplar Springs Dr NE, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	3/31/2005	2 story w/o basement	$ 186,834.25	850.30								$ -	$ -	$ 279,257.53	0.0%
21	1209-0042	Acquisition	2327 Poplar Springs Dr NE, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	3/31/2005	2 story w/o basement	$ 178,540.94	851.23								$ -	$ -	$ 274,385.10	0.0%
126	1209-0042	Acquisition	2301 Poplar Springs, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	3/31/2005	2 story w/o basement	$ 238,463.54	851.20								$ -	$ -	$ 269,643.67	0.0%

Table D.9 (part 2 of 4)

Summary of Losses Avoided and ROI Calculations for DeKalb County, December 2007 Event

No.	Disaster/ Proj No	Project Type	Address	Flooding Source	Mitigation Completion Date	Building Type	BRV (2010$)	FFE (ft, NGVD29)	WSE for Event (ft, NGVD29)	Final Flood Depth (ft)	Building Damage ($)	Contents Damage ($)	Displacement Cost ($)	Disruption Cost ($)	Debris Removal Services ($)	Reduced Insurance Transaction Cost ($)	Total Losses Avoided ($)	Total Project Investment (2010$)	ROI
65	1209-059	Acquisition	2813 Riderwood Dr, Decatur, GA 30033	Burnt Fork Creek	6/9/2005	2 story w/o basement	$ 304,544.63	956.30								$ -	$ -	$ 407,710.90	0.0%
66	1209-059	Acquisition	3636 Bishop Dr, Tucker, GA 30084	Unnamed South Fork Peachtree Tributary	6/9/2005	1 story w/o basement	$ 176,840.70	1010.00								$ -	$ -	$ 198,247.46	0.0%
67	1209-059	Acquisition	2157 Medfield Tr, Atlanta, GA 30345	North Fork Peachtree Creek	6/9/2005	1 story w/o basement	$ 138,773.75	846.90	847.96	1.06	$ 33,050.13	$ 18,831.10	$ 4,562.46	$ 12,960.21	$ 1,679.13	$ 1,600.00	$ 72,683.04	$ 225,491.56	32.2%
68	1209-059	Acquisition	2342 Nesbitt Dr, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	6/9/2005	1 story w/o basement	$ 117,179.68	855.00								$ -	$ -	$ 267,842.16	0.0%
141	PDM-2005-PJ5	Acquisition	3141 Buford Highway, Atlanta, GA 30329	North Fork Peachtree Creek	8/9/2007	2 story w/o basement	$ 911,552.55	833.80	828.91	-4.89	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,547,534.18	0.0%
170	PDM-PJ-04-GA-2006-002	Acquisition	1991 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	10/1/2007	Split level w/o basement	$ 203,531.24	921.60	920.66	-0.94	$ 13,116.50	$ 4,556.87	$ -	$ 5,147.26	$ 440.60	$ 1,025.00	$ 24,286.22	$ 331,588.01	7.3%
174	PDM-PJ-04-GA-2006-002	Acquisition	1946 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	10/16/2007	1 story w/o basement	$ 186,816.61	922.59	920.90	-1.69	$ 1,451.36	$ 1,393.31	$ -	$ 2,598.21	$ 51.10	$ 600.00	$ 6,093.99	$ 329,402.55	1.9%
172	PDM-PJ-04-GA-2006-002	Acquisition	1954 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	10/22/2007	Split level w/o basement	$ 232,883.77	923.01	920.83	-2.18	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 343,608.01	0.0%
171	PDM-PJ-04-GA-2006-002	Acquisition	1947 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	10/28/2007	Split level w/o basement	$ 209,034.84	920.97	920.93	-0.04	$ 14,986.16	$ 6,005.70	$ -	$ 5,473.23	$ 506.15	$ -	$ 26,971.23	$ 333,773.46	8.1%
173	PDM-PJ-04-GA-2006-002	Acquisition	1955 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	10/28/2007	2 story w/o basement	$ 208,525.25	925.09	920.88	-4.21	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 334,866.19	0.0%
169	PDM-PJ-04-GA-2006-002	Acquisition	1939 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	11/12/2007	1 Story w/o basement	$ 221,061.23	922.03	920.99	-1.04	$ 5,293.27	$ 5,081.54	$ -	$ 3,325.74	$ 186.45	$ -	$ 13,887.01	$ 340,329.82	4.1%
166	PDM-PJ-04-GA-2006-002	Acquisition	1915 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	4/18/2008	Split level w/o basement	$ 226,768.66	920.78											
167	PDM-PJ-04-GA-2006-002	Acquisition	1923 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	6/1/2008	Split level w/o basement	$ 274,364.60	920.67											
168	PDM-PJ-04-GA-2006-002	Acquisition	1931 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	6/1/2008	1 Story w/o basement	$ 216,067.22	924.20											
52	PDMC-PJ-04-2005-001	Acquisition	3139 Buford Highway, Atlanta, GA 30329	North Fork Peachtree Creek	7/30/2008	2 story w/o basement	$1,015,515.93	834.20											
53	PDMC-PJ-04-2005-001	Acquisition	3145 Buford Highway, Atlanta, GA 30329	North Fork Peachtree Creek	7/30/2008	2 story w/o basement	$1,015,515.93	832.50											
54	PDMC-PJ-04-2005-001	Acquisition	3143 Buford Highway, Atlanta, GA 30329	North Fork Peachtree Creek	7/30/2008	2 story w/o basement	$1,015,515.93	832.80											
194	PDMC-PJ-04-GA-2007-001	Acquisition	520 Weschester, Decatur, GA 30030	Peavine Creek Tributary	11/18/2008	1 story w/o basement	$ 204,952.38	926.90											
195	PDMC-PJ-04-GA-2007-001	Acquisition	514 Weschester, Decatur, GA 30030	Peavine Creek Tributary	11/18/2008	1 story w/o basement	$ 198,885.84	926.58											
196	PDMC-PJ-04-GA-2007-001	Acquisition	526 Weschester, Decatur, GA 30030	Peavine Creek Tributary	11/18/2008	1 story w/o basement	$ 125,329.10	926.24											
197	PDMC-PJ-04-GA-2007-001	Acquisition	532 Weschester, Decatur, GA 30030	Peavine Creek Tributary	11/18/2008	2 story w/o basement	$ 199,987.27	925.00											
179	FMA-2007-PJ2	Acquisition	3227 Wake Robin Trail, Chamblee, GA 30341	Henderson Mill Creek	11/20/2008	2 story w/o basement	$ 303,309.46	900.21											
22	PDM-2005-PJ2	Acquisition	2148 Drew Valley, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 190,178.97	849.23											
23	PDM-2005-PJ2	Acquisition	2154 Drew Valley, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 158,983.03	848.37											
24	PDM-2005-PJ2	Acquisition	2158 Drew Valley, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 165,764.76	849.67											
25	PDM-2005-PJ2	Acquisition	2166 Drew Valley, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 113,739.23	849.60											
26	PDM-2005-PJ2	Acquisition	2292 Burch Circle NE, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 118,389.56	852.61											
27	PDM-2005-PJ2	Acquisition	2298 Burch Circle, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 211,880.50	853.04											
28	PDM-2005-PJ2	Acquisition	2304 Burch Circle, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 161,889.49	853.05											
29	PDM-2005-PJ2	Acquisition	2310 Burch Circle, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 116,064.40	853.76											
30	PDM-2005-PJ2	Acquisition	2329 Nesbitt Drive, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 114,611.17	854.25											
31	PDM-2005-PJ2	Acquisition	2335 Nesbitt Drive, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 111,317.19	853.76											

Table D.9 (part 3 of 4)

Summary of Losses Avoided and ROI Calculations for DeKalb County, December 2007 Event

No.	Disaster/ Proj No	Project Type	Address	Flooding Source	Mitigation Completion Date	Building Type	BRV (2010$)	FFE (ft, NGVD29)	WSE for Event (ft, NGVD29)	Final Flood Depth (ft)	Building Damage ($)	Contents Damage ($)	Displacement Cost ($)	Disruption Cost ($)	Debris Removal Services ($)	Reduced Insurance Transaction Cost ($)	Total Losses Avoided ($)	Total Project Investment (2010$)	ROI
32	PDM-2005-PJ2	Acquisition	2339 Nesbitt Drive, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 107,248.15	854.64											
33	PDM-2005-PJ2	Acquisition	2361 Bynum Rd, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 122,361.71	860.02											
34	PDM-2005-PJ2	Acquisition	2387 Drew Valley, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 120,908.49	866.39											
35	PDM-2005-PJ2	Acquisition	2406 Drew Valley, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o Basement	$ 149,682.38	875.91											
36	PDM-2005-PJ2	Acquisition	2411 Oostanuala Dr, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 180,103.27	878.26											
160	PDMC-PJ-04-GA-2007-005	Acquisition	2313 Hunting Valley Dr, Decatur, GA 30033	South Fork Peachtree Creek	1/12/2009	1 story w/o basement	$ 123,729.06	898.50											
191	PDMC-PJ-04-GA-2007-006	Acquisition	678 Heathmoor Pl, Decatur, GA 30032	Indian Creek	1/16/2009	1 story w/o basement	$ 146,859.05	883.70											
158	PDMC-PJ-04-GA-2007-005	Acquisition	2331 Hunting Valley Dr, Decatur, GA 30033	South Fork Peachtree Creek	1/29/2009	1 story w/o basement	$ 148,393.34	898.30											
176	FMA-2007-PJ2	Acquisition	2380 Bynum Road, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	1/30/2009	2 story w/o basement	$ 236,450.92	863.00											
181	FMA-2007-PJ2	Acquisition	2151 Medfield Trail NE, Atlanta, GA 30345	North Fork Peachtree Creek	1/30/2009	1 story w/o basement	$ 122,506.04	848.30											
175	FMA-2007-PJ2	Acquisition	2746 Dunnington Circle, Atlanta, GA 30341	Peachtree Branch of Henderson Mill Creek	2/10/2009	2 story w/o basement	$ 273,651.17	891.90											
178	FMA-2007-PJ2	Acquisition	2506 Nancy Lane, Atlanta, GA 30345	North Fork Peachtree Creek	2/10/2009	Split level w/o basement	$ 364,868.23	859.70											
182	FMA-2007-PJ2	Acquisition	3197 Barkside Court, Atlanta, GA 30341	North Fork Peachtree Creek	2/10/2009	2 story w/o basement	$ 192,625.97	892.00											
183	FMA-2007-PJ2	Acquisition	3208 Windsor Forest Road, Chamblee, GA 30341	North Fork Peachtree Creek	2/10/2009	Split level w/o basement	$ 176,319.01	884.20											
73	FMA-PJ-04-GA-2006-005	Acquisition	1986 Royal Ct, Chamblee, GA 30341	Nancy Creek	3/30/2009	2 story w/o basement	$ 252,350.21	925.98											
74	FMA-PJ-04-GA-2006-005	Acquisition	1965 Royal Ct, Atlanta, GA 30341	Nancy Creek	3/30/2009	2 story w/o basement	$ 216,780.65	925.29											
75	FMA-PJ-04-GA-2006-005	Acquisition	1976 Queens Way, Chamblee, GA 30341	Nancy Creek	3/30/2009	1 story w/o basement	$ 237,572.02	922.12											
157	PDMC-PJ-04-GA-2007-005	Acquisition	2337 Hunting Valley Dr, Decatur, GA 30033	South Fork Peachtree Creek	4/20/2009	1 story w/o basement	$ 123,729.06	899.40											
159	PDMC-PJ-04-GA-2007-005	Acquisition	2325 Hunting Valley Dr, Decatur, GA 30033	South Fork Peachtree Creek	6/22/2009	1 story w/o basement	$ 123,729.06	899.50											
55	RFC-PJ-04-GA-2006-001	Acquisition	1977 Queens Way, Chamblee, GA 30341	Nancy Creek	6/30/2009	Split level w/o basement	$ 307,284.28	920.95											
56	RFC-PJ-04-GA-2006-001	Acquisition	1982 Queens Way, Chamblee, GA 30341	Nancy Creek	6/30/2009	2 story w/o basement	$ 206,894.56	924.45											
57	RFC-PJ-04-GA-2006-001	Acquisition	1988 Queens Way, Chamblee, GA 30341	Nancy Creek	6/30/2009	2 story w/o basement	$ 240,527.66	919.84											
58	RFC-PJ-04-GA-2006-001	Acquisition	2003 Royal Court, Chamblee, GA 30341	Nancy Creek	6/30/2009	2 story w/o basement	$ 247,152.36	924.03											
59	RFC-PJ-04-GA-2006-001	Acquisition	2006 Royal Court, Chamblee, GA 30341	Nancy Creek	6/30/2009	1 story w/o basement	$ 224,730.29	922.75											
60	RFC-PJ-04-GA-2006-001	Acquisition	2014 Royal Court, Chamblee, GA 30341	Nancy Creek	6/30/2009	1 story w/o basement	$ 227,380.17	922.23											
177	FMA-2007-PJ2	Acquisition	1748 Dresden Drive , Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	7/10/2009	1 story w/o basement	$ 137,793.81	877.50											
154	PDMC-PJ-04-GA-2007-005	Acquisition	2814 Riderwood Dr, Decatur, GA 30033	Burnt Fork Creek	7/24/2009	1 story w/o basement	$ 171,426.92	960.10											
155	PDMC-PJ-04-GA-2007-005	Acquisition	2820 Riderwood Dr, Decatur, GA 30033	Burnt Fork Creek	7/24/2009	1 story w/o basement	$ 145,437.70	960.10											
161	PDMC-PJ-04-GA-2007-005	Acquisition	2397 Hunting Valley Dr, Decatur, GA 30033	South Fork Peachtree Creek	7/24/2009	1 story w/o basement	$ 146,354.97	899.40											
162	PDMC-PJ-04-GA-2007-005	Acquisition	1031 Scott Circle, Decatur, GA 30033	South Fork Peachtree Creek	7/24/2009	1 story w/o basement	$ 115,575.58	897.50											

Table D.9 (part 4 of 4)

Summary of Losses Avoided and ROI Calculations for DeKalb County, December 2007 Event

No.	Disaster/ Proj No	Project Type	Address	Flooding Source	Mitigation Completion Date	Building Type	BRV (2010$)	FFE (ft, NGVD29)	WSE for Event (ft, NGVD29)	Final Flood Depth (ft)	Building Damage ($)	Contents Damage ($)	Displacement Cost ($)	Disruption Cost ($)	Debris Removal Services ($)	Reduced Insurance Transaction Cost ($)	Total Losses Avoided ($)	Total Project Investment (2010$)	ROI
165	PDMC-PJ-04-GA-2007-005	Acquisition	999 Scott Circle, Decatur, GA 30033	South Fork Peachtree Creek	7/24/2009	1 story w/o basement	$ 199,658.34	899.50											
163	PDMC-PJ-04-GA-2007-005	Acquisition	1023 Scott Circle, Decatur, GA 30033	South Fork Peachtree Creek	7/27/2009	1 story w/o basement	$ 115,575.58	898.60											
164	PDMC-PJ-04-GA-2007-005	Acquisition	1005 Scott Circle, Decatur, GA 30033	South Fork Peachtree Creek	8/14/2009	1 story w/o basement	$ 130,965.27	899.60											
76	RFC-PJ-04-GA-001	Acquisition	631 Densley Dr, Decatur, GA 30033	South Fork Peachtree Creek Tributary	9/30/2009	2 story w/o basement	$ 296,371.05	883.60											
78	RFC-2007	Acquisition	2056 Desmond Dr, Decatur, GA 30033	South Fork Peachtree Creek Tributary	9/30/2009	1 story w/o basement	$ 186,435.85	881.50											
										TOTAL	$ 192,082.36	$ 107,128.87	$ 28,500.29	$ 59,595.78	$ 9,963.07	$ 8,800.00	$ 406,070.37	##########	3.63%

BRV = building replacement value
FFE = first floor elevation
ft = feet
NGVD29 = National Geodetic Vertical Datum of 1929
ROI = Return on Investment
WSE = water surface elevation

Indicates property was not mitigated at time of the storm event.

Table D.10 (part 1 of 4)

Summary of Losses Avoided and ROI Calculations for DeKalb County, July 2008 Event

No.	Disaster/ Proj No	Project Type	Address	Flooding Source	Mitigation Completion Date	Building Type	BRV (2010$)	FFE (ft, NGVD29)	WSE for Event (ft, NGVD29)	Final Flood Depth (ft)	Building Damage ($)	Contents Damage ($)	Displacement Cost ($)	Disruption Cost ($)	Debris Removal Services ($)	Reduced Insurance Transaction Cost ($)	Total Losses Avoided ($)	Total Project Investment (2010$)	ROI
148	1209-0017	Acquisition	2000 McJenkins Dr, Decatur, GA 30032	North Fork Peachtree Creek	5/13/2002	2 story w/o basement	$ 299,215.00	850.00								$ -	$ -	$ 267,445.57	0.0%
142	1071-004	Acquisition	2023 Audubon Dr, Atlanta, GA 30329	Unnamed North Fork Peachtree Creek Tributary	7/18/2002	1 story w/o basement	$ 146,700.84	864.60								$ -	$ -	$ 167,878.71	0.0%
143	1071-004	Acquisition	2263 Melinda Dr, Atlanta, GA 30345	North Fork Peachtree Creek	7/18/2002	2 story w/o basement	$ 197,165.69	858.80								$ -	$ -	$ 164,078.39	0.0%
144	1071-004	Acquisition	1989 Queens Way, Chamblee, GA 30341	Nancy Creek	7/18/2002	1 story w/o basement	$ 239,883.91	924.00								$ -	$ -	$ 228,683.67	0.0%
145	1071-004	Acquisition	3164 Bobbie Lane, Decatur, GA 30032	Cobbs Creek	7/18/2002	2 story w/o basement	$ 160,981.79	931.10								$ -	$ -	$ 99,470.59	0.0%
146	1071-004	Acquisition	649 Cheviot Dr, Decatur, GA 30032	Indian Creek	7/18/2002	2 story w/o basement	$ 196,952.48	882.20								$ -	$ -	$ 102,006.66	0.0%
147	1071-004	Acquisition	665 Cheviot Dr, Decatur, GA 30032	Indian Creek	7/18/2002	2 story w/o basement	$ 228,000.80	881.80								$ -	$ -	$ 114,674.36	0.0%
2	1209-0042	Acquisition	6251 Cathedral Lane, Lithonia, GA 30030	Stephenson Creek	5/22/2003	2 story w/o basement	$ 225,157.59	686.50								$ -	$ -	$ 168,801.42	0.0%
1	1209-0042	Acquisition	3230 Barkside Court, Chamblee, GA 30030	North Fork Peachtree Creek	5/23/2003	2 story w/o basement	$ 250,382.70	884.30								$ -	$ -	$ 321,384.49	0.0%
6	1209-0042	Acquisition	2293 Hunting Valley, Decatur, GA 30030	South Fork Peachtree Creek	6/10/2003	2 story w/o basement	$ 145,351.00	895.50	893.85	-1.65	$ 1,506.12	$ 502.04	$ -	$ 2,714.84	$ 91.32	$ -	$ 4,814.31	$ 358,591.86	1.3%
4	1209-0042	Acquisition	671 Cheviot Drive, Decatur, GA 30030	Indian Creek	6/12/2003	2 story w/o basement	$ 297,752.40	880.10								$ -	$ -	$ 170,384.27	0.0%
5	1209-0042	Acquisition	2441 Green Forrest, Decatur, GA 30030	Shoal Creek	7/24/2003	2 story w/o basement	$ 104,220.55	822.40								$ -	$ -	$ 185,687.59	0.0%
7	1209-0042	Acquisition	2133 Medfield Trail NE, Atlanta, GA 30345	North Fork Peachtree Creek	4/16/2004	2 story w/o basement	$ 156,423.83	847.00								$ -	$ -	$ 274,289.34	0.0%
11	1209-0042	Acquisition	683 Cheviot Drive, Decatur, GA 30032	Indian Creek	5/14/2004	2 story w/o basement	$ 162,080.80	881.90								$ -	$ -	$ 189,510.43	0.0%
10	1209-0042	Acquisition	677 Cheviot Drive, Decatur, GA 30032	Indian Creek	5/19/2004	2 story w/o basement	$ 239,024.73	880.00								$ -	$ -	$ 179,002.77	0.0%
12	1209-0042	Acquisition	687 Cheviot Drive, Decatur, GA 30032	Indian Creek	6/1/2004	2 story w/o basement	$ 183,932.77	881.90								$ -	$ -	$ 191,830.47	0.0%
13	1209-0042	Acquisition	686 Heathmoor Pl, Decatur, GA 30032	Indian Creek	6/16/2004	1 story w/o basement	$ 109,259.83	879.60								$ -	$ -	$ 172,792.50	0.0%
3	1209-0042	Acquisition	657 Cheviot Drive, Decatur, GA 30032	Indian Creek	8/11/2004	2 story w/o basement	$ 250,299.27	880.10								$ -	$ -	$ 188,799.97	0.0%
201	1209-0042	Acquisition	2333 Poplar Springs Dr NE, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	11/18/2004	2 story w/o basement	$ 182,922.31	852.54								$ -	$ -	$ 337,384.25	0.0%
9	1209-0042	Acquisition	643 Cheviot Drive, Decatur, GA 30032	Indian Creek	12/3/2004	2 story w/o basement	$ 265,262.60	880.00								$ -	$ -	$ 206,030.14	0.0%
14	1209-0042	Acquisition	694 Heathmoor Pl, Decatur, GA 30032	Indian Creek	3/31/2005	1 story w/o basement	$ 140,312.02	880.50								$ -	$ -	$ 188,750.69	0.0%
15	1209-0042	Acquisition	621 Densley Drive, Decatur, GA 30033	South Fork Peachtree Creek Tributary	3/31/2005	2 story w/o basement	$ 161,651.37	884.60								$ -	$ -	$ 346,621.79	0.0%
16	1209-0042	Acquisition	3743 Kingswood Dr, Decatur, GA 30032	Indian Creek	3/31/2005	2 story w/o basement	$ 227,159.82	883.20								$ -	$ -	$ 163,013.64	0.0%
17	1209-0042	Acquisition	2402 Drew Valley, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	3/31/2005	1 story w/o basement	$ 86,600.34	875.91								$ -	$ -	$ 228,933.44	0.0%
18	1209-0042	Acquisition	2396 Drew Valley, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	3/31/2005	1 story w/o basement	$ 168,795.58	875.09								$ -	$ -	$ 350,475.22	0.0%
19	1209-0042	Acquisition	2390 Drew Valley, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	3/31/2005	1 story w/o basement	$ 139,201.29	874.48								$ -	$ -	$ 330,419.77	0.0%
20	1209-0042	Acquisition	2319 Poplar Springs Dr NE, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	3/31/2005	2 story w/o basement	$ 186,834.25	850.30								$ -	$ -	$ 279,257.53	0.0%
21	1209-0042	Acquisition	2327 Poplar Springs Dr NE, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	3/31/2005	2 story w/o basement	$ 178,540.94	851.23								$ -	$ -	$ 274,385.10	0.0%
126	1209-0042	Acquisition	2301 Poplar Springs, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	3/31/2005	2 story w/o basement	$ 238,463.54	851.20								$ -	$ -	$ 269,643.67	0.0%

Table D.10 (part 2 of 4)

Summary of Losses Avoided and ROI Calculations for DeKalb County, July 2008 Event

No.	Disaster/ Proj No	Project Type	Address	Flooding Source	Mitigation Completion Date	Building Type	BRV (2010$)	FFE (ft, NGVD29)	WSE for Event (ft, NGVD29)	Final Flood Depth (ft)	Building Damage ($)	Contents Damage ($)	Displacement Cost ($)	Disruption Cost ($)	Debris Removal Services ($)	Reduced Insurance Transaction Cost ($)	Total Losses Avoided ($)	Total Project Investment (2010$)	ROI
65	1209-059	Acquisition	2813 Riderwood Dr, Decatur, GA 30033	Burnt Fork Creek	6/9/2005	2 story w/o basement	$ 304,544.63	956.30								$ -	$ -	$ 407,710.90	0.0%
66	1209-059	Acquisition	3636 Bishop Dr, Tucker, GA 30084	Unnamed South Fork Peachtree Tributary	6/9/2005	1 story w/o basement	$ 176,840.70	1010.00								$ -	$ -	$ 198,247.46	0.0%
67	1209-059	Acquisition	2157 Medfield Tr, Atlanta, GA 30345	North Fork Peachtree Creek	6/9/2005	1 story w/o basement	$ 138,773.75	846.90								$ -	$ -	$ 225,491.56	0.0%
68	1209-059	Acquisition	2342 Nesbitt Dr, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	6/9/2005	1 story w/o basement	$ 117,179.68	855.00								$ -	$ -	$ 267,842.16	0.0%
141	PDM-2005-PJ5	Acquisition	3141 Buford Highway, Atlanta, GA 30329	North Fork Peachtree Creek	8/9/2007	2 story w/o basement	$ 911,552.55	833.80								$ -	$ -	$ 1,547,534.18	0.0%
170	PDM-PJ-04-GA-2006-002	Acquisition	1991 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	10/1/2007	Split level w/o basement	$ 203,531.24	921.60								$ -	$ -	$ 331,588.01	0.0%
174	PDM-PJ-04-GA-2006-002	Acquisition	1946 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	10/16/2007	1 story w/o basement	$ 186,816.61	922.59								$ -	$ -	$ 329,402.55	0.0%
172	PDM-PJ-04-GA-2006-002	Acquisition	1954 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	10/22/2007	Split level w/o basement	$ 232,883.77	923.01								$ -	$ -	$ 343,608.01	0.0%
171	PDM-PJ-04-GA-2006-002	Acquisition	1947 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	10/28/2007	Split level w/o basement	$ 209,034.84	920.97								$ -	$ -	$ 333,773.46	0.0%
173	PDM-PJ-04-GA-2006-002	Acquisition	1955 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	10/28/2007	2 story w/o basement	$ 208,525.25	925.09								$ -	$ -	$ 334,866.19	0.0%
169	PDM-PJ-04-GA-2006-002	Acquisition	1939 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	11/12/2007	1 Story w/o basement	$ 221,061.23	922.03								$ -	$ -	$ 340,329.82	0.0%
166	PDM-PJ-04-GA-2006-002	Acquisition	1915 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	4/18/2008	Split level w/o basement	$ 226,768.66	920.78								$ -	$ -	$ 333,600.01	0.0%
167	PDM-PJ-04-GA-2006-002	Acquisition	1923 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	6/1/2008	Split level w/o basement	$ 274,364.60	920.67								$ -	$ -	$ 353,120.57	0.0%
168	PDM-PJ-04-GA-2006-002	Acquisition	1931 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	6/1/2008	1 Story w/o basement	$ 216,067.22	924.20								$ -	$ -	$ 330,417.31	0.0%
52	PDMC-PJ-04-2005-001	Acquisition	3139 Buford Highway, Atlanta, GA 30329	North Fork Peachtree Creek	7/30/2008	2 story w/o basement	$1,015,515.93	834.20								$ -	$ -	$ 1,333,039.95	0.0%
53	PDMC-PJ-04-2005-001	Acquisition	3145 Buford Highway, Atlanta, GA 30329	North Fork Peachtree Creek	7/30/2008	2 story w/o basement	$1,015,515.93	832.50								$ -	$ -	$ 1,333,039.95	0.0%
54	PDMC-PJ-04-2005-001	Acquisition	3143 Buford Highway, Atlanta, GA 30329	North Fork Peachtree Creek	7/30/2008	2 story w/o basement	$1,015,515.93	832.80								$ -	$ -	$ 1,333,039.95	0.0%
194	PDMC-PJ-04-GA-2007-001	Acquisition	520 Weschester, Decatur, GA 30030	Peavine Creek Tributary	11/18/2008	1 story w/o basement	$ 204,952.38	926.90											
195	PDMC-PJ-04-GA-2007-001	Acquisition	514 Weschester, Decatur, GA 30030	Peavine Creek Tributary	11/18/2008	1 story w/o basement	$ 198,885.84	926.58											
196	PDMC-PJ-04-GA-2007-001	Acquisition	526 Weschester, Decatur, GA 30030	Peavine Creek Tributary	11/18/2008	1 story w/o basement	$ 125,329.10	926.24											
197	PDMC-PJ-04-GA-2007-001	Acquisition	532 Weschester, Decatur, GA 30030	Peavine Creek Tributary	11/18/2008	2 story w/o basement	$ 199,987.27	925.00											
179	FMA-2007-PJ2	Acquisition	3227 Wake Robin Trail, Chamblee, GA 30341	Henderson Mill Creek	11/20/2008	2 story w/o basement	$ 303,309.46	900.21											
22	PDM-2005-PJ2	Acquisition	2148 Drew Valley, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 190,178.97	849.23											
23	PDM-2005-PJ2	Acquisition	2154 Drew Valley, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 158,983.03	848.37											
24	PDM-2005-PJ2	Acquisition	2158 Drew Valley, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 165,764.76	849.67											
25	PDM-2005-PJ2	Acquisition	2166 Drew Valley, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 113,739.23	849.60											
26	PDM-2005-PJ2	Acquisition	2292 Burch Circle NE, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 118,389.56	852.61											
27	PDM-2005-PJ2	Acquisition	2298 Burch Circle, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 211,880.50	853.04											
28	PDM-2005-PJ2	Acquisition	2304 Burch Circle, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 161,889.49	853.05											
29	PDM-2005-PJ2	Acquisition	2310 Burch Circle, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 116,064.40	853.76											
30	PDM-2005-PJ2	Acquisition	2329 Nesbitt Drive, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 114,611.17	854.25											
31	PDM-2005-PJ2	Acquisition	2335 Nesbitt Drive, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 111,317.19	853.76											

Table D.10 (part 3 of 4)

Summary of Losses Avoided and ROI Calculations for DeKalb County, July 2008 Event

No.	Disaster/ Proj No	Project Type	Address	Flooding Source	Mitigation Completion Date	Building Type	BRV (2010$)	FFE (ft, NGVD29)	WSE for Event (ft, NGVD29)	Final Flood Depth (ft)	Building Damage ($)	Contents Damage ($)	Displacement Cost ($)	Disruption Cost ($)	Debris Removal Services ($)	Reduced Insurance Transaction Cost ($)	Total Losses Avoided ($)	Total Project Investment (2010$)	ROI
32	PDM-2005-PJ2	Acquisition	2339 Nesbitt Drive, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 107,248.15	854.64											
33	PDM-2005-PJ2	Acquisition	2361 Bynum Rd, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 122,361.71	860.02											
34	PDM-2005-PJ2	Acquisition	2387 Drew Valley, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 120,908.49	866.39											
35	PDM-2005-PJ2	Acquisition	2406 Drew Valley, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o Basement	$ 149,682.38	875.91											
36	PDM-2005-PJ2	Acquisition	2411 Oostanuala Dr, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 180,103.27	878.26											
160	PDMC-PJ-04-GA-2007-005	Acquisition	2313 Hunting Valley Dr, Decatur, GA 30033	South Fork Peachtree Creek	1/12/2009	1 story w/o basement	$ 123,729.06	898.50											
191	PDMC-PJ-04-GA-2007-006	Acquisition	678 Heathmoor Pl, Decatur, GA 30032	Indian Creek	1/16/2009	1 story w/o basement	$ 146,859.05	883.70											
158	PDMC-PJ-04-GA-2007-005	Acquisition	2331 Hunting Valley Dr, Decatur, GA 30033	South Fork Peachtree Creek	1/29/2009	1 story w/o basement	$ 148,393.34	898.30											
176	FMA-2007-PJ2	Acquisition	2380 Bynum Road, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	1/30/2009	2 story w/o basement	$ 236,450.92	863.00											
181	FMA-2007-PJ2	Acquisition	2151 Medfield Trail NE, Atlanta, GA 30345	North Fork Peachtree Creek	1/30/2009	1 story w/o basement	$ 122,506.04	848.30											
175	FMA-2007-PJ2	Acquisition	2746 Dunnington Circle, Atlanta, GA 30341	Peachtree Branch of Henderson Mill Creek	2/10/2009	2 story w/o basement	$ 273,651.17	891.90											
178	FMA-2007-PJ2	Acquisition	2506 Nancy Lane, Atlanta, GA 30345	North Fork Peachtree Creek	2/10/2009	Split level w/o basement	$ 364,868.23	859.70											
182	FMA-2007-PJ2	Acquisition	3197 Barkside Court, Atlanta, GA 30341	North Fork Peachtree Creek	2/10/2009	2 story w/o basement	$ 192,625.97	892.00											
183	FMA-2007-PJ2	Acquisition	3208 Windsor Forest Road, Chamblee, GA 30341	North Fork Peachtree Creek	2/10/2009	Split level w/o basement	$ 176,319.01	884.20											
73	FMA-PJ-04-GA-2006-005	Acquisition	1986 Royal Ct, Chamblee, GA 30341	Nancy Creek	3/30/2009	2 story w/o basement	$ 252,350.21	925.98											
74	FMA-PJ-04-GA-2006-005	Acquisition	1965 Royal Ct, Atlanta, GA 30341	Nancy Creek	3/30/2009	2 story w/o basement	$ 216,780.65	925.29											
75	FMA-PJ-04-GA-2006-005	Acquisition	1976 Queens Way, Chamblee, GA 30341	Nancy Creek	3/30/2009	1 story w/o basement	$ 237,572.02	922.12											
157	PDMC-PJ-04-GA-2007-005	Acquisition	2337 Hunting Valley Dr, Decatur, GA 30033	South Fork Peachtree Creek	4/20/2009	1 story w/o basement	$ 123,729.06	899.40											
159	PDMC-PJ-04-GA-2007-005	Acquisition	2325 Hunting Valley Dr, Decatur, GA 30033	South Fork Peachtree Creek	6/22/2009	1 story w/o basement	$ 123,729.06	899.50											
55	RFC-PJ-04-GA-2006-001	Acquisition	1977 Queens Way, Chamblee, GA 30341	Nancy Creek	6/30/2009	Split level w/o basement	$ 307,284.28	920.95											
56	RFC-PJ-04-GA-2006-001	Acquisition	1982 Queens Way, Chamblee, GA 30341	Nancy Creek	6/30/2009	2 story w/o basement	$ 206,894.56	924.45											
57	RFC-PJ-04-GA-2006-001	Acquisition	1988 Queens Way, Chamblee, GA 30341	Nancy Creek	6/30/2009	2 story w/o basement	$ 240,527.66	919.84											
58	RFC-PJ-04-GA-2006-001	Acquisition	2003 Royal Court, Chamblee, GA 30341	Nancy Creek	6/30/2009	2 story w/o basement	$ 247,152.36	924.03											
59	RFC-PJ-04-GA-2006-001	Acquisition	2006 Royal Court, Chamblee, GA 30341	Nancy Creek	6/30/2009	1 story w/o basement	$ 224,730.29	922.75											
60	RFC-PJ-04-GA-2006-001	Acquisition	2014 Royal Court, Chamblee, GA 30341	Nancy Creek	6/30/2009	1 story w/o basement	$ 227,380.17	922.23											
177	FMA-2007-PJ2	Acquisition	1748 Dresden Drive , Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	7/10/2009	1 story w/o basement	$ 137,793.81	877.50											
154	PDMC-PJ-04-GA-2007-005	Acquisition	2814 Riderwood Dr, Decatur, GA 30033	Burnt Fork Creek	7/24/2009	1 story w/o basement	$ 171,426.92	960.10											
155	PDMC-PJ-04-GA-2007-005	Acquisition	2820 Riderwood Dr, Decatur, GA 30033	Burnt Fork Creek	7/24/2009	1 story w/o basement	$ 145,437.70	960.10											
161	PDMC-PJ-04-GA-2007-005	Acquisition	2397 Hunting Valley Dr, Decatur, GA 30033	South Fork Peachtree Creek	7/24/2009	1 story w/o basement	$ 146,354.97	899.40											
162	PDMC-PJ-04-GA-2007-005	Acquisition	1031 Scott Circle, Decatur, GA 30033	South Fork Peachtree Creek	7/24/2009	1 story w/o basement	$ 115,575.58	897.50											

Table D.10 (part 4 of 4)

Summary of Losses Avoided and ROI Calculations for DeKalb County, July 2008 Event

No.	Disaster/ Proj No	Project Type	Address	Flooding Source	Mitigation Completion Date	Building Type	BRV (2010$)	FFE (ft, NGVD29)	WSE for Event (ft, NGVD29)	Final Flood Depth (ft)	Building Damage ($)	Contents Damage ($)	Displacement Cost ($)	Disruption Cost ($)	Debris Removal Services ($)	Reduced Insurance Transaction Cost ($)	Total Losses Avoided ($)	Total Project Investment (2010$)	ROI
165	PDMC-PJ-04-GA-2007-005	Acquisition	999 Scott Circle, Decatur, GA 30033	South Fork Peachtree Creek	7/24/2009	1 story w/o basement	$ 199,658.34	899.50											
163	PDMC-PJ-04-GA-2007-005	Acquisition	1023 Scott Circle, Decatur, GA 30033	South Fork Peachtree Creek	7/27/2009	1 story w/o basement	$ 115,575.58	898.60											
164	PDMC-PJ-04-GA-2007-005	Acquisition	1005 Scott Circle, Decatur, GA 30033	South Fork Peachtree Creek	8/14/2009	1 story w/o basement	$ 130,965.27	899.60											
76	RFC-PJ-04-GA-001	Acquisition	631 Densley Dr, Decatur, GA 30033	South Fork Peachtree Creek Tributary	9/30/2009	2 story w/o basement	$ 296,371.05	883.60											
78	RFC-2007	Acquisition	2056 Desmond Dr, Decatur, GA 30033	South Fork Peachtree Creek Tributary	9/30/2009	1 story w/o basement	$ 186,435.85	881.50											
										TOTAL	$ 1,506.12	$ 502.04	$ -	$ 2,714.84	$ 91.32	$ -	$ 4,814.31	##########	0.03%

BRV = building replacement value
FFE = first floor elevation
ft = feet
NGVD29 = National Geodetic Vertical Datum of 1929
ROI = Return on Investment
WSE = water surface elevation

Indicates property was not mitigated at time of the storm event.

Table D.11 (part 1 of 4)

Summary of Losses Avoided and ROI Calculations for DeKalb County, September 2009 Event

No.	Disaster/ Proj No	Project Type	Address	Flooding Source	Mitigation Completion Date	Building Type	BRV (2010$)	FFE (ft, NGVD29)	WSE for Event (ft, NGVD29)	Final Flood Depth (ft)	Building Damage ($)	Contents Damage ($)	Displacement Cost ($)	Disruption Cost ($)	Debris Removal Services ($)	Reduced Insurance Transaction Cost ($)	Total Losses Avoided ($)	Total Project Investment (2010$)	ROI
148	1209-0017	Acquisition	2000 McJenkins Dr, Decatur, GA 30032	North Fork Peachtree Creek	5/13/2002	2 story w/o basement	$ 299,215.00	850.00	856.05	6.05	$ 122,353.48	$ 71,839.80	$ 45,078.59	$ 20,640.16	$ 5,061.16	$ 4,466.45	$ 269,439.64	$ 267,445.57	100.7%
142	1071-004	Acquisition	2023 Audubon Dr, Atlanta, GA 30329	Unnamed North Fork Peachtree Creek Tributary	7/18/2002	1 story w/o basement	$ 146,700.84	864.60								$ -	$ -	$ 167,878.71	0.0%
143	1071-004	Acquisition	2263 Melinda Dr, Atlanta, GA 30345	North Fork Peachtree Creek	7/18/2002	2 story w/o basement	$ 197,165.69	858.80	861.70	2.90	$ 50,822.50	$ 29,929.97	$ 16,154.49	$ 13,842.06	$ 2,366.60	$ -	$ 113,115.62	$ 164,078.39	68.9%
144	1071-004	Acquisition	1989 Queens Way, Chamblee, GA 30341	Nancy Creek	7/18/2002	1 story w/o basement	$ 239,883.91	924.00	923.63	-0.37	$ 22,422.18	$ 14,346.48	$ -	$ 6,452.75	$ 1,415.84	$ 1,400.00	$ 46,037.24	$ 228,683.67	20.1%
145	1071-004	Acquisition	3164 Bobbie Lane, Decatur, GA 30032	Cobbs Creek	7/18/2002	2 story w/o basement	$ 160,981.79	931.10								$ -	$ -	$ 99,470.59	0.0%
146	1071-004	Acquisition	649 Cheviot Dr, Decatur, GA 30032	Indian Creek	7/18/2002	2 story w/o basement	$ 196,952.48	882.20	881.70	-0.50	$ 12,168.77	$ 5,944.25	$ -	$ 5,027.66	$ 692.92	$ 1,025.00	$ 24,858.60	$ 102,006.66	24.4%
147	1071-004	Acquisition	665 Cheviot Dr, Decatur, GA 30032	Indian Creek	7/18/2002	2 story w/o basement	$ 228,000.80	881.80	880.94	-0.86	$ 8,862.42	$ 3,564.07	$ -	$ 3,997.02	$ 374.64	$ -	$ 16,798.16	$ 114,674.36	14.6%
2	1209-0042	Acquisition	6251 Cathedral Lane, Lithonia, GA 30030	Stephenson Creek	5/22/2003	2 story w/o basement	$ 225,157.59	686.50	688.10	1.60	$ 41,924.34	$ 24,317.02	$ 7,185.45	$ 10,623.33	$ 2,457.55	$ -	$ 86,507.70	$ 168,801.42	51.2%
1	1209-0042	Acquisition	3230 Barkside Court, Chamblee, GA 30030	North Fork Peachtree Creek	5/23/2003	2 story w/o basement	$ 250,382.70	884.30	893.15	8.85	$ 250,382.70	$ 75,152.48	$ 49,548.81	$ 25,573.39	$ 16,961.11	$ 6,836.24	$ 424,454.74	$ 321,384.49	132.1%
6	1209-0042	Acquisition	2293 Hunting Valley, Decatur, GA 30030	South Fork Peachtree Creek	6/10/2003	2 story w/o basement	$ 145,351.00	895.50	896.99	1.49	$ 26,158.99	$ 15,141.98	$ 8,092.07	$ 10,343.18	$ 1,609.91	$ -	$ 61,346.14	$ 358,591.86	17.1%
4	1209-0042	Acquisition	671 Cheviot Drive, Decatur, GA 30030	Indian Creek	6/12/2003	2 story w/o basement	$ 297,752.40	880.10	880.63	0.53	$ 36,974.97	$ 20,709.79	$ 3,616.32	$ 7,833.93	$ 1,406.42	$ -	$ 70,541.43	$ 170,384.27	41.4%
5	1209-0042	Acquisition	2441 Green Forrest, Decatur, GA 30030	Shoal Creek	7/24/2003	2 story w/o basement	$ 104,220.55	822.40								$ -	$ -	$ 185,687.59	0.0%
7	1209-0042	Acquisition	2133 Medfield Trail NE, Atlanta, GA 30345	North Fork Peachtree Creek	4/16/2004	2 story w/o basement	$ 156,423.83	847.00	852.93	5.93	$ 63,191.05	$ 37,111.75	$ 27,073.11	$ 20,417.90	$ 3,025.09	$ 3,000.00	$ 153,818.89	$ 274,289.34	56.1%
11	1209-0042	Acquisition	683 Cheviot Drive, Decatur, GA 30032	Indian Creek	5/14/2004	2 story w/o basement	$ 162,080.80	881.90	880.05	-1.85	$ 734.35	$ 244.78	$ -	$ 2,452.58	$ 44.27	$ -	$ 3,475.98	$ 189,510.43	1.8%
10	1209-0042	Acquisition	677 Cheviot Drive, Decatur, GA 30032	Indian Creek	5/19/2004	2 story w/o basement	$ 239,024.73	880.00	880.37	0.37	$ 27,458.33	$ 15,230.46	$ 2,248.15	$ 7,415.49	$ 1,149.35	$ 1,400.00	$ 54,901.78	$ 179,002.77	30.7%
12	1209-0042	Acquisition	687 Cheviot Drive, Decatur, GA 30032	Indian Creek	6/1/2004	2 story w/o basement	$ 183,932.77	881.90	879.77	-2.13	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 191,830.47	0.0%
13	1209-0042	Acquisition	686 Heathmoor Pl, Decatur, GA 30032	Indian Creek	6/16/2004	1 story w/o basement	$ 109,259.83	879.60	880.44	0.84	$ 23,759.90	$ 13,639.87	$ 2,712.04	$ 12,029.39	$ 1,132.11	$ -	$ 53,273.30	$ 172,792.50	30.8%
3	1209-0042	Acquisition	657 Cheviot Drive, Decatur, GA 30032	Indian Creek	8/11/2004	2 story w/o basement	$ 250,299.27	880.10	881.30	1.20	$ 40,913.53	$ 23,537.11	$ 7,138.71	$ 9,600.51	$ 1,604.29	$ 1,933.52	$ 84,727.67	$ 188,799.97	44.9%
201	1209-0042	Acquisition	2333 Poplar Springs Dr NE, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	11/18/2004	2 story w/o basement	$ 182,922.31	852.54	851.60	-0.94	$ 6,188.68	$ 2,274.31	$ -	$ 3,770.44	$ 273.20	$ -	$ 12,506.64	$ 337,384.25	3.7%
9	1209-0042	Acquisition	643 Cheviot Drive, Decatur, GA 30032	Indian Creek	12/3/2004	2 story w/o basement	$ 265,262.60	880.00	882.12	2.12	$ 57,181.45	$ 33,426.33	$ 16,569.74	$ 11,944.07	$ 2,796.59	$ -	$ 121,918.17	$ 206,030.14	59.2%
14	1209-0042	Acquisition	694 Heathmoor Pl, Decatur, GA 30032	Indian Creek	3/31/2005	1 story w/o basement	$ 140,312.02	880.50	880.08	-0.42	$ 12,425.26	$ 8,030.75	$ -	$ 6,231.63	$ 646.82	$ 1,025.00	$ 28,359.46	$ 188,750.69	15.0%
15	1209-0042	Acquisition	621 Densley Drive, Decatur, GA 30033	South Fork Peachtree Creek Tributary	3/31/2005	2 story w/o basement	$ 161,651.37	884.60	886.00	1.40	$ 28,256.66	$ 16,326.79	$ 5,991.99	$ 10,110.60	$ 1,224.37	$ -	$ 61,910.42	$ 346,621.79	17.9%
16	1209-0042	Acquisition	3743 Kingswood Dr, Decatur, GA 30032	Indian Creek	3/31/2005	2 story w/o basement	$ 227,159.82	883.20	882.71	-0.49	$ 14,079.69	$ 6,884.23	$ -	$ 5,036.48	$ 705.62	$ 1,025.00	$ 27,731.02	$ 163,013.64	17.0%
17	1209-0042	Acquisition	2402 Drew Valley, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	3/31/2005	1 story w/o basement	$ 86,600.34	875.91	870.72	-5.19	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 228,933.44	0.0%
18	1209-0042	Acquisition	2396 Drew Valley, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	3/31/2005	1 story w/o basement	$ 168,795.58	875.09	873.10	-1.99	$ 29.99	$ 28.79	$ -	$ 2,256.79	$ 1.38	$ 375.00	$ 2,691.95	$ 350,475.22	0.8%
19	1209-0042	Acquisition	2390 Drew Valley, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	3/31/2005	1 story w/o basement	$ 139,201.29	874.48	874.82	0.34	$ 23,347.00	$ 13,740.85	$ 1,253.93	$ 9,792.23	$ 1,006.09	$ -	$ 49,140.11	$ 330,419.77	14.9%
20	1209-0042	Acquisition	2319 Poplar Springs Dr NE, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	3/31/2005	2 story w/o basement	$ 186,834.25	850.30	851.19	0.89	$ 27,238.09	$ 15,526.67	$ 4,551.73	$ 8,805.74	$ 1,219.46	$ 1,400.00	$ 58,741.67	$ 279,257.53	21.0%
21	1209-0042	Acquisition	2327 Poplar Springs Dr NE, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	3/31/2005	2 story w/o basement	$ 178,540.94	851.23	851.20	-0.03	$ 16,256.70	$ 8,706.35	$ -	$ 6,344.00	$ 725.18	$ -	$ 32,032.24	$ 274,385.10	11.7%
126	1209-0042	Acquisition	2301 Poplar Springs, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	3/31/2005	2 story w/o basement	$ 238,463.54	851.20	851.20	0.00	$ 22,147.03	$ 11,904.08	$ -	$ 6,425.90	$ 457.59	$ 1,175.00	$ 42,109.60	$ 269,643.67	15.6%

Table D.11 (part 2 of 4)

Summary of Losses Avoided and ROI Calculations for DeKalb County, September 2009 Event

No.	Disaster/ Proj No	Project Type	Address	Flooding Source	Mitigation Completion Date	Building Type	BRV (2010$)	FFE (ft, NGVD29)	WSE for Event (ft, NGVD29)	Final Flood Depth (ft)	Building Damage ($)	Contents Damage ($)	Displacement Cost ($)	Disruption Cost ($)	Debris Removal Services ($)	Reduced Insurance Transaction Cost ($)	Total Losses Avoided ($)	Total Project Investment (2010$)	ROI
65	1209-059	Acquisition	2813 Riderwood Dr, Decatur, GA 30033	Burnt Fork Creek	6/9/2005	2 story w/o basement	$ 304,544.63	956.30	957.00	0.70	$ 40,900.34	$ 23,114.94	$ 6,179.90	$ 8,289.08	$ 1,972.01	$ 1,920.46	$ 82,376.72	$ 407,710.90	20.2%
66	1209-059	Acquisition	3636 Bishop Dr, Tucker, GA 30084	Unnamed South Fork Peachtree Tributary	6/9/2005	1 story w/o basement	$ 176,840.70	1010.00	1011.00	1.00	$ 41,203.88	$ 23,519.81	$ 6,199.50	$ 12,728.21	$ 4,279.20	$ -	$ 87,930.60	$ 198,247.46	44.4%
67	1209-059	Acquisition	2157 Medfield Tr, Atlanta, GA 30345	North Fork Peachtree Creek	6/9/2005	1 story w/o basement	$ 138,773.75	846.90	853.48	6.58	$ 138,773.75	$ 45,579.72	$ 28,378.53	$ 29,814.25	$ 7,282.80	$ 4,240.13	$ 254,069.19	$ 225,491.56	112.7%
68	1209-059	Acquisition	2342 Nesbitt Dr, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	6/9/2005	1 story w/o basement	$ 117,179.68	855.00	857.66	2.66	$ 43,824.97	$ 24,157.94	$ 7,935.36	$ 19,069.74	$ 1,792.97	$ -	$ 96,780.98	$ 267,842.16	36.1%
141	PDM-2005-PJ5	Acquisition	3141 Buford Highway, Atlanta, GA 30329	North Fork Peachtree Creek	8/9/2007	2 story w/o basement	$ 911,552.55	833.80	836.68	2.88	$ 233,638.82	$ 137,563.17	$ 36,326.46	$ 13,776.54	$ 8,738.58	$ -	$ 430,043.57	$ 1,547,534.18	27.8%
170	PDM-PJ-04-GA-2006-002	Acquisition	1991 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	10/1/2007	Split level w/o basement	$ 203,531.24	921.60	923.68	2.08	$ 27,006.06	$ 15,865.27	$ 8,857.49	$ 8,216.56	$ 924.36	$ 1,400.00	$ 62,269.74	$ 331,588.01	18.8%
174	PDM-PJ-04-GA-2006-002	Acquisition	1946 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	10/16/2007	1 story w/o basement	$ 186,816.61	922.59	923.77	1.18	$ 46,445.62	$ 26,371.59	$ 4,598.02	$ 13,430.56	$ 1,582.54	$ 2,184.52	$ 94,612.85	$ 329,402.55	28.7%
172	PDM-PJ-04-GA-2006-002	Acquisition	1954 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	10/22/2007	Split level w/o basement	$ 232,883.77	923.01	923.74	0.73	$ 20,526.14	$ 9,828.78	$ 3,571.11	$ 6,212.94	$ 700.23	$ 1,175.00	$ 42,014.20	$ 343,608.01	12.2%
171	PDM-PJ-04-GA-2006-002	Acquisition	1947 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	10/28/2007	Split level w/o basement	$ 209,034.84	920.97	923.78	2.81	$ 34,567.87	$ 21,759.51	$ 12,270.35	$ 9,686.43	$ 1,187.93	$ -	$ 79,472.09	$ 333,773.46	23.8%
173	PDM-PJ-04-GA-2006-002	Acquisition	1955 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	10/28/2007	2 story w/o basement	$ 208,525.25	925.09	923.76	-1.33	$ 4,202.49	$ 1,400.83	$ -	$ 3,155.22	$ 141.19	$ -	$ 8,899.73	$ 334,866.19	2.7%
169	PDM-PJ-04-GA-2006-002	Acquisition	1939 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	11/12/2007	1 Story w/o basement	$ 221,061.23	922.03	923.80	1.77	$ 66,444.58	$ 37,209.28	$ 8,169.00	$ 15,767.28	$ 2,275.56	$ -	$ 129,865.70	$ 340,329.82	38.2%
166	PDM-PJ-04-GA-2006-002	Acquisition	1915 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	4/18/2008	Split level w/o basement	$ 226,768.66	920.78	923.87	3.09	$ 40,534.37	$ 26,008.70	$ 14,637.25	$ 10,288.16	$ 1,397.18	$ 1,996.29	$ 94,861.94	$ 333,600.01	28.4%
167	PDM-PJ-04-GA-2006-002	Acquisition	1923 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	6/1/2008	Split level w/o basement	$ 274,364.60	920.67	923.83	3.16	$ 50,158.13	$ 32,335.67	$ 18,141.46	$ 10,471.11	$ 1,736.62	$ -	$ 112,843.00	$ 353,120.57	32.0%
168	PDM-PJ-04-GA-2006-002	Acquisition	1931 Gainsborough Drive, Atlanta, GA 30341	Nancy Creek	6/1/2008	1 Story w/o basement	$ 216,067.22	924.20	923.82	-0.38	$ 19,944.74	$ 12,790.70	$ -	$ 6,400.45	$ 686.62	$ 1,175.00	$ 40,997.50	$ 330,417.31	12.4%
52	PDMC-PJ-04-2005-001	Acquisition	3139 Buford Highway, Atlanta, GA 30329	North Fork Peachtree Creek	7/30/2008	2 story w/o basement	$1,015,515.93	834.20	836.59	2.39	$ 233,587.56	$ 136,936.94	$ 31,661.52	$ 12,594.12	$ 7,839.71	$ -	$ 422,619.85	$ 1,333,039.95	31.7%
53	PDMC-PJ-04-2005-001	Acquisition	3145 Buford Highway, Atlanta, GA 30329	North Fork Peachtree Creek	7/30/2008	2 story w/o basement	$1,015,515.93	832.50	836.76	4.26	$ 331,516.37	$ 195,246.33	$ 49,581.11	$ 16,931.27	$ 11,130.24	$ 11,062.02	$ 615,467.33	$ 1,333,039.95	46.2%
54	PDMC-PJ-04-2005-001	Acquisition	3143 Buford Highway, Atlanta, GA 30329	North Fork Peachtree Creek	7/30/2008	2 story w/o basement	$1,015,515.93	832.80	836.71	3.91	$ 314,161.35	$ 185,099.47	$ 46,224.09	$ 16,162.63	$ 10,547.89	$ -	$ 572,195.42	$ 1,333,039.95	42.9%
194	PDMC-PJ-04-GA-2007-001	Acquisition	520 Weschester, Decatur, GA 30030	Peavine Creek Tributary	11/18/2008	1 story w/o basement	$ 204,952.38	926.90	925.00	-1.90	$ 512.38	$ 491.89	$ -	$ 2,361.24	$ 26.70	$ 600.00	$ 3,992.21	$ 484,662.62	0.8%
195	PDMC-PJ-04-GA-2007-001	Acquisition	514 Weschester, Decatur, GA 30030	Peavine Creek Tributary	11/18/2008	1 story w/o basement	$ 198,885.84	926.58	925.00	-1.58	$ 2,088.30	$ 2,004.77	$ -	$ 2,721.05	$ 108.83	$ -	$ 6,922.94	$ 428,201.52	1.6%
196	PDMC-PJ-04-GA-2007-001	Acquisition	526 Weschester, Decatur, GA 30030	Peavine Creek Tributary	11/18/2008	1 story w/o basement	$ 125,329.10	926.24	925.00	-1.24	$ 2,381.25	$ 2,286.00	$ -	$ 3,103.34	$ 123.94	$ 600.00	$ 8,494.54	$ 410,014.51	2.1%
197	PDMC-PJ-04-GA-2007-001	Acquisition	532 Weschester, Decatur, GA 30030	Peavine Creek Tributary	11/18/2008	2 story w/o basement	$ 199,987.27	925.00	925.00	0.00	$ 18,598.82	$ 9,999.36	$ -	$ 6,431.57	$ 788.34	$ -	$ 35,818.08	$ 431,177.34	8.3%
179	FMA-2007-PJ2	Acquisition	3227 Wake Robin Trail, Chamblee, GA 30341	Henderson Mill Creek	11/20/2008	2 story w/o basement	$ 303,309.46	900.21	899.75	-0.46	$ 19,417.87	$ 9,584.58	$ -	$ 5,128.16	$ 1,395.34	$ -	$ 35,525.96	$ 452,997.93	7.8%
22	PDM-2005-PJ2	Acquisition	2148 Drew Valley, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 190,178.97	849.23	848.21	-1.02	$ 5,578.85	$ 1,859.62	$ -	$ 3,568.16	$ 261.27	$ 800.00	$ 12,067.89	$ 247,614.06	4.9%
23	PDM-2005-PJ2	Acquisition	2154 Drew Valley, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 158,983.03	848.37	848.23	-0.14	$ 13,433.12	$ 7,090.55	$ -	$ 6,049.01	$ 691.45	$ -	$ 27,264.13	$ 247,614.06	11.0%
24	PDM-2005-PJ2	Acquisition	2158 Drew Valley, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 165,764.76	849.67	848.33	-1.34	$ 3,277.67	$ 1,092.56	$ -	$ 3,138.11	$ 166.85	$ 600.00	$ 8,275.20	$ 247,614.06	3.3%
25	PDM-2005-PJ2	Acquisition	2166 Drew Valley, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 113,739.23	849.60	848.38	-1.22	$ 2,676.30	$ 892.10	$ -	$ 3,307.09	$ 190.42	$ -	$ 7,065.92	$ 247,614.06	2.9%
26	PDM-2005-PJ2	Acquisition	2292 Burch Circle NE, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 118,389.56	852.61	851.20	-1.41	$ 2,095.54	$ 698.51	$ -	$ 3,044.89	$ 133.81	$ 600.00	$ 6,572.76	$ 247,614.06	2.7%
27	PDM-2005-PJ2	Acquisition	2298 Burch Circle, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 211,880.50	853.04	851.34	-1.70	$ 1,930.37	$ 643.46	$ -	$ 2,658.56	$ 68.45	$ -	$ 5,300.84	$ 247,614.06	2.1%
28	PDM-2005-PJ2	Acquisition	2304 Burch Circle, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 161,889.49	853.05	851.82	-1.23	$ 3,740.57	$ 1,246.86	$ -	$ 3,288.00	$ 170.02	$ 600.00	$ 9,045.45	$ 247,614.06	3.7%
29	PDM-2005-PJ2	Acquisition	2310 Burch Circle, Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 116,064.40	853.76	852.36	-1.40	$ 2,083.37	$ 694.46	$ -	$ 3,056.12	$ 134.02	$ -	$ 5,967.97	$ 247,614.06	2.4%
30	PDM-2005-PJ2	Acquisition	2329 Nesbitt Drive, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 114,611.17	854.25	855.31	1.06	$ 17,825.21	$ 10,219.44	$ 4,791.47	$ 9,243.81	$ 1,150.03	$ 1,175.00	$ 44,404.96	$ 247,614.06	17.9%
31	PDM-2005-PJ2	Acquisition	2335 Nesbitt Drive, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 111,317.19	853.76	855.31	1.55	$ 20,413.86	$ 11,829.82	$ 6,755.52	$ 10,496.71	$ 1,308.44	$ -	$ 50,804.35	$ 247,614.06	20.5%

Table D.11 (part 3 of 4)

Summary of Losses Avoided and ROI Calculations for DeKalb County, September 2009 Event

No.	Disaster/ Proj No	Project Type	Address	Flooding Source	Mitigation Completion Date	Building Type	BRV (2010$)	FFE (ft, NGVD29)	WSE for Event (ft, NGVD29)	Final Flood Depth (ft)	Building Damage ($)	Contents Damage ($)	Displacement Cost ($)	Disruption Cost ($)	Debris Removal Services ($)	Reduced Insurance Transaction Cost ($)	Total Losses Avoided ($)	Total Project Investment (2010$)	ROI
32	PDM-2005-PJ2	Acquisition	2339 Nesbitt Drive, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 107,248.15	854.64	855.38	0.74	$ 14,638.03	$ 8,287.26	$ 3,476.58	$ 8,387.46	$ 1,055.88	$ 1,025.00	$ 36,870.21	$ 247,614.06	14.9%
33	PDM-2005-PJ2	Acquisition	2361 Bynum Rd, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 122,361.71	860.02	860.22	0.20	$ 12,811.84	$ 7,016.25	$ 987.28	$ 6,958.00	$ 854.95	$ -	$ 28,628.31	$ 247,614.06	11.6%
34	PDM-2005-PJ2	Acquisition	2387 Drew Valley, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 120,908.49	866.39	865.63	-0.76	$ 5,455.43	$ 2,369.83	$ -	$ 4,278.13	$ 296.63	$ 800.00	$ 13,200.02	$ 247,614.06	5.3%
35	PDM-2005-PJ2	Acquisition	2406 Drew Valley, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o Basement	$ 149,682.38	875.91	870.10	-5.81	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 247,614.06	0.0%
36	PDM-2005-PJ2	Acquisition	2411 Oostanuala Dr, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	12/12/2008	2 story w/o basement	$ 180,103.27	878.26	874.81	-3.45	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 247,614.06	0.0%
160	PDMC-PJ-04-GA-2007-005	Acquisition	2313 Hunting Valley Dr, Decatur, GA 30033	South Fork Peachtree Creek	1/12/2009	1 story w/o basement	$ 123,729.06	898.50	897.19	-1.31	$ 2,142.45	$ 2,056.75	$ -	$ 3,027.59	$ 75.30	$ 600.00	$ 7,902.10	$ 311,317.50	2.5%
191	PDMC-PJ-04-GA-2007-006	Acquisition	678 Heathmoor Pl, Decatur, GA 30032	Indian Creek	1/16/2009	1 story w/o basement	$ 146,859.05	883.70	880.95	-2.75	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 201,777.00	0.0%
158	PDMC-PJ-04-GA-2007-005	Acquisition	2331 Hunting Valley Dr, Decatur, GA 30033	South Fork Peachtree Creek	1/29/2009	1 story w/o basement	$ 148,393.34	898.30	897.33	-0.97	$ 4,163.76	$ 3,798.82	$ -	$ 3,510.78	$ 145.75	$ 800.00	$ 12,419.11	$ 368,791.50	3.4%
176	FMA-2007-PJ2	Acquisition	2380 Bynum Road, Atlanta, GA 30319	Unnamed Tributary of North Fork Peachtree Creek Tributary A	1/30/2009	2 story w/o basement	$ 236,450.92	863.00	862.27	-0.73	$ 11,043.11	$ 4,872.18	$ -	$ 4,349.34	$ 375.98	$ 1,025.00	$ 21,665.61	$ 381,563.50	5.7%
181	FMA-2007-PJ2	Acquisition	2151 Medfield Trail NE, Atlanta, GA 30345	North Fork Peachtree Creek	1/30/2009	1 story w/o basement	$ 122,506.04	848.30	853.35	5.05	$ 122,506.04	$ 35,440.98	$ 12,927.06	$ 26,292.96	$ 4,327.20	$ 3,632.78	$ 205,127.02	$ 269,169.90	76.2%
175	FMA-2007-PJ2	Acquisition	2746 Dunnington Circle, Atlanta, GA 30341	Peachtree Branch of Henderson Mill Creek	2/10/2009	2 story w/o basement	$ 273,651.17	891.90	901.00	9.10	$ 273,651.17	$ 83,381.51	$ 52,053.40	$ 25,964.64	$ 9,666.00	$ -	$ 444,716.73	$ 394,335.50	112.8%
178	FMA-2007-PJ2	Acquisition	2506 Nancy Lane, Atlanta, GA 30345	North Fork Peachtree Creek	2/10/2009	Split level w/o basement	$ 364,868.23	859.70	865.24	5.54	$ 118,474.10	$ 83,404.98	$ 42,260.24	$ 16,852.68	$ 4,132.88	$ 4,643.22	$ 269,768.10	$ 387,949.50	69.5%
182	FMA-2007-PJ2	Acquisition	3197 Barkside Court, Atlanta, GA 30341	North Fork Peachtree Creek	2/10/2009	2 story w/o basement	$ 192,625.97	892.00	893.89	1.89	$ 39,020.40	$ 22,739.93	$ 7,598.80	$ 11,359.62	$ 1,332.65	$ -	$ 82,051.40	$ 336,861.50	24.4%
183	FMA-2007-PJ2	Acquisition	3208 Windsor Forest Road, Chamblee, GA 30341	North Fork Peachtree Creek	2/10/2009	Split level w/o basement	$ 176,319.01	884.20	894.42	10.22	$ 176,319.01	$ 82,440.38	$ 37,657.21	$ 30,990.33	$ 11,165.42	$ 5,750.00	$ 344,322.34	$ 362,405.50	95.0%
73	FMA-PJ-04-GA-2006-005	Acquisition	1986 Royal Ct, Chamblee, GA 30341	Nancy Creek	3/30/2009	2 story w/o basement	$ 252,350.21	925.98	923.53	-2.45	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 341,393.50	0.0%
74	FMA-PJ-04-GA-2006-005	Acquisition	1965 Royal Ct, Atlanta, GA 30341	Nancy Creek	3/30/2009	2 story w/o basement	$ 216,780.65	925.29	923.56	-1.73	$ 1,752.73	$ 584.24	$ -	$ 2,612.44	$ 59.00	$ -	$ 5,008.42	$ 329,033.50	1.5%
75	FMA-PJ-04-GA-2006-005	Acquisition	1976 Queens Way, Chamblee, GA 30341	Nancy Creek	3/30/2009	1 story w/o basement	$ 237,572.02	922.12	923.60	1.48	$ 65,433.47	$ 36,865.75	$ 7,360.15	$ 14,636.35	$ 4,027.17	$ 3,000.00	$ 131,322.89	$ 331,093.50	39.7%
157	PDMC-PJ-04-GA-2007-005	Acquisition	2337 Hunting Valley Dr, Decatur, GA 30033	South Fork Peachtree Creek	4/20/2009	1 story w/o basement	$ 123,729.06	899.40	897.44	-1.96	$ 115.05	$ 110.45	$ -	$ 2,290.62	$ 4.04	$ -	$ 2,520.17	$ 362,405.50	0.7%
159	PDMC-PJ-04-GA-2007-005	Acquisition	2325 Hunting Valley Dr, Decatur, GA 30033	South Fork Peachtree Creek	6/22/2009	1 story w/o basement	$ 123,729.06	899.50	897.27	-2.23	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 311,317.50	0.0%
55	RFC-PJ-04-GA-2006-001	Acquisition	1977 Queens Way, Chamblee, GA 30341	Nancy Creek	6/30/2009	Split level w/o basement	$ 307,284.28	920.95	923.64	2.69	$ 49,245.19	$ 30,730.74	$ 17,308.27	$ 9,456.63	$ 3,060.13	$ 2,399.28	$ 112,200.23	$ 358,605.77	31.3%
56	RFC-PJ-04-GA-2006-001	Acquisition	1982 Queens Way, Chamblee, GA 30341	Nancy Creek	6/30/2009	2 story w/o basement	$ 206,894.56	924.45	923.60	-0.85	$ 8,133.03	$ 3,291.93	$ -	$ 4,016.81	$ 492.37	$ -	$ 15,934.14	$ 322,596.00	4.9%
57	RFC-PJ-04-GA-2006-001	Acquisition	1988 Queens Way, Chamblee, GA 30341	Nancy Creek	6/30/2009	2 story w/o basement	$ 240,527.66	919.84	923.61	3.77	$ 72,653.20	$ 42,807.92	$ 18,933.75	$ 15,834.14	$ 4,480.65	$ 3,000.00	$ 157,709.67	$ 350,296.82	45.0%
58	RFC-PJ-04-GA-2006-001	Acquisition	2003 Royal Court, Chamblee, GA 30341	Nancy Creek	6/30/2009	2 story w/o basement	$ 247,152.36	924.03	923.58	-0.45	$ 15,902.64	$ 7,860.77	$ -	$ 5,142.71	$ 975.54	$ -	$ 29,881.66	$ 361,110.79	8.3%
59	RFC-PJ-04-GA-2006-001	Acquisition	2006 Royal Court, Chamblee, GA 30341	Nancy Creek	6/30/2009	1 story w/o basement	$ 224,730.29	922.75	923.57	0.82	$ 48,315.53	$ 27,763.63	$ 3,843.14	$ 11,918.34	$ 2,971.05	$ 2,282.37	$ 97,094.07	$ 343,040.47	28.3%
60	RFC-PJ-04-GA-2006-001	Acquisition	2014 Royal Court, Chamblee, GA 30341	Nancy Creek	6/30/2009	1 story w/o basement	$ 227,380.17	922.23	923.58	1.35	$ 60,067.50	$ 33,946.61	$ 6,436.58	$ 14,130.20	$ 3,692.57	$ -	$ 118,273.46	$ 343,272.22	34.5%
177	FMA-2007-PJ2	Acquisition	1748 Dresden Drive , Atlanta, GA 30319	North Fork Peachtree Creek Tributary A	7/10/2009	1 story w/o basement	$ 137,793.81	877.50	876.66	-0.84	$ 5,916.32	$ 4,599.47	$ -	$ 4,179.89	$ 203.82	$ -	$ 14,899.50	$ 375,177.50	4.0%
154	PDMC-PJ-04-GA-2007-005	Acquisition	2814 Riderwood Dr, Decatur, GA 30033	Burnt Fork Creek	7/24/2009	1 story w/o basement	$ 171,426.92	960.10	957.50	-2.60	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 387,949.50	0.0%
155	PDMC-PJ-04-GA-2007-005	Acquisition	2820 Riderwood Dr, Decatur, GA 30033	Burnt Fork Creek	7/24/2009	1 story w/o basement	$ 145,437.70	960.10	957.50	-2.60	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 368,791.50	0.0%
161	PDMC-PJ-04-GA-2007-005	Acquisition	2397 Hunting Valley Dr, Decatur, GA 30033	South Fork Peachtree Creek	7/24/2009	1 story w/o basement	$ 146,354.97	899.40	899.20	-0.20	$ 16,457.25	$ 10,205.25	$ -	$ 7,306.24	$ 558.24	$ -	$ 34,526.97	$ 367,813.00	9.4%
162	PDMC-PJ-04-GA-2007-005	Acquisition	1031 Scott Circle, Decatur, GA 30033	South Fork Peachtree Creek	7/24/2009	1 story w/o basement	$ 115,575.58	897.50	896.53	-0.97	$ 3,230.78	$ 2,952.34	$ -	$ 3,506.05	$ 112.82	$ 800.00	$ 10,601.99	$ 311,317.50	3.4%

Table D.11 (part 4 of 4)

Summary of Losses Avoided and ROI Calculations for DeKalb County, September 2009 Event

No.	Disaster/ Proj No	Project Type	Address	Flooding Source	Mitigation Completion Date	Building Type	BRV (2010$)	FFE (ft, NGVD29)	WSE for Event (ft, NGVD29)	Final Flood Depth (ft)	Building Damage ($)	Contents Damage ($)	Displacement Cost ($)	Disruption Cost ($)	Debris Removal Services ($)	Reduced Insurance Transaction Cost ($)	Total Losses Avoided ($)	Total Project Investment (2010$)	ROI
165	PDMC-PJ-04-GA-2007-005	Acquisition	999 Scott Circle, Decatur, GA 30033	South Fork Peachtree Creek	7/24/2009	1 story w/o basement	$ 199,658.34	899.50	897.03	-2.47	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 335,883.00	0.0%
163	PDMC-PJ-04-GA-2007-005	Acquisition	1023 Scott Circle, Decatur, GA 30033	South Fork Peachtree Creek	7/27/2009	1 story w/o basement	$ 115,575.58	898.60	896.83	-1.77	$ 676.95	$ 649.88	$ -	$ 2,512.24	$ 23.79	$ -	$ 3,862.85	$ 311,317.50	1.2%
164	PDMC-PJ-04-GA-2007-005	Acquisition	1005 Scott Circle, Decatur, GA 30033	South Fork Peachtree Creek	8/14/2009	1 story w/o basement	$ 130,965.27	899.60	897.01	-2.59	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 324,089.50	0.0%
76	RFC-PJ-04-GA-001	Acquisition	631 Densley Dr, Decatur, GA 30033	South Fork Peachtree Creek Tributary	9/30/2009	2 story w/o basement	$ 296,371.05	883.60	886.00	2.40	$ 68,343.16	$ 40,069.37	$ 17,016.02	$ 12,620.27	$ 2,711.26	$ -	$ 140,760.07	$ 369,512.50	38.1%
78	RFC-2007	Acquisition	2056 Desmond Dr, Decatur, GA 30033	South Fork Peachtree Creek Tributary	9/30/2009	1 story w/o basement	$ 186,435.85	881.50	879.75	-1.75	$ 1,165.22	$ 1,118.62	$ -	$ 2,529.90	$ 34.65	$ 600.00	$ 5,448.39	$ 355,911.35	1.5%
										TOTAL	$ 3,936,402.01	$ 2,062,347.40	$ 719,351.73	$ 762,221.96	$ 176,126.84	$ 85,547.27	$ 7,741,997.21	###########	23.90%

BRV = building replacement value
FFE = first floor elevation
ft = feet
NGVD29 = National Geodetic Vertical Datum of 1929
ROI = Return on Investment
WSE = water surface elevation

Appendix E

Douglas County: Summary of Losses Avoided and Return on Investment Calculations

List of Figures and Tables

Note: Event-specific maps depict only buildings that were included in the analysis of that event

Figure E.1

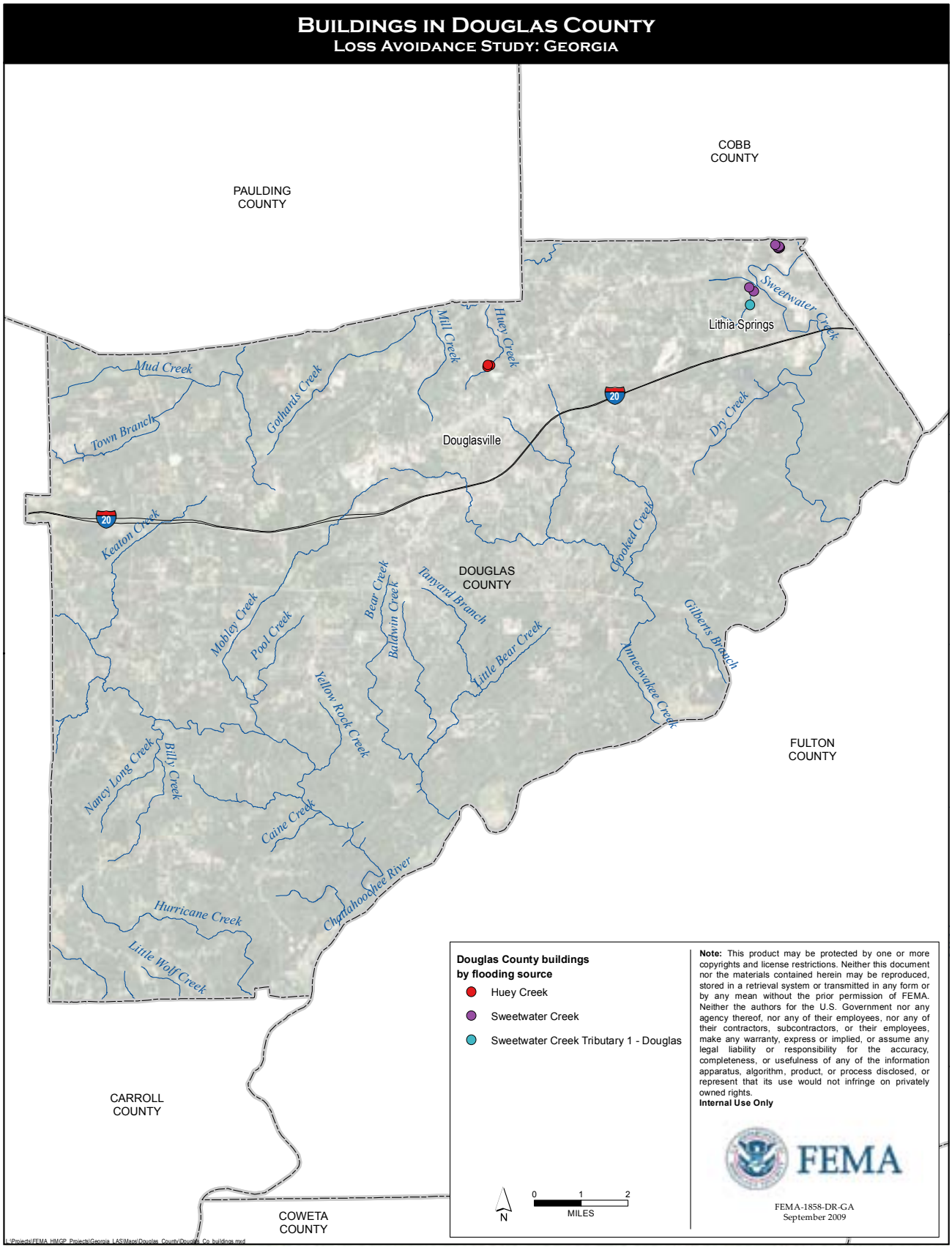
BUILDINGS IN DOUGLAS COUNTY
LOSS AVOIDANCE STUDY: GEORGIA
COBB COUNTY
PAULDING COUNTY
Sweetwater Creek
Lithia Springs
Mill Creek
Huey Creek
Mud Creek
Gothards Creek
Town Branch
Douglasville
20
Dry Creek
Keaton Creek
Crooked Creek
DOUGLAS COUNTY
Bear Creek
Tanyard Branch
Baldwin Creek
Mobley Creek
Pool Creek
Gilberts Branch
Little Bear Creek
Yellow Rock Creek
Annewakee Creek
FULTON COUNTY
Nancy Long Creek
Billy Creek
Caine Creek
Chattahoochee River
Hurricane Creek
Little Wolf Creek
CARROLL COUNTY
COWETA COUNTY
Douglas County buildings by flooding source
Huey Creek
Sweetwater Creek
Sweetwater Creek Tributary 1 - Douglas
N
0 1 2
MILES
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Figure E.2

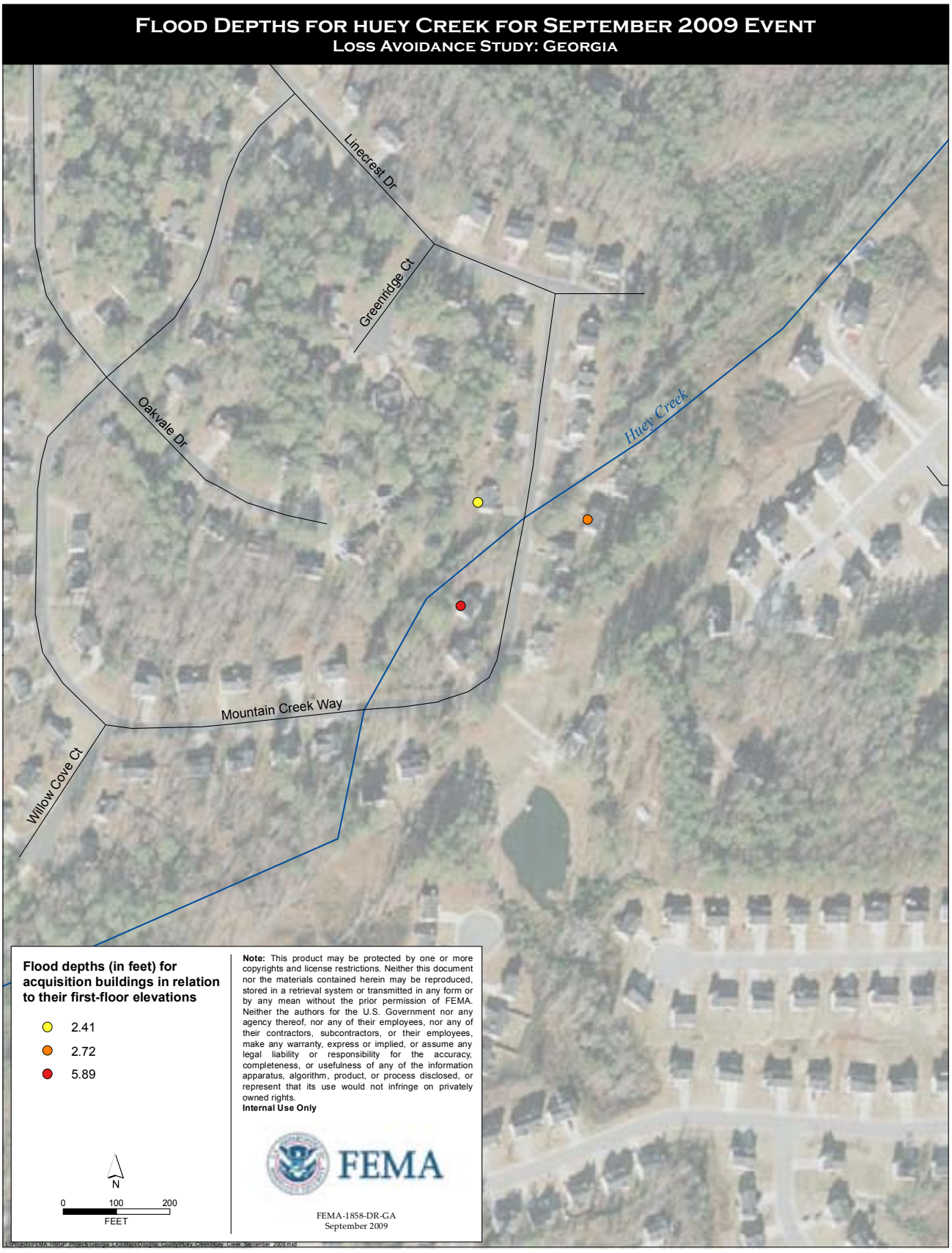
Flood Depths for Huey Creek for September 2009 Event
Loss Avoidance Study: Georgia
Linecrest Dr
Greenridge Ct
Oakvale Dr
Huey Creek
Mountain Creek Way
Willow Cove Ct
Flood depths (in feet) for acquisition buildings in relation to their first-floor elevations
2.41
2.72
5.89
N
0
100
200
FEET
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Figure E.3

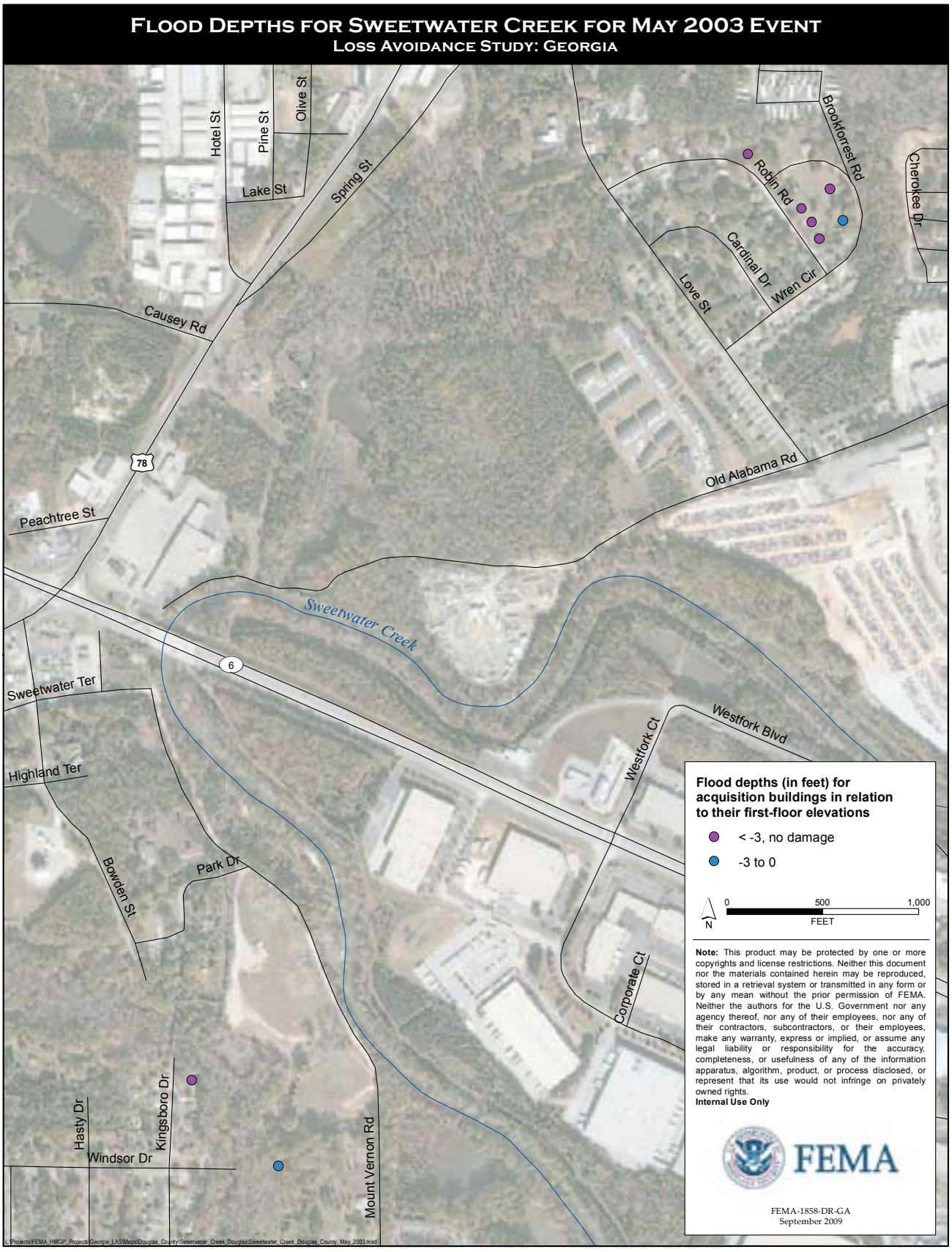
Flood Depths for Sweetwater Creek for May 2003 Event
Loss Avoidance Study: Georgia
Hotel St
Pine St
Olive St
Lake St
Spring St
Brookforrest Rd
Robin Rd
Cherokee Dr
Cardinal Dr
Wren Cir
Love St
Causey Rd
78
Old Alabama Rd
Peachtree St
Sweetwater Creek
6
Sweetwater Ter
Westfork Blvd
Westfork Ct
Highland Ter
Bowden St
Park Dr
Corporate Ct
Hasty Dr
Kingsboro Dr
Windsor Dr
Mount Vernon Rd
Flood depths (in feet) for acquisition buildings in relation to their first-floor elevations
< -3, no damage
-3 to 0
0
500
1,000
FEET
N
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Figure E.4

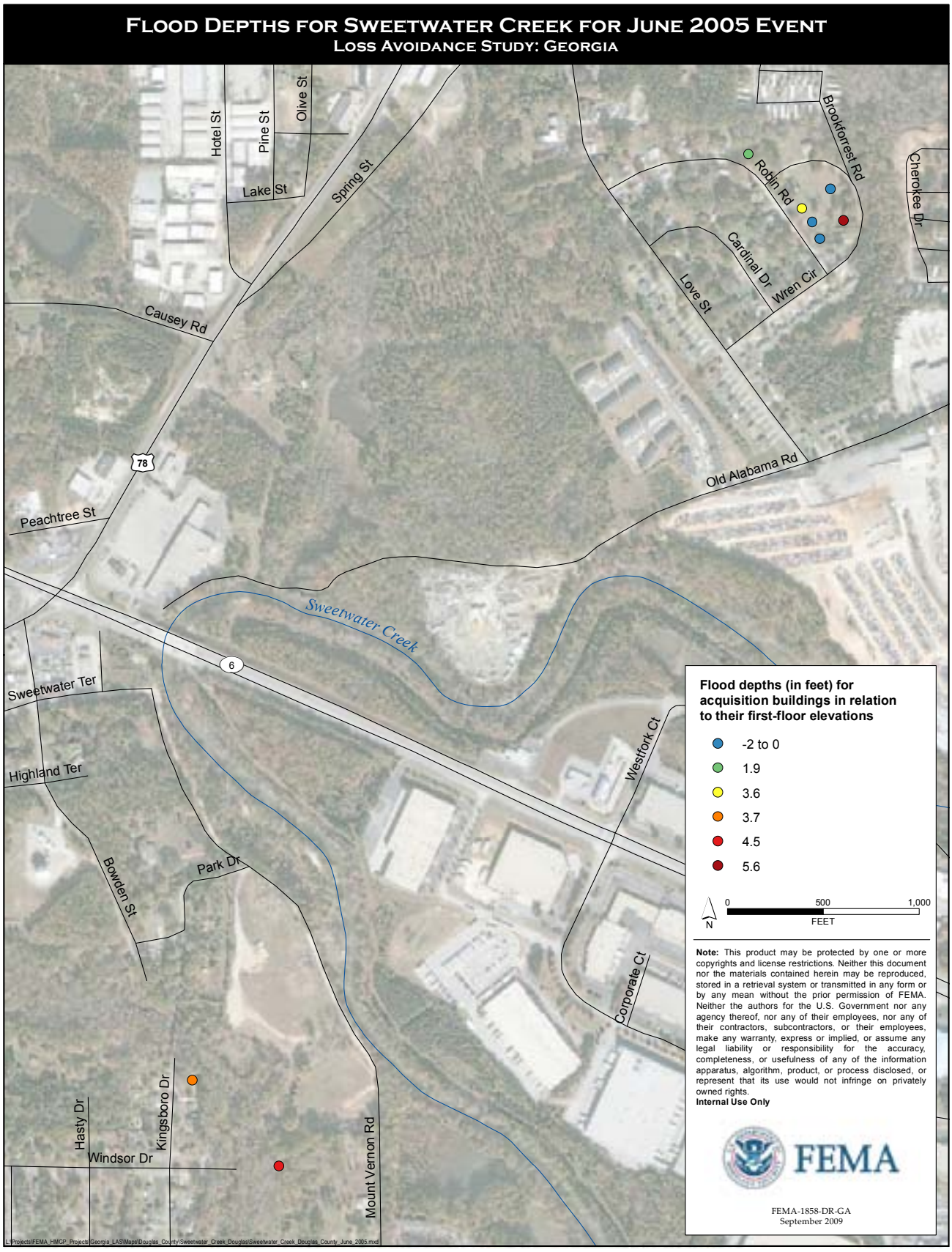
Flood Depths for Sweetwater Creek for June 2005 Event
Loss Avoidance Study: Georgia
Hotel St
Pine St
Olive St
Lake St
Spring St
Causey Rd
78
Peachtree St
Old Alabama Rd
Brookforest Rd
Robin Rd
Cherokee Dr
Cardinal Dr
Wren Cir
Love St
Sweetwater Creek
6
Sweetwater Ter
Highland Ter
Bowden St
Park Dr
Westfork Ct
Corporate Ct
Hasty Dr
Kingsboro Dr
Windsor Dr
Mount Vernon Rd
Flood depths (in feet) for acquisition buildings in relation to their first-floor elevations
-2 to 0
1.9
3.6
3.7
4.5
5.6
N
0
500
1,000
FEET
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Figure E.5

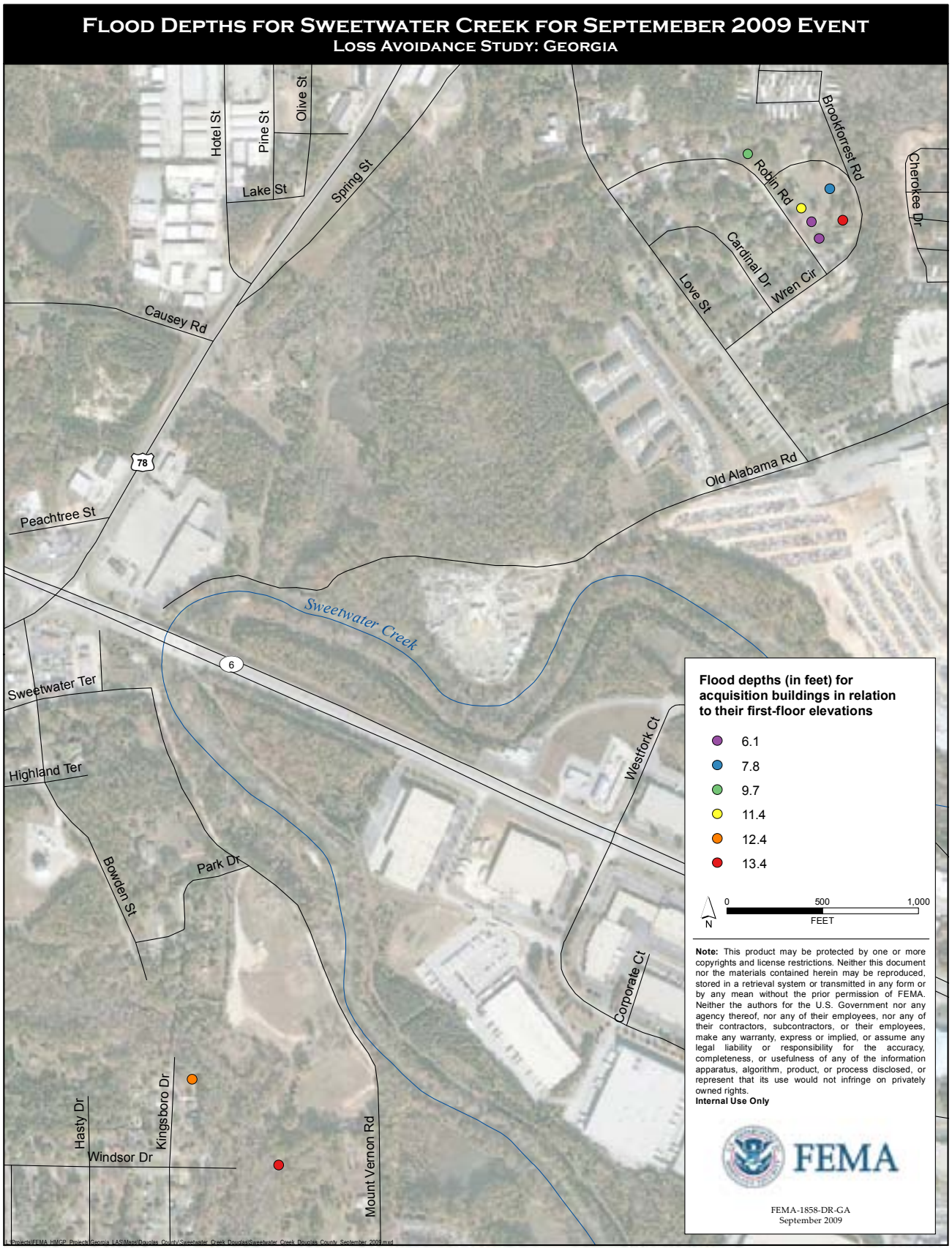
Flood Depths for Sweetwater Creek for Septemeber 2009 Event
Loss Avoidance Study: Georgia
Hotel St
Pine St
Olive St
Lake St
Spring St
Brookforrest Rd
Robin Rd
Cherokee Dr
Cardinal Dr
Wren Cir
Love St
Causey Rd
78
Old Alabama Rd
Peachtree St
Sweetwater Creek
6
Sweetwater Ter
Highland Ter
Westfork Ct
Bowden St
Park Dr
Corporate Ct
Hasty Dr
Kingsboro Dr
Windsor Dr
Mount Vernon Rd
Flood depths (in feet) for acquisition buildings in relation to their first-floor elevations
6.1
7.8
9.7
11.4
12.4
13.4
N
0
500
1,000
FEET
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Figure E.6

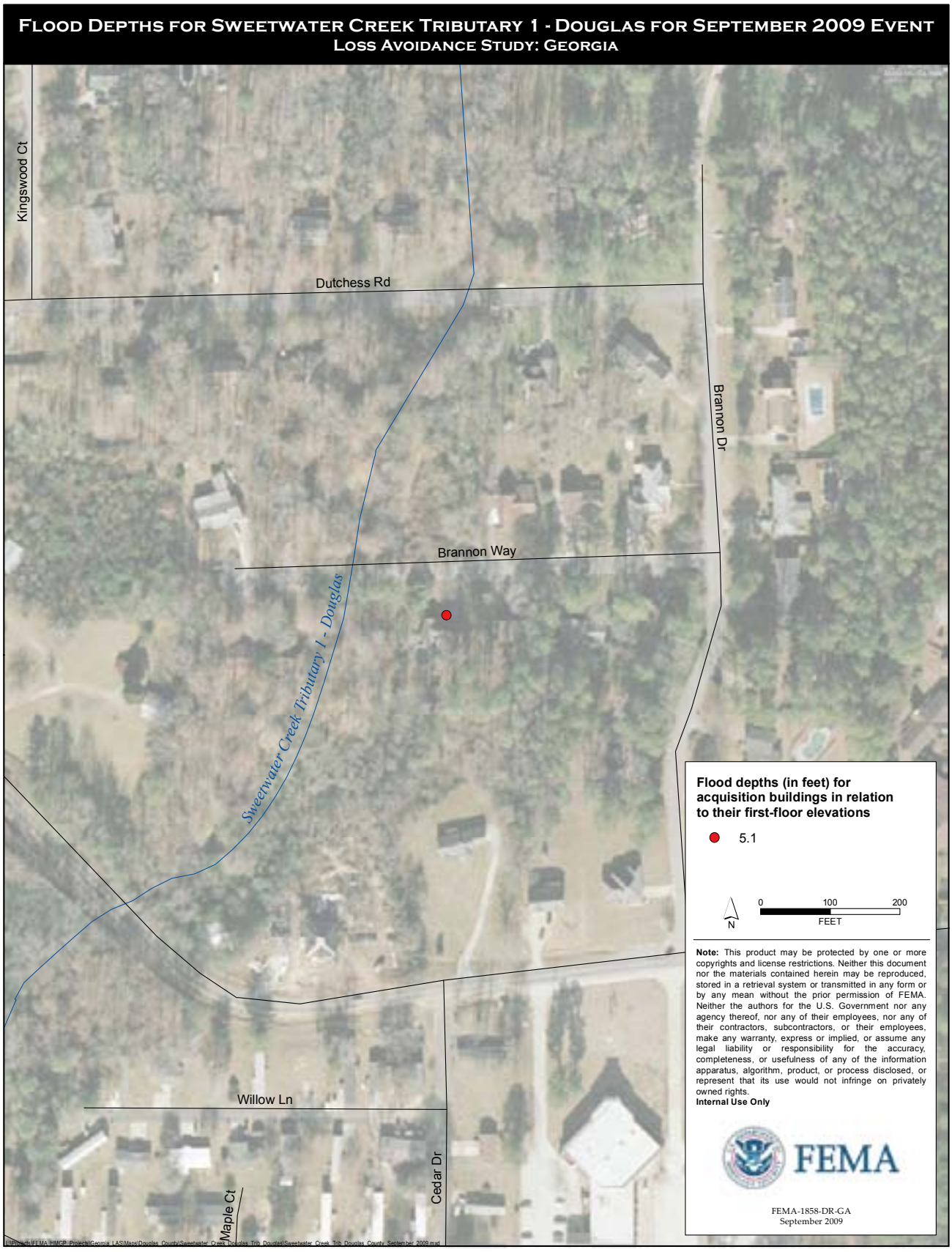
Flood Depths for Sweetwater Creek Tributary 1 - Douglas for September 2009 Event
Loss Avoidance Study: Georgia
Kingswood Ct
Dutchess Rd
Brannon Dr
Brannon Way
Sweetwater Creek Tributary 1 - Douglas
Willow Ln
Cedar Dr
Maple Ct
Flood depths (in feet) for acquisition buildings in relation to their first-floor elevations
5.1
N
0
100
200
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Table E.1

Summary of Losses Avoided and ROI Calculations in Douglas County for All Events

Building Number	Address	Mitigation Completion Date	2010 Value of Total Mitigation Cost	May-03 Losses Avoided	Jun-05 Losses Avoided	Sep-09 Losses Avoided	TOTAL LOSSES AVOIDED	ROI (%)
46	6805 Mt Vernon Rd, Lithia Springs, GA 30168	Aug-00	$ 61,168	$ -	$ 214,501	$ 276,515	$ 491,016	803%
47	110 Wren Circle, Austell, GA 30168	Aug-00	$ 66,755	$ 2,844	$ 129,469	$ 160,371	$ 292,684	438%
48	31 Robin Road, Austell, GA 30168	Aug-00	$ 64,621	$ -	$ 3,449	$ 80,526	$ 83,975	130%
49	25 Robin Road, Austell, GA 30168	Aug-00	$ 68,167	$ -	$ 79,069	$ 161,630	$ 240,700	353%
50	27 Robin Road, Austell, GA 30168	Aug-00	$ 73,406	$ -	$ 4,150	$ 131,250	$ 135,401	184%
51	106 Wren Circle, Austell, GA 30168	Aug-00	$ 76,630	$ -	$ 24,566	$ 144,816	$ 169,382	221%
139	698 Hasty Dr, Lithia Springs, GA 30057	Aug-00	$ 88,698	$ -	$ 120,855	$ 251,247	$ 372,102	420%
140	19 Robin Road, Austell, GA 30001	Aug-00	$ 67,196	$ -	$ 55,798	$ 156,857	$ 212,655	316%
186	7793 Mountain Creek Way, Douglasville, GA 30134	Nov-08	$ 123,980	$ -	$ -	$ 81,136	$ 81,136	65%
187	7788 Mountain Creek Way, Douglasville, GA 30134	Nov-08	$ 138,392	$ -	$ -	$ 132,966	$ 132,966	96%
188	7792 Mountain Creek Way, Douglasville, GA 30134	Nov-08	$ 107,041	$ -	$ -	$ 69,129	$ 69,129	65%
184	2001 Brannon Way, Lithia Springs, GA 30122	Dec-08	$ 199,050	$ -	$ -	$ 146,473	$ 146,473	74%
							TOTAL	
			Total Mitigation Costs:	$ 566,642	$ 566,642	$ 1,135,106	$ 1,135,106	
			Total Losses Avoided:	$ 2,844	$ 631,858	$ 1,792,917	$ 2,427,618	
			ROI:	**1%**	**112%**	**158%**	**214%**	

ROI = Return on Investment

Indicates property was not mitigated at time of the storm event.

Table E.2

Summary of Losses Avoided and ROI Calculations for Douglas County, May 2003 Event

No.	Disaster/ Proj No	Project Type	Address	Flooding Source	Mitigation Completion Date	Building Type	BRV (2010$)	FFE (ft, NGVD29)	WSE for Event (ft, NGVD29)	Final Flood Depth (ft)	Building Damage ($)	Contents Damage ($)	Displacement Cost ($)	Disruption Cost ($)	Debris Removal Services ($)	Reduced Insurance Transaction Cost ($)	Total Losses Avoided ($)	Total Project Investment (2010$)	ROI
46	1071-0008	Acquisition	6805 Mt Vernon Rd, Lithia Springs, GA 30168	Sweetwater Creek	8/25/2000	1 story w/o basement	$ 127,555.20	880.40	877.85	-2.55	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 61,168.35	0.0%
47	1071-0008	Acquisition	110 Wren Circle, Austell, GA 30168	Sweetwater Creek	8/25/2000	1 story w/o basement	$ 64,074.24	885.30	883.35	-1.95	$ 80.09	$ 76.89	$ -	$ 2,305.02	$ 6.92	$ 375.00	$ 2,843.92	$ 66,755.01	4.3%
48	1071-0008	Acquisition	31 Robin Road, Austell, GA 30168	Sweetwater Creek	8/25/2000	2 story w/o basement	$ 69,413.76	892.60	883.35	-9.25	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 64,620.88	0.0%
49	1071-0008	Acquisition	25 Robin Road, Austell, GA 30168	Sweetwater Creek	8/25/2000	1 story w/o basement	$ 67,633.92	887.30	883.35	-3.95	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 68,167.47	0.0%
50	1071-0008	Acquisition	27 Robin Road, Austell, GA 30168	Sweetwater Creek	8/25/2000	2 story w/o basement	$ 128,148.48	892.60	883.35	-9.25	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 73,406.06	0.0%
51	1071-0008	Acquisition	106 Wren Circle, Austell, GA 30168	Sweetwater Creek	8/25/2000	2 story w/o basement	$ 115,541.28	890.90	883.35	-7.55	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 76,630.11	0.0%
139	1071-0008	Acquisition	698 Hasty Dr, Lithia Springs, GA 30057	Sweetwater Creek	8/25/2000	1 story w/o basement	$ 116,997.70	881.40	878.10	-3.30	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 88,698.48	0.0%
140	1071-0008	Acquisition	19 Robin Road, Austell, GA 30001	Sweetwater Creek	8/25/2000	1 story w/o basement	$ 68,227.20	889.00	883.35	-5.65	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 67,195.82	0.0%
186	PDM-2007-PJ3	Acquisition	7793 Mountain Creek Way, Douglasville, GA 30134	Huey Creek	11/21/2008	2 story w/o basement	$ 144,954.52	992.58											
187	PDM-2007-PJ3	Acquisition	7788 Mountain Creek Way, Douglasville, GA 30134	Huey Creek	11/21/2008	2 story w/o basement	$ 147,200.96	993.81											
188	PDM-2007-PJ3	Acquisition	7792 Mountain Creek Way, Douglasville, GA 30134	Huey Creek	11/21/2008	2 story w/o basement	$ 130,530.00	994.69											
184	PDM-2007-PJ3	Acquisition	2001 Brannon Way, Lithia Springs, GA 30122	Sweetwater Creek Tributary 1 - Douglas	12/5/2008	2 story w/o basement	$ 181,155.58	888.67											
										TOTAL	**$ 80.09**	**$ 76.89**	**$ -**	**$ 2,305.02**	**$ 6.92**	**$ 375.00**	**$ 2,843.92**	**$ 566,642.18**	**0.50%**

BRV = building replacement value
FFE = first floor elevation
ft = feet
NGVD29 = National Geodetic Vertical Datum of 1929
ROI = Return on Investment
WSE = water surface elevation

Indicates property was not mitigated at time of the storm event.

Table E.3

Summary of Losses Avoided and ROI Calculations for Douglas County, June 2005 Event

No.	Disaster/ Proj No	Project Type	Address	Flooding Source	Mitigation Completion Date	Building Type	BRV (2010$)	FFE (ft, NGVD29)	WSE for Event (ft, NGVD29)	Final Flood Depth (ft)	Building Damage ($)	Contents Damage ($)	Displacement Cost ($)	Disruption Cost ($)	Debris Removal Services ($)	Reduced Insurance Transaction Cost ($)	Total Losses Avoided ($)	Total Project Investment (2010$)	ROI
46	1071-0008	Acquisition	6805 Mt Vernon Rd, Lithia Springs, GA 30168	Sweetwater Creek	8/25/2000	1 story w/o basement	$ 127,555.20	880.40	884.88	4.48	$ 127,555.20	$ 34,679.71	$ 16,416.09	$ 24,749.39	$ 11,100.88	$ -	$ 214,501.28	$ 61,168.35	350.7%
47	1071-0008	Acquisition	110 Wren Circle, Austell, GA 30168	Sweetwater Creek	8/25/2000	1 story w/o basement	$ 64,074.24	885.30	890.88	5.58	$ 64,074.24	$ 19,456.78	$ 10,270.97	$ 27,584.68	$ 5,576.26	$ 2,505.93	$ 129,468.86	$ 66,755.01	193.9%
48	1071-0008	Acquisition	31 Robin Road, Austell, GA 30168	Sweetwater Creek	8/25/2000	2 story w/o basement	$ 69,413.76	892.60	890.88	-1.72	$ 583.08	$ 194.36	$ -	$ 2,626.60	$ 45.32	$ -	$ 3,449.36	$ 64,620.88	5.3%
49	1071-0008	Acquisition	25 Robin Road, Austell, GA 30168	Sweetwater Creek	8/25/2000	1 story w/o basement	$ 67,633.92	887.30	890.88	3.58	$ 29,867.14	$ 16,330.89	$ 6,955.71	$ 22,110.20	$ 2,405.52	$ 1,400.00	$ 79,069.46	$ 68,167.47	116.0%
50	1071-0008	Acquisition	27 Robin Road, Austell, GA 30168	Sweetwater Creek	8/25/2000	2 story w/o basement	$ 128,148.48	892.60	890.88	-1.72	$ 1,076.45	$ 358.82	$ -	$ 2,626.60	$ 88.26	$ -	$ 4,150.12	$ 73,406.06	5.7%
51	1071-0008	Acquisition	106 Wren Circle, Austell, GA 30168	Sweetwater Creek	8/25/2000	2 story w/o basement	$ 115,541.28	890.90	890.88	-0.02	$ 10,599.76	$ 5,684.63	$ -	$ 6,374.90	$ 881.29	$ 1,025.00	$ 24,565.58	$ 76,630.11	32.1%
139	1071-0008	Acquisition	698 Hasty Dr, Lithia Springs, GA 30057	Sweetwater Creek	8/25/2000	1 story w/o basement	$ 116,997.70	881.40	885.13	3.73	$ 52,894.66	$ 28,899.60	$ 12,197.77	$ 22,582.45	$ 4,280.36	$ -	$ 120,854.84	$ 88,698.48	136.3%
140	1071-0008	Acquisition	19 Robin Road, Austell, GA 30001	Sweetwater Creek	8/25/2000	1 story w/o basement	$ 68,227.20	889.00	890.88	1.88	$ 21,180.45	$ 11,836.05	$ 3,684.76	$ 16,211.15	$ 1,710.70	$ 1,175.00	$ 55,798.12	$ 67,195.82	83.0%
186	PDM-2007-PJ3	Acquisition	7793 Mountain Creek Way, Douglasville, GA 30134	Huey Creek	11/21/2008	2 story w/o basement	$ 144,954.52	992.58											
187	PDM-2007-PJ3	Acquisition	7788 Mountain Creek Way, Douglasville, GA 30134	Huey Creek	11/21/2008	2 story w/o basement	$ 147,200.96	993.81											
188	PDM-2007-PJ3	Acquisition	7792 Mountain Creek Way, Douglasville, GA 30134	Huey Creek	11/21/2008	2 story w/o basement	$ 130,530.00	994.69											
184	PDM-2007-PJ3	Acquisition	2001 Brannon Way, Lithia Springs, GA 30122	Sweetwater Creek Tributary 1 - Douglas	12/5/2008	2 story w/o basement	$ 181,155.58	888.67											
										TOTAL	$ 307,830.97	$ 117,440.84	$ 49,525.30	$ 124,865.97	$ 26,088.59	$ 6,105.93	$ 631,857.61	$ 566,642.18	111.51%

BRV = building replacement value
FFE = first floor elevation
ft = feet
NGVD29 = National Geodetic Vertical Datum of 1929
ROI = Return on Investment
WSE = water surface elevation

Indicates property was not mitigated at time of the storm event.

Table E.4

Summary of Losses Avoided and ROI Calculations for Douglas County, September 2009 Event

No.	Disaster/ Proj No	Project Type	Address	Flooding Source	Mitigation Completion Date	Building Type	BRV (2010$)	FFE (ft, NGVD29)	WSE for Event (ft, NGVD29)	Final Flood Depth (ft)	Building Damage ($)	Contents Damage ($)	Displacement Cost ($)	Disruption Cost ($)	Debris Removal Services ($)	Reduced Insurance Transaction Cost ($)	Total Losses Avoided ($)	Total Project Investment (2010$)	ROI
46	1071-0008	Acquisition	6805 Mt Vernon Rd, Lithia Springs, GA 30168	Sweetwater Creek	8/25/2000	1 story w/o basement	$ 127,555.20	880.40	893.80	13.40	$ 127,555.20	$ 51,022.08	$ 49,101.71	$ 37,734.86	$ 11,100.88	$ -	$ 276,514.74	$ 61,168.35	452.1%
47	1071-0008	Acquisition	110 Wren Circle, Austell, GA 30168	Sweetwater Creek	8/25/2000	1 story w/o basement	$ 64,074.24	885.30	898.70	13.40	$ 64,074.24	$ 25,629.70	$ 24,665.05	$ 37,734.86	$ 5,576.26	$ 2,691.12	$ 160,371.22	$ 66,755.01	240.2%
48	1071-0008	Acquisition	31 Robin Road, Austell, GA 30168	Sweetwater Creek	8/25/2000	2 story w/o basement	$ 69,413.76	892.60	898.70	6.10	$ 28,542.94	$ 16,756.48	$ 12,163.79	$ 20,742.93	$ 2,319.65	$ -	$ 80,525.80	$ 64,620.88	124.6%
49	1071-0008	Acquisition	25 Robin Road, Austell, GA 30168	Sweetwater Creek	8/25/2000	1 story w/o basement	$ 67,633.92	887.30	898.70	11.40	$ 67,633.92	$ 26,647.76	$ 22,149.46	$ 36,484.53	$ 5,886.05	$ 2,828.45	$ 161,630.17	$ 68,167.47	237.1%
50	1071-0008	Acquisition	27 Robin Road, Austell, GA 30168	Sweetwater Creek	8/25/2000	2 story w/o basement	$ 128,148.48	892.60	898.70	6.10	$ 52,694.65	$ 30,935.04	$ 22,456.24	$ 20,742.93	$ 4,421.53	$ -	$ 131,250.39	$ 73,406.06	178.8%
51	1071-0008	Acquisition	106 Wren Circle, Austell, GA 30168	Sweetwater Creek	8/25/2000	2 story w/o basement	$ 115,541.28	890.90	898.70	7.80	$ 55,482.92	$ 32,328.45	$ 25,889.61	$ 23,846.28	$ 4,634.56	$ 2,634.34	$ 144,816.16	$ 76,630.11	189.0%
139	1071-0008	Acquisition	698 Hasty Dr, Lithia Springs, GA 30057	Sweetwater Creek	8/25/2000	1 story w/o basement	$ 116,997.70	881.40	893.80	12.40	$ 116,997.70	$ 46,588.48	$ 40,550.24	$ 37,204.15	$ 9,906.89	$ -	$ 251,247.46	$ 88,698.48	283.3%
140	1071-0008	Acquisition	19 Robin Road, Austell, GA 30001	Sweetwater Creek	8/25/2000	1 story w/o basement	$ 68,227.20	889.00	898.70	9.70	$ 68,227.20	$ 25,953.63	$ 19,011.79	$ 34,901.38	$ 5,937.68	$ 2,825.42	$ 156,857.10	$ 67,195.82	233.4%
186	PDM-2007-PJ3	Acquisition	7793 Mountain Creek Way, Douglasville, GA 30134	Huey Creek	11/21/2008	2 story w/o basement	$ 144,954.52	992.58	995.30	2.72	$ 35,931.33	$ 21,128.57	$ 7,104.32	$ 13,397.45	$ 1,862.51	$ 1,711.80	$ 81,135.98	$ 123,979.87	65.4%
187	PDM-2007-PJ3	Acquisition	7788 Mountain Creek Way, Douglasville, GA 30134	Huey Creek	11/21/2008	2 story w/o basement	$ 147,200.96	993.81	999.70	5.89	$ 59,182.14	$ 34,760.03	$ 15,622.41	$ 20,331.40	$ 3,069.95	$ -	$ 132,965.94	$ 138,392.48	96.1%
188	PDM-2007-PJ3	Acquisition	7792 Mountain Creek Way, Douglasville, GA 30134	Huey Creek	11/21/2008	2 story w/o basement	$ 130,530.00	994.69	997.10	2.41	$ 30,170.71	$ 17,690.73	$ 5,668.26	$ 12,644.55	$ 1,554.36	$ 1,400.00	$ 69,128.61	$ 107,041.19	64.6%
184	PDM-2007-PJ3	Acquisition	2001 Brannon Way, Lithia Springs, GA 30122	Sweetwater Creek Tributary 1 - Douglas	12/5/2008	2 story w/o basement	$ 181,155.58	888.67	893.80	5.13	$ 66,638.08	$ 39,198.44	$ 18,065.65	$ 18,793.22	$ 3,777.76	$ -	$ 146,473.15	$ 199,049.99	73.6%
										TOTAL	**$ 773,131.03**	**$ 368,639.41**	**$ 262,448.52**	**$ 314,558.55**	**$ 60,048.08**	**$ 14,091.13**	**$ 1,792,916.71**	**$ 1,135,105.73**	**157.95%**

BRV = building replacement value
FFE = first floor elevation
ft = feet
NGVD29 = National Geodetic Vertical Datum of 1929
ROI = Return on Investment
WSE = water surface elevation

Indicates property was not mitigated at time of the storm event.

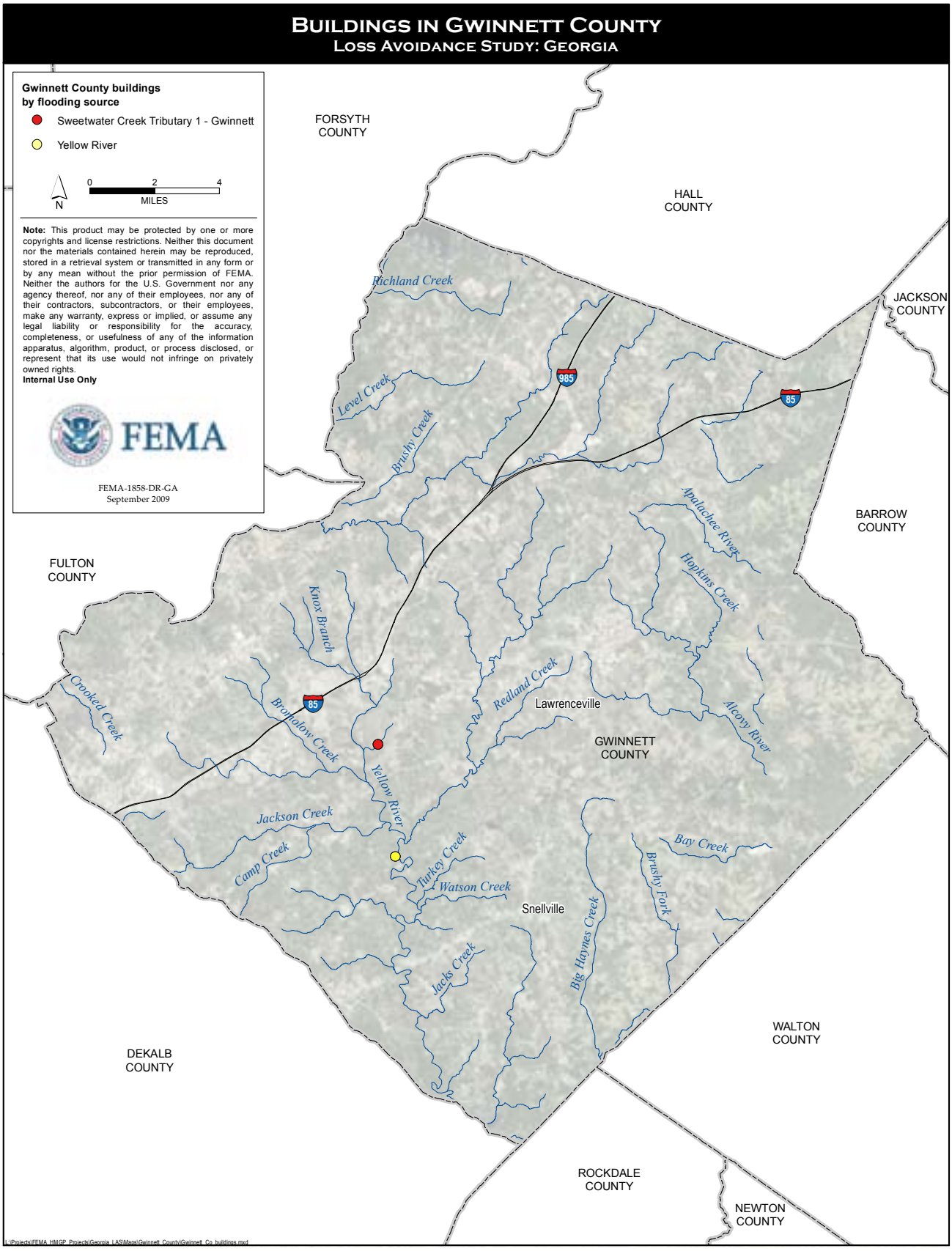
Appendix F

Gwinnett County: Summary of Losses Avoided and Return on Investment Calculations

List of Figures and Tables

Note: Event-specific maps depict only buildings that were included in the analysis of that event

Figure F.1


BUILDINGS IN GWINNETT COUNTY
LOSS AVOIDANCE STUDY: GEORGIA
Gwinnett County buildings by flooding source
Sweetwater Creek Tributary 1 - Gwinnett
Yellow River
N
0 2 4
MILES
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FORSYTH COUNTY
HALL COUNTY
JACKSON COUNTY
BARROW COUNTY
FULTON COUNTY
GWINNETT COUNTY
DEKALB COUNTY
WALTON COUNTY
ROCKDALE COUNTY
NEWTON COUNTY
Lawrenceville
Snellville
Richland Creek
Level Creek
Brushy Creek
Apalachee River
Hopkins Creek
Knox Branch
Crooked Creek
Broughton Creek
Redland Creek
Alcovy River
Yellow River
Jackson Creek
Camp Creek
Turkey Creek
Watson Creek
Bay Creek
Brushy Fork
Big Haynes Creek
Jacks Creek
85
985
L:\Projects\FEMA_HMGP_Projects\Georgia_LAS\Maps\Gwinnett_County\Gwinnett_Co_buildings.mxd

Figure F.2


Flood Depths for Yellow River for May 2003 Event
Loss Avoidance Study: Georgia
Tamer Ln
Yellow River
Finger Creek
Wentworth Ln
Flood depths (in feet) for acquisition buildings in relation to their first-floor elevations
17.3
N
0
50
100
FEET
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Figure F.3


Flood Depths for Yellow River for July 2005 Event
Loss Avoidance Study: Georgia
Tamer Ln
Yellow River
Finger Creek
Wentworth Ln
Flood depths (in feet) for acquisition buildings in relation to their first-floor elevations
18
N
0
50
100
FEET
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Figure F.4


Flood Depths for Yellow River for October 2005 Event
Loss Avoidance Study: Georgia
Tamer Ln
Yellow River
Finger Creek
Wentworth Ln
Flood depths (in feet) for acquisition buildings in relation to their first-floor elevations
9.2
N
0
50
100
FEET
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Figure F.5


Flood Depths for Yellow River for November 2006 Event
Loss Avoidance Study: Georgia
Tamer Ln
Yellow River
Finger Creek
Wentworth Ln
Flood depths (in feet) for acquisition buildings in relation to their first-floor elevations
8
N
0
50
100
FEET
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Figure F.6


Flood Depths for Yellow River for August 2008 Event
Loss Avoidance Study: Georgia
Tamer Ln
Yellow River
Finger Creek
Wentworth Ln
Flood depths (in feet) for acquisition buildings in relation to their first-floor elevations
6.6
N
0
50
100
FEET
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Figure F.7


Flood Depths for Yellow River for September 2009 Event
Loss Avoidance Study: Georgia
Tamer Ln
Yellow River
Finger Creek
Wentworth Ln
Flood depths (in feet) for acquisition buildings in relation to their first-floor elevations
27.7
N
0
50
100
FEET
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Figure F.8


Flood Depths for Sweetwater Creek Tributary 1 - Gwinnett for September 2009 Event
Loss Avoidance Study: Georgia
Park Creek Cir
Meadowview Ln
Sweetwater Creek Tributary 1
Cruse Rd
Ferrite Ct
Martin Heights Dr
Ferrite Loop
Flood depths (in feet) for acquisition buildings in relation to their first-floor elevations
3.8
N
0
100
200
FEET
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Table F.1

Summary of Losses Avoided and ROI Calculations in Gwinnett County for All Events

Building Number	Address	Mitigation Completion Date	2010 Value of Total Mitigation Cost	May-03 Losses Avoided	Jul-05 Losses Avoided	Oct-05 Losses Avoided	Nov-06 Losses Avoided	Aug-08 Losses Avoided	Sep-09 Losses Avoided	TOTAL LOSSES AVOIDED	ROI (%)
150	3693 Finger Creek Dr, Lilburn, GA 30247	Aug-02	$ 130,351	$ 304,937	$ 304,937	$ 252,952	$ 170,554	$ 148,401	$ 304,937	$ 1,486,719	1141%
149	876 Martin Heights Dr, Lawrenceville, GA 30044	Apr-08	$ 168,239	$ -	$ -	$ -	$ -	$ -	$ 190,730	$ 190,730	113%
										TOTAL	
			Total Mitigation Costs:	$ 130,351	$ 130,351	$ 130,351	$ 130,351	$ 298,589	$ 298,589	$ 298,589	
			Total Losses Avoided:	$ 304,937	$ 304,937	$ 252,952	$ 170,554	$ 148,401	$ 495,667	$ 1,677,449	
			ROI:	**234%**	**234%**	**194%**	**131%**	**50%**	**166%**	**562%**	

ROI = Return on Investment

Indicates property was not mitigated at time of the storm event.

Table F.2

Summary of Losses Avoided and ROI Calculations for Gwinnett County, May 2003 Event

No.	Disaster/ Proj No	Project Type	Address	Flooding Source	Mitigation Completion Date	Building Type	BRV (2010$)	FFE (ft, NGVD29)	WSE for Event (ft, NGVD29)	Final Flood Depth (ft)	Building Damage ($)	Contents Damage ($)	Displacement Cost ($)	Disruption Cost ($)	Debris Removal Services ($)	Reduced Insurance Transaction Cost ($)	Total Losses Avoided ($)	Total Project Investment (2010$)	ROI
150	1311-0004	Acquisition	3693 Finger Creek Dr, Lilburn, GA 30247	Yellow River	8/29/2002	2 story w/o basement	$ 120,695.40	838.00	855.34	17.34	$ 120,695.40	$ 44,898.69	$ 85,898.17	$ 33,372.19	$ 16,264.08	$ 3,808.66	$ 304,937.19	$ 130,350.64	233.9%
149	FMA-2005-PJ1	Acquisition	876 Martin Heights Dr, Lawrenceville, GA 30044	Sweetwater Creek Tributary 1 - Gwinnett	4/23/2008	1 story w/o basement	$ 210,409.43	870.00											
										TOTAL	$ 120,695.40	$ 44,898.69	$ 85,898.17	$ 33,372.19	$ 16,264.08	$ 3,808.66	$ 304,937.19	$ 130,350.64	233.94%

BRV = building replacement value
FFE = first floor elevation
ft = feet
NGVD29 = National Geodetic Vertical Datum of 1929
ROI = Return on Investment
WSE = water surface elevation

Indicates property was not mitigated at time of the storm event.

Table F.3

Summary of Losses Avoided and ROI Calculations for Gwinnett County, July 2005 Event

No.	Disaster/ Proj No	Project Type	Address	Flooding Source	Mitigation Completion Date	Building Type	BRV (2010$)	FFE (ft, NGVD29)	WSE for Event (ft, NGVD29)	Final Flood Depth (ft)	Building Damage ($)	Contents Damage ($)	Displacement Cost ($)	Disruption Cost ($)	Debris Removal Services ($)	Reduced Insurance Transaction Cost ($)	Total Losses Avoided ($)	Total Project Investment (2010$)	ROI
150	1311-0004	Acquisition	3693 Finger Creek Dr, Lilburn, GA 30247	Yellow River	8/29/2002	2 story w/o basement	$ 120,695.40	838.00	856.03	18.03	$ 120,695.40	$ 44,898.69	$ 85,898.17	$ 33,372.19	$ 16,264.08	$ 3,808.66	$ 304,937.19	$ 130,350.64	233.9%
149	FMA-2005-PJ1	Acquisition	876 Martin Heights Dr, Lawrenceville, GA 30044	Sweetwater Creek Tributary 1 - Gwinnett	4/23/2008	1 story w/o basement	$ 210,409.43	870.00											
										TOTAL	$ 120,695.40	$ 44,898.69	$ 85,898.17	$ 33,372.19	$ 16,264.08	$ 3,808.66	$ 304,937.19	$ 130,350.64	233.94%

BRV = building replacement value
FFE = first floor elevation
ft = feet
NGVD29 = National Geodetic Vertical Datum of 1929
ROI = Return on Investment
WSE = water surface elevation

Indicates property was not mitigated at time of the storm event.

Table F.4

Summary of Losses Avoided and ROI Calculations for Gwinnett County, October 2005 Event

No.	Disaster/ Proj No	Project Type	Address	Flooding Source	Mitigation Completion Date	Building Type	BRV (2010$)	FFE (ft, NGVD29)	WSE for Event (ft, NGVD29)	Final Flood Depth (ft)	Building Damage ($)	Contents Damage ($)	Displacement Cost ($)	Disruption Cost ($)	Debris Removal Services ($)	Reduced Insurance Transaction Cost ($)	Total Losses Avoided ($)	Total Project Investment (2010$)	ROI
150	1311-0004	Acquisition	3693 Finger Creek Dr, Lilburn, GA 30247	Yellow River	8/29/2002	2 story w/o basement	$ 120,695.40	838.00	847.19	9.19	$ 120,695.40	$ 36,953.71	$ 49,319.87	$ 26,093.28	$ 16,264.08	$ 3,625.93	$ 252,952.26	$ 130,350.64	194.1%
149	FMA-2005-PJ1	Acquisition	876 Martin Heights Dr, Lawrenceville, GA 30044	Sweetwater Creek Tributary 1 - Gwinnett	4/23/2008	1 story w/o basement	$ 210,409.43	870.00											
										TOTAL	$ 120,695.40	$ 36,953.71	$ 49,319.87	$ 26,093.28	$ 16,264.08	$ 3,625.93	$ 252,952.26	$ 130,350.64	194.06%

BRV = building replacement value
FFE = first floor elevation
ft = feet
NGVD29 = National Geodetic Vertical Datum of 1929
ROI = Return on Investment
WSE = water surface elevation

Indicates property was not mitigated at time of the storm event.

Table F.5

Summary of Losses Avoided and ROI Calculations for Gwinnett County, November 2006 Event

No.	Disaster/ Proj No	Project Type	Address	Flooding Source	Mitigation Completion Date	Building Type	BRV (2010$)	FFE (ft, NGVD29)	WSE for Event (ft, NGVD29)	Final Flood Depth (ft)	Building Damage ($)	Contents Damage ($)	Displacement Cost ($)	Disruption Cost ($)	Debris Removal Services ($)	Reduced Insurance Transaction Cost ($)	Total Losses Avoided ($)	Total Project Investment (2010$)	ROI
150	1311-0004	Acquisition	3693 Finger Creek Dr, Lilburn, GA 30247	Yellow River	8/29/2002	2 story w/o basement	$ 120,695.40	838.00	845.98	7.98	$ 58,805.21	$ 34,226.80	$ 42,841.71	$ 24,162.01	$ 7,727.04	$ 2,790.96	$ 170,553.73	$ 130,350.64	130.8%
149	FMA-2005-PJ1	Acquisition	876 Martin Heights Dr, Lawrenceville, GA 30044	Sweetwater Creek Tributary 1 - Gwinnett	4/23/2008	1 story w/o basement	$ 210,409.43	870.00											
										TOTAL	$ 58,805.21	$ 34,226.80	$ 42,841.71	$ 24,162.01	$ 7,727.04	$ 2,790.96	$ 170,553.73	$ 130,350.64	130.84%

BRV = building replacement value
FFE = first floor elevation
ft = feet
NGVD29 = National Geodetic Vertical Datum of 1929
ROI = Return on Investment
WSE = water surface elevation

Indicates property was not mitigated at time of the storm event.

Table F.6

Summary of Losses Avoided and ROI Calculations for Gwinnett County, August 2008 Event

No.	Disaster/ Proj No	Project Type	Address	Flooding Source	Mitigation Completion Date	Building Type	BRV (2010$)	FFE (ft, NGVD29)	WSE for Event (ft, NGVD29)	Final Flood Depth (ft)	Building Damage ($)	Contents Damage ($)	Displacement Cost ($)	Disruption Cost ($)	Debris Removal Services ($)	Reduced Insurance Transaction Cost ($)	Total Losses Avoided ($)	Total Project Investment (2010$)	ROI
150	1311-0004	Acquisition	3693 Finger Creek Dr, Lilburn, GA 30247	Yellow River	8/29/2002	2 story w/o basement	$ 120,695.40	838.00	844.55	6.55	$ 51,911.09	$ 30,439.38	$ 35,164.56	$ 21,592.98	$ 6,822.96	$ 2,470.51	$ 148,401.48	$ 130,350.64	113.8%
149	FMA-2005-PJ1	Acquisition	876 Martin Heights Dr, Lawrenceville, GA 30044	Sweetwater Creek Tributary 1 - Gwinnett	4/23/2008	1 story w/o basement	$ 210,409.43	870.00								$ -	$ -	$ 168,238.58	0.0%
										TOTAL	$ 51,911.09	$ 30,439.38	$ 35,164.56	$ 21,592.98	$ 6,822.96	$ 2,470.51	$ 148,401.48	$ 298,589.22	49.70%

BRV = building replacement value
FFE = first floor elevation
ft = feet
NGVD29 = National Geodetic Vertical Datum of 1929
ROI = Return on Investment
WSE = water surface elevation

Table F.7

Summary of Losses Avoided and ROI Calculations for Gwinnett County, September 2009 Event

No.	Disaster/ Proj No	Project Type	Address	Flooding Source	Mitigation Completion Date	Building Type	BRV (2010$)	FFE (ft, NGVD29)	WSE for Event (ft, NGVD29)	Final Flood Depth (ft)	Building Damage ($)	Contents Damage ($)	Displacement Cost ($)	Disruption Cost ($)	Debris Removal Services ($)	Reduced Insurance Transaction Cost ($)	Total Losses Avoided ($)	Total Project Investment (2010$)	ROI
150	1311-0004	Acquisition	3693 Finger Creek Dr, Lilburn, GA 30247	Yellow River	8/29/2002	2 story w/o basement	$ 120,695.40	838.00	865.67	27.67	$ 120,695.40	$ 44,898.69	$ 85,898.17	$ 33,372.19	$ 16,264.08	$ 3,808.66	$ 304,937.19	$ 130,350.64	233.9%
149	FMA-2005-PJ1	Acquisition	876 Martin Heights Dr, Lawrenceville, GA 30044	Sweetwater Creek Tributary 1 - Gwinnett	4/23/2008	1 story w/o basement	$ 210,409.43	870.00	873.83	3.83	$ 96,598.97	$ 52,751.75	$ 15,462.20	$ 22,897.28	$ 3,019.45	$ -	$ 190,729.65	$ 168,238.58	113.4%
										TOTAL	**$ 217,294.37**	**$ 97,650.44**	**$ 101,360.37**	**$ 56,269.47**	**$ 19,283.53**	**$ 3,808.66**	**$ 495,666.85**	**$ 298,589.22**	**166.00%**

BRV = building replacement value
FFE = first floor elevation
ft = feet
NGVD29 = National Geodetic Vertical Datum of 1929
ROI = Return on Investment
WSE = water surface elevation

Appendix G

Loss Estimation and Return on Investment Summary Tables

List of Tables

Table G.1

Return On Investment and Loss Estimation Results by Disaster and Project Number

Analysis Information			Results by Loss Category									
County	Disaster/ Project Number	Number of Buildings Included in Analysis	Building Damage	Contents Damage	Displacement Costs	Disruption Costs	Debris Removal Services	Reduced Insurance Transaction Costs	Total Losses Avoided (2010 Dollars)	Total Project Investment (2010 Dollars)	Project ROI	County ROI
Chattooga	1857-005; 1020-001	1	$ 1,527,694	$ 554,923	$ -	$ -	$ 11,832	$ 43,735	$ 2,138,183	$ 6,428,806	33%	**33%**
Cobb	1033-0123	34	$ 2,440,139	$ 1,125,304	$ 503,088	$ 478,197	$ 86,921	$ 42,986	$ 4,676,635	$ 5,561,207	84%	**110%**
	1554-0006	12	$ 1,497,572	$ 555,439	$ 403,935	$ 413,904	$ 101,207	$ 20,833	$ 2,992,890	$ 970,794	308%	
	1560-0006	10	$ 826,696	$ 308,428	$ 105,039	$ 247,354	$ 50,500	$ 14,838	$ 1,552,856	$ 1,210,732	128%	
	FMA-2001-PJ8	1	$ 26,298	$ 13,624	$ 6,507	$ 6,747	$ 912	$ 1,400	$ 55,489	$ 186,543	30%	
	FMA-2002-PJ1	1	$ 46,339	$ 26,887	$ 8,464	$ 10,677	$ 1,611	$ 2,197	$ 96,175	$ 170,991	56%	
	FMA-2002-PJ2	1	$ 44,440	$ 25,778	$ 8,077	$ 10,636	$ 1,543	$ -	$ 90,474	$ 168,632	54%	
	FMA-2006-PJ6	2	$ 6,494	$ 2,458	$ -	$ 5,329	$ 293	$ 800	$ 15,373	$ 359,723	4%	
DeKalb	1071-004	6	$ 384,175	$ 213,047	$ 70,105	$ 124,909	$ 19,994	$ 10,234	$ 822,464	$ 876,792	94%	**36%**
	1209-0017	1	$ 348,640	$ 202,405	$ 95,999	$ 63,649	$ 14,417	$ 13,901	$ 739,012	$ 267,446	276%	
	1209-0042	22	$ 1,926,137	$ 1,037,527	$ 443,312	$ 510,461	$ 102,562	$ 54,357	$ 4,074,355	$ 5,375,990	76%	
	1209-059	4	$ 333,784	$ 156,469	$ 58,163	$ 99,156	$ 18,820	$ 9,362	$ 675,755	$ 1,099,292	61%	
	FMA-2007-PJ2	8	$ 766,348	$ 326,464	$ 152,497	$ 125,118	$ 32,599	$ 15,051	$ 1,418,077	$ 2,960,461	48%	
	FMA-PJ-04-GA-2006-005	3	$ 67,186	$ 37,450	$ 7,360	$ 17,249	$ 4,086	$ 3,000	$ 136,331	$ 1,001,521	14%	
	PDM-2005-PJ2	15	$ 105,960	$ 53,941	$ 16,011	$ 67,474	$ 6,482	$ 5,600	$ 255,468	$ 3,714,211	7%	
	PDM-2005-PJ5	1	$ 233,639	$ 137,563	$ 36,326	$ 13,777	$ 8,739	$ -	$ 430,044	$ 1,547,534	28%	
	PDMC-PJ-04-2005-001	3	$ 879,265	$ 517,283	$ 127,467	$ 45,688	$ 29,518	$ 11,062	$ 1,610,283	$ 3,999,120	40%	
	PDMC-PJ-04-GA-2007-001	4	$ 23,581	$ 14,782	$ -	$ 14,617	$ 1,048	$ 1,200	$ 55,228	$ 1,754,056	3%	
	PDMC-PJ-04-GA-2007-005	11	$ 26,786	$ 19,773	$ -	$ 22,154	$ 920	$ 2,200	$ 71,833	$ 3,760,994	2%	
	PDMC-PJ-04-GA-2007-006	1	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 201,777	0%	
	PDM-PJ-04-GA-2006-002	9	$ 344,677	$ 200,608	$ 70,245	$ 100,173	$ 11,817	$ 9,556	$ 737,075	$ 3,030,706	24%	
	RFC-2007	1	$ 1,165	$ 1,119	$ -	$ 2,530	$ 35	$ 600	$ 5,448	$ 355,911	2%	
	RFC-PJ-04-GA-001	1	$ 68,343	$ 40,069	$ 17,016	$ 12,620	$ 2,711	$ -	$ 140,760	$ 369,513	38%	
	RFC-PJ-04-GA-2006-001	6	$ 254,317	$ 146,402	$ 46,522	$ 60,499	$ 15,672	$ 7,682	$ 531,093	$ 2,078,922	26%	
Douglas	1071-0008	8	$ 889,120	$ 373,379	$ 265,513	$ 376,563	$ 75,879	$ 17,460	$ 1,997,915	$ 566,642	353%	**214%**
	PDM-2007-PJ3	4	$ 191,922	$ 112,778	$ 46,461	$ 65,167	$ 10,265	$ 3,112	$ 429,704	$ 568,464	76%	
Gwinnett	1311-0004	1	$ 593,498	$ 236,316	$ 385,021	$ 171,965	$ 79,606	$ 20,313	$ 1,486,719	$ 130,351	1141%	**562%**
	FMA-2005-PJ1	1	$ 96,599	$ 52,752	$ 15,462	$ 22,897	$ 3,019	$ -	$ 190,730	$ 168,239	113%	
TOTAL		**172**	**$ 13,950,814**	**$ 6,492,967**	**$ 2,888,590**	**$ 3,089,511**	**$ 693,010**	**$ 311,478**	**$ 27,426,369**	**$ 48,885,368**		**56%**

ROI = Return on Investment

Table G.2

Return on Investment and Loss Estimation Results by County and Event

Analysis Information			Results by Loss Category									
County	Event Date	Number of Buildings Included in Analysis[1]	Building Damage	Contents Damage	Displacement Costs	Disruption Costs	Debris Removal Services	Reduced Insurance Transaction Costs	Total Losses Avoided (2010 Dollars)	Project Investment[2] (2010 Dollars)	County ROI by Event	County ROI
Chattooga	Sep-2009	1	$ 1,527,694	$ 554,923	$ -	$ -	$ 11,832	$ 43,735	$ 2,138,183	$ 6,428,806	33%	**33%**
Cobb	Mar-2006	37	$ 18,382	$ 9,432	$ -	$ 5,589	$ 623	$ -	$ 34,027	$ 6,087,373	1%	**110%**
	Nov-2006	39	$ 26,587	$ 13,970	$ 483	$ 11,586	$ 903	$ 600	$ 54,129	$ 6,411,565	1%	
	Aug-2008	60	$ 28,808	$ 14,440	$ 161	$ 11,784	$ 1,046	$ 600	$ 56,839	$ 8,628,622	1%	
	Sep-2009	61	$ 4,814,200	$ 2,020,076	$ 1,034,465	$ 1,143,886	$ 240,416	$ 81,854	$ 9,334,898	$ 8,628,622	108%	
DeKalb	Sep-2002	2	$ 14,042	$ 5,397	$ -	$ 7,525	$ 713	$ 925	$ 28,601	$ 1,144,238	2%	**36%**
	May-2003	2	$ 10,831	$ 3,690	$ -	$ 6,826	$ 545	$ 800	$ 22,692	$ 1,144,238	2%	
	Sep-2004	18	$ 740,111	$ 426,304	$ 195,455	$ 204,424	$ 37,946	$ 21,187	$ 1,625,427	$ 3,545,313	46%	
	Mar-2005	5	$ 207,276	$ 120,147	$ 59,526	$ 48,418	$ 11,246	$ 8,261	$ 454,874	$ 6,520,228	7%	
	Jul-2005	21	$ 485,363	$ 277,975	$ 107,816	$ 135,122	$ 22,919	$ 10,908	$ 1,040,102	$ 7,619,520	14%	
	Jun-2006	9	$ 2,004	$ 1,924	$ -	$ 3,018	$ 86	$ -	$ 7,031	$ 7,619,520	0%	
	Aug-2006	6	$ 174,388	$ 99,487	$ 30,374	$ 50,207	$ 9,785	$ 7,376	$ 371,616	$ 7,619,520	5%	
	Dec-2007	13	$ 192,082	$ 107,129	$ 28,500	$ 59,596	$ 9,963	$ 8,800	$ 406,070	$ 11,180,623	4%	
	Jul-2008	1	$ 1,506	$ 502	$ -	$ 2,715	$ 91	$ -	$ 4,814	$ 16,196,880	0%	
	Sep-2009	93	$ 3,936,402	$ 2,062,347	$ 719,352	$ 762,222	$ 176,127	$ 85,547	$ 7,741,997	$ 32,394,245	24%	
Douglas	May-2003	8	$ 80	$ 77	$ -	$ 2,305	$ 7	$ 375	$ 2,844	$ 566,642	1%	**214%**
	Jun-2005	8	$ 307,831	$ 117,441	$ 49,525	$ 124,866	$ 26,089	$ 6,106	$ 631,858	$ 566,642	112%	
	Sep-2009	12	$ 773,131	$ 368,639	$ 262,449	$ 314,559	$ 60,048	$ 14,091	$ 1,792,917	$ 1,135,106	158%	
Gwinnett	May-2003	1	$ 120,695	$ 44,899	$ 85,898	$ 33,372	$ 16,264	$ 3,809	$ 304,937	$ 130,351	234%	**562%**
	Jul-2005	1	$ 120,695	$ 44,899	$ 85,898	$ 33,372	$ 16,264	$ 3,809	$ 304,937	$ 130,351	234%	
	Oct-2005	1	$ 120,695	$ 36,954	$ 49,320	$ 26,093	$ 16,264	$ 3,626	$ 252,952	$ 130,351	194%	
	Nov-2006	1	$ 58,805	$ 34,227	$ 42,842	$ 24,162	$ 7,727	$ 2,791	$ 170,554	$ 130,351	131%	
	Aug-2008	1	$ 51,911	$ 30,439	$ 35,165	$ 21,593	$ 6,823	$ 2,471	$ 148,401	$ 298,589	50%	
	Sep-2009	2	$ 217,294	$ 97,650	$ 101,360	$ 56,269	$ 19,284	$ 3,809	$ 495,667	$ 298,589	166%	
TOTAL			**$ 13,950,814**	**$ 6,492,967**	**$ 2,888,590**	**$ 3,089,511**	**$ 693,010**	**$ 311,478**	**$ 27,426,369**	**$ 48,885,368**		**56%**

[1] Only buildings that were acquired prior to the event were included in the analysis.

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

ROI = Return on Investment

Table G.3

Return on Investment and Loss Estimation Results by Event

ANALYSIS INFORMATION			RESULTS BY LOSS CATEGORY									
EVENT DATE	COUNTY	NUMBER OF BUILDINGS INCLUDED IN ANALYSIS[1]	BUILDING DAMAGE	CONTENTS DAMAGE	DISPLACEMENT COSTS	DISRUPTION COSTS	DEBRIS REMOVAL SERVICES	REDUCED INSURANCE TRANSACTION COSTS	TOTAL LOSSES AVOIDED (2010 DOLLARS)	PROJECT INVESTMENT[2] (2010 DOLLARS)	EVENT ROI BY COUNTY	EVENT ROI
Sep-2002	DeKalb	2	$ 14,042	$ 5,397	$ -	$ 7,525	$ 713	$ 925	$ 28,601	$ 1,144,238	2%	2%
May-2003	Gwinnett	1	$ 120,695	$ 44,899	$ 85,898	$ 33,372	$ 16,264	$ 3,809	$ 304,937	$ 130,351	234%	18%
	DeKalb	2	$ 10,831	$ 3,690	$ -	$ 6,826	$ 545	$ 800	$ 22,692	$ 1,144,238	2%	
	Douglas	8	$ 80	$ 77	$ -	$ 2,305	$ 7	$ 375	$ 2,844	$ 566,642	1%	
Sep-2004	DeKalb	18	$ 740,111	$ 426,304	$ 195,455	$ 204,424	$ 37,946	$ 21,187	$ 1,625,427	$ 3,545,313	46%	46%
Mar-2005	DeKalb	5	$ 207,276	$ 120,147	$ 59,526	$ 48,418	$ 11,246	$ 8,261	$ 454,874	$ 6,520,228	7%	7%
Jun-2005	Douglas	8	$ 307,831	$ 117,441	$ 49,525	$ 124,866	$ 26,089	$ 6,106	$ 631,858	$ 566,642	112%	112%
Jul-2005	Gwinnett	1	$ 120,695	$ 44,899	$ 85,898	$ 33,372	$ 16,264	$ 3,809	$ 304,937	$ 130,351	234%	17%
	DeKalb	21	$ 485,363	$ 277,975	$ 107,816	$ 135,122	$ 22,919	$ 10,908	$ 1,040,102	$ 7,619,520	14%	
Oct-2005	Gwinnett	1	$ 120,695	$ 36,954	$ 49,320	$ 26,093	$ 16,264	$ 3,626	$ 252,952	$ 130,351	194%	194%
Mar-2006	Cobb	37	$ 18,382	$ 9,432	$ -	$ 5,589	$ 623	$ -	$ 34,027	$ 6,087,373	1%	1%
Jun-2006	DeKalb	9	$ 2,004	$ 1,924	$ -	$ 3,018	$ 86	$ -	$ 7,031	$ 7,619,520	0%	0%
Aug-2006	DeKalb	6	$ 174,388	$ 99,487	$ 30,374	$ 50,207	$ 9,785	$ 7,376	$ 371,616	$ 7,619,520	5%	5%
Nov-2006	Cobb	39	$ 26,587	$ 13,970	$ 483	$ 11,586	$ 903	$ 600	$ 54,129	$ 6,411,565	1%	3%
	Gwinnett	1	$ 58,805	$ 34,227	$ 42,842	$ 24,162	$ 7,727	$ 2,791	$ 170,554	$ 130,351	131%	
Dec-2007	DeKalb	13	$ 192,082	$ 107,129	$ 28,500	$ 59,596	$ 9,963	$ 8,800	$ 406,070	$ 11,180,623	4%	4%
Jul-2008	DeKalb	1	$ 1,506	$ 502	$ -	$ 2,715	$ 91	$ -	$ 4,814	$ 16,196,880	0%	0%
Aug-2008	Cobb	60	$ 28,808	$ 14,440	$ 161	$ 11,784	$ 1,046	$ 600	$ 56,839	$ 8,628,622	1%	2%
	Gwinnett	1	$ 51,911	$ 30,439	$ 35,165	$ 21,593	$ 6,823	$ 2,471	$ 148,401	$ 298,589	50%	
Sep-2009	Chattooga	1	$ 1,527,694	$ 554,923	$ -	$ -	$ 11,832	$ 43,735	$ 2,138,183	$ 6,428,806	33%	44%
	Gwinnett	2	$ 217,294	$ 97,650	$ 101,360	$ 56,269	$ 19,284	$ 3,809	$ 495,667	$ 298,589	166%	
	Cobb	61	$ 4,814,200	$ 2,020,076	$ 1,034,465	$ 1,143,886	$ 240,416	$ 81,854	$ 9,334,898	$ 8,628,622	108%	
	DeKalb	93	$ 3,936,402	$ 2,062,347	$ 719,352	$ 762,222	$ 176,127	$ 85,547	$ 7,741,997	$ 32,394,245	24%	
	Douglas	12	$ 773,131	$ 368,639	$ 262,449	$ 314,559	$ 60,048	$ 14,091	$ 1,792,917	$ 1,135,106	158%	
TOTAL			**$ 13,950,814**	**$ 6,492,967**	**$ 2,888,590**	**$ 3,089,511**	**$ 693,010**	**$ 311,478**	**$ 27,426,369**	**$ 48,885,368**		**56%**

[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.

ROI = Return on Investment

Acronyms

BCA
Benefit-Cost Analysis

BRV
building replacement value

CFS
cubic feet per second

DDF
depth-damage function

DSR
Damage Survey Report

FEMA
Federal Emergency Management Agency

FFE
first floor elevation

FIS
Flood Insurance Study

FMA Program
Flood Mitigation Assistance Program

GEMA
Georgia Emergency Management Agency

GIS
Geographic Information System

HAZUS-MH
Hazards U.S. – Multi-Hazard

HEC
Hydrologic Engineering Center

HEC-HMS
Hydrologic Engineering Center Hydrologic Modeling System

HEC-RAS
Hydrologic Engineering Center River Analysis System

HMA
Hazard Mitigation Assistance

HMGP
Hazard Mitigation Grant Program

HWM
high water mark

LA
Losses Avoided

LAS (OR STUDY)
loss avoidance study

MP_A
Mitigation Project Absent

MP_C
Mitigation Project Complete

NAVD88
North American Vertical Datum of 1988

NCDC
National Climatic Data Center

NFIP
National Flood Insurance Program

NGVD29
National Geodetic Vertical Datum of 1929

NOAA
National Oceanic and Atmospheric Administration

NWS
National Weather Service

O&M
operations and maintenance

PDM PROGRAM
Pre-Disaster Mitigation Program

PA PROGRAM
Public Assistance Program

PI
Project Investment

PW
Project Worksheet

RFC PROGRAM
Repetitive Flood Claims Program

ROI
Return on Investment

SRL Program
Severe Repetitive Loss Program

TIN
triangulated irregular network

USACE
U.S. Army Corps of Engineers

USGS
U.S. Geological Survey

VCM
Vegetative Cover Multiplier

WSE
water surface elevation

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