

Repetitive Loss Area Revisit # 2

Jefferson Parish ● Maplewood Neighborhood



July 27, 2010

University of New Orleans

Center for Hazards Assessment, Response and Technology

(UNO-CHART)

<http://floodhelp.uno.edu>



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List of Terminology

ABFE- Advisory Base Flood Elevation: three feet above the highest adjacent grade of a structure; or the BFE on the current FIRM, whichever is the higher.

BFE- Base Flood Elevation; the elevation of the crest of the base flood, or the 1% annual storm.

CFM – Certified Floodplain Manager

CHART – Center for Hazards Assessment, Response and Technology at the University of New Orleans

Corps – U. S. Army Corps of Engineers

DFIRM – Digital Flood Insurance Rate Map

FEMA – Federal Emergency Management Agency

FIRM – Flood Insurance Rate Map

HMGP – Hazard Mitigation Grant Program

ICC – Increased Cost of Compliance

NFIP – National Flood Insurance Program

RL – Repetitive Loss Property

SRL – Severe Repetitive Loss Property

SFHA – Special Flood Hazard Area: The base floodplain delineated on a FIRM. The SFHA is mapped as a Zone A, and in coastal situations, a Zone V. The SFHA may or may not encompass all of a community's flood problems.

100-year flood – Not to be confused with a flood that happens every 100 years, the 100-year flood is actually a flood that has a 1% chance annually of being equaled or exceeded. This is what is known as the “base flood,” and is the basis for all floodplain management regulation and standards.

Repetitive Loss Area Revisit Jefferson Parish – Maplewood Neighborhood

Purpose

This document serves as a follow-up addendum to the original Repetitive Loss Area Analysis that was completed in the Maplewood neighborhood in May 2006. This report documents the progress made by the residents of the Maplewood study area in mitigating their repetitive flood loss, as well as the progress made by the City, State, and the Federal Government in protecting their citizens from repetitive flood hazards.

Background

The University of New Orleans' Center for Hazards Assessment, Response, and Technology (UNO-CHART) receives funding from FEMA to collect data and analyze the repetitive loss areas in Louisiana and Texas. A Repetitive Loss Area Analysis was conducted for the Maplewood neighborhood in Harvey, LA, in May 2006. A copy of the final report can be found online at <http://floodhelp.uno.edu> under the "Projects Publications" heading.

UNO-CHART has been funded by FEMA Region VI to conduct revisits to areas that previously were the focus of repetitive loss area analyses. This document will detail the progress of public works projects overseen by various agencies, as well as the improvements and refurbishments made to properties by the residents themselves in the Maplewood study area.

The Area: The Maplewood area analysis is located in unincorporated Jefferson Parish, between the Harvey Canal and the City of Gretna, on the west bank of the Mississippi River. Its location is shown on Figure 1 on page 4. This analysis only looked at the southern part of the Maplewood Subdivision: Maplewood, Redwood, and Dogwood Drive between 1st and 9th Streets.

Terminology

Area Analysis: An approach to identify repetitive loss areas, evaluate mitigation approaches, and determine the most appropriate alternatives to reduce future repetitive losses.

Hazard Mitigation: Any sustained action taken to reduce or eliminate long-term risk to life and property from a hazard event.

Repetitive loss: An NFIP-insured property where two or more claim payments of more than \$1,000 have been paid within a 10-year period since 1978. To focus resources on those properties that represent the best opportunities for mitigation, two sub-categories have been defined: the Target Group and Severe Repetitive loss Properties.

Severe Repetitive Loss Properties: As defined by the Flood Insurance Reform Act of 2004, 1-4 family residences that have had four or more claims of more than \$5,000 or two claims that cumulatively exceed the reported building's value. The Act creates new funding mechanisms to help mitigate flood damage for these properties.

The Maplewood area analysis has a high concentration of repetitive flood insurance claims. Of the 575 homes in the designated area, 242 (42%) are repetitive loss properties and 53 of the 242 are severe repetitive loss properties. The area north of 1st Street, the newer part of Maplewood Subdivision, was not analyzed because it does not have any severe repetitive loss properties.

More information about the original Maplewood Neighborhood Repetitive Loss Area Analysis, including the process, methodology, and the final report, can be found on UNO-CHART's website: <http://floodhelp.uno.edu>

Initial Contact: This consisted of a meeting with the Jefferson Parish floodplain manager. The purpose of the meeting was not only to inform the Parish of UNO-CHART's intentions to reenter the neighborhood and compile this report, but was also to ask for any additional information that Jefferson Parish could provide to UNO-CHART for the purposes of this study.

Data Collected: UNO-CHART reviewed and collected data from the following sources.

- Flood Insurance Data
- FIRM Data
- Rain and Flood Events
- SELA and PAC projects
- Property owner data sheets
- Fieldwork
- Building Permits

Flood insurance data: The Privacy Act of 1974 (5 U.S.C. 522a) restricts the release of certain types of data to the public. Flood insurance policy and claim data are included in the list of restricted information. FEMA can only release such data to state and local governments, and only if the data are used for floodplain management, mitigation, or research purposes. Therefore, this report does not identify the repetitive loss properties or include claims information for any individual property. UNO-CHART reviewed recent flood insurance claim data to assess the flooding events that may have affected the Maplewood study area since May 2006. There has been one claim that was filed in July 2007.

FIRM: The July 9, 1976 effective FEMA Flood Insurance Rate Map (FIRM) states that the study area was in a "B" and "C" Flood Zone at that time which were considered Non-Special Flood Hazard Areas (SFHA) and outside the Floodplain. Both of these Flood Zones were converted to "X" Flood Zones on the 1995 FIRM revision on March 23, 1995, but carried the same status as the previous designations. Properties located in an "X" Flood Zone have a minimal risk of flooding and are protected from the 100-year flood by levee, dike, or other structures subject to failure of overtopping during larger floods. The latest March 23, 1995 FIRM is on file in Jefferson Parish's main Libraries, the Engineering Department, and Emergency Management Department.

It should be noted that after Hurricane Katrina, FEMA issued Advisory Base Flood Elevation's (ABFE's) for Jefferson Parish in April 2006 which were subsequently adopted by the Parish in July 2006. FEMA and Jefferson Parish, as a result of these ABFE's, currently requires that new construction and substantial improvements in an "X" Flood Zone be constructed or elevated at least 3 feet above the Highest Existing Adjacent Grade or Centerline of the Street. This

requirement could change in the future when the Preliminary Digital Flood Insurance Rate Maps (DFIRM's) are revised and fully adopted.

DFIRM: As part of the FEMA Map Modernization Program, FEMA in conjunction with Jefferson Parish, updated, developed, and released the Preliminary DFIRM's in October 2008. Due to numerous problems with the DFIRM's for the Westbank, FEMA allowed the Parish to select an alternate option to continue using the ABFE's on the Westbank until the Corps of Engineers certifies the levees in 2011, especially those along the Harvey Canal. At that time, the DFIRM's will be revised and the Parish will move forward with formal adoption process which could take somewhere between 12-18 months to accomplish.

The current Preliminary DFIRM information for Maplewood now places the area in an "AE" Flood Zone which is a SFHA and inside the mapped floodplain. The "E" associated with "AE" means that there is an elevation to which the lowest floor of livable space must be elevated to. The Base Flood Elevation (BFE) for the Maplewood area on the DFIRM is at +3.00 feet above sea level. However, there is a possibility that this could change and revert back to an "X" Flood Zone once the Corps completes their levee certifications and the DFIRM's are revised. The good news is that Flood Insurance Premiums are still being rated on the 1995 FIRM utilizing the "X" Flood Zone designation as that is the last fully adopted map until possibly the 2012-2013 time period.

Rain and Flood Events: Since the area analysis was concluded in May 2006, multiple heavy rain events have occurred in Jefferson Parish. Most notably, there was one severe rain event in July 2007. Accordingly, there has been one flood claim in 2007 in the Maplewood study area. Having only one claim since May 2006 does not necessarily lead to the conclusion that the Maplewood study area is safe from future flooding events; it does however indicate that recent drainage improvements are working as intended. Even though most homes in Maplewood are constructed 1 – 2 feet higher than street level, if the streets flood to a deeper level from a heavy rain event, the homes could be flooded.

SELA projects: Authorized by U.S. Congress in 1996, Southeast Louisiana Urban Flood Control Project (SELA) drainage program is designed to reduce flood-related damage to property and infrastructure in Jefferson, Orleans and St. Tammany. The SELA project includes canal and pump station improvements in the three parishes. The channel and pumping station improvements in Orleans and Jefferson Parishes support the parishes' master drainage plans and, generally, provide flood protection on a level associated with a ten-year rainfall event, while also reducing damages for larger events.

Post-Authorization Changes (PAC): While the SELA Project lowered flood stages in some areas, it did not lower them everywhere. Therefore, Congress authorized what is called Post Authorization Changes (PAC). The SELA project for East Harvey called for lining the upper bank of the Murphy/Gardere and Trapp Canals with concrete, lining the sides and the bottoms of the Industry Canal with concrete, and Increasing the capacity of the Whitney- Baratavia Pumping Station by an additional 1,000 cfs.

The Gardere Canal Improvements Phase I & II called for the widening of the earthen canal by approximately 7800 LF across and by installing permanent sheet piles, u-channel, and sloped canal pavements sections. The project estimated cost is \$600,000, and was schedule to be finished by December 2009. While the project is not completed; currently all major features of this work have been accomplished.



Figure 2: Gardere Canal

HMGP Funded Drainage

Projects: There is a drainage project for the Maplewood area that was funded under the Hazard

Mitigation Grant Program for Hurricanes Katrina and Rita in the amount of \$10,250,789. It is in the Engineer Design Phase right now with construction probably to commence sometime in 2011

Property Owner Data Collection: A letter¹ was sent out to the property owners in the Maplewood study area from UNO-CHART introducing residents to the follow-up revisit process on February 24, 2010. Accompanying the letters was a data sheet that homeowners were asked to fill out and return to UNO-CHART by March 12, 2010. Because of the low return rate a second mail-out of letters and data sheets was completed on May 14, 2010.

Of the 575 properties in the original study area that were mailed letters and data sheets, 21 were returned to UNO-CHART as “vacant” addresses and 122 of the remaining 554 were completed and mailed back. The combined return rate for the original and second mail-out is 22.02%, which for a study of this nature is considered a very good return rate. In the original area analysis in 2006, the return rate was 35% compared with 22% in this follow-up study. This could be due to the fact that the original study was a year after Hurricane Katrina and that this area has not flooded since.

Of the 122 respondents, only 40 recall the original Maplewood Repetitive Loss Area Analysis that was completed in May 2006. Of those 40 only 15 attended the original meeting. These numbers show that more needs to be done to involve the residents of areas being analyzed. One of the main tenets of UNO-CHART’s area analyses is to actively involve the residents in the process. This is typically accomplished through the distribution and collection of completed property owner data sheets and the holding of the neighborhood meeting to present the findings of the report, but as the revisit data is showing, this may not be adequate. It should be noted that

¹ Copies of the letter from UNO-CHART and the data sheet can be found in Appendix A and B

4 of the 122 respondents moved into the area some time after the completion of the original 2006 area analysis. Those 4 respondents moved into the area between 2007 and 2009, which would explain why those 4 had no recollection of the area analysis.

Of course there may be others who recall the analysis and attended the meeting, but did not fill out the revisit data sheets for a variety of reasons. It is important to note that the information collected through the data sheets does not represent the complete picture, only a snapshot of information that relies on resident feedback. For a summary of all the responses, please see the response table in Appendix C.

Fieldwork: On March 10, 2010, a team from UNO-CHART conducted fieldwork in the Maplewood study area. This consisted of taking photographs of each property in the study area, noting if the building was occupied, the elevation above the street and grade, as well as the structure and foundation type. This was done with the aim of comparing the fieldwork photos and notes to the original fieldwork from 2006 to mark any changes that have taken place in the way of flood mitigation.

There were some signs of visible flood mitigation actions including newly elevated homes and elevation of AC units. Whether they were elevated previously or even above the BFE can not be easily answered, as not all photographs of the homes in the study area from the original area analysis were able to show the location of the AC units.



Building Permits: UNO-CHART, in an effort to better describe any mitigation actions taken by the residents of the Maplewood area, reviewed all *building* permits issued by the Jefferson Parish Office of Inspection and Code Enforcement for the Westbank since May 2006.

- ❖ There were 105 residential building permits that were filed from the residents of Maplewood study area since 2006. These permits were issued for 92 homeowners in the area analysis.
 - 80 have been “closed,” meaning that all work has been completed and a certificate of occupancy has been issued.
 - 25 permits were in the “issued” stage of the process, meaning that progress on the permits could be in various stages
- ❖ 25 permits were to make hurricane repairs, of which 22 were related to Hurricane Katarina, while the other 3 were related to Hurricane Gustav.
- ❖ 2 permits were for new single family residence, one of which was in 2007 and is closed right now. The new house has been elevated 3 feet above the highest existing adjacent grade (HEAG). The other home had the permit issued in 2010, and the work is expected to start soon.
- ❖ 17 permits were for foundation repairs and or shoring of the house – 6 of which were to elevate the house 3 feet above the highest existing adjacent grade (HEAG).
- ❖ The other 61 permits were mostly to add on, construct, or renovate other elements that are not pertinent to this report. There were no clear signs of mitigation actions aside from the elevations.

There is more to the question of mitigation actions taken on by residents in the study area, as many of the items asked about on the data sheet do not require a permit. Some of the actions that would not require a permit that residents have taken on include:

- ❖ Moving utilities/contents to a higher level : 55 respondents
- ❖ Sandbagged when water threatened: 7 respondents
- ❖ Installed drains or pipes to improve drainage: 34 respondents

Problem Statement: The area analysis found that the residential properties in the Maplewood study area are generally subject to two types of flooding:

- (a) Heavy rains overloading the drainage system and
- (b) Deeper flooding from pump station or levee failure or overtopping.

There are different approaches that can mitigate damage from these kinds of flooding. Recent drainage² improvements by Jefferson Parish and SELA have already reduced the recurrence of the shallow repetitive drainage flooding. These structural projects will not prevent the deeper flooding from pump station or levee failure, nor can they be expected to be floodproof. The

² SELA has completed several projects around in the Maplewood subdivision including Gardere Canal phase I (completed 1999) and Brown Ave Canal (completed 2001).

nonstructural mitigation measures for Maplewood residents are justified because shallow flooding may still occur if the storm sewers become clogged or the pumps fail to operate.

The original analysis reviews several different nonstructural mitigation alternatives, each with advantages and disadvantages. Structural elevation, acquisition, or reconstructions are the only options if the building is substantially damaged. At this time Jefferson Parish Severe Repetitive loss (SRL) funds are still available to fund such projects. For more information about the Jefferson Parish Severe Repetitive loss funds please contact the Emergency Management Floodplain office at (504) 349-5360.

Barriers and dry floodproofing can be effective against shallow flooding and are appropriate mitigation measures for Maplewood per the area analysis. Small floodwalls could be constructed around some properties. Such barriers are not recommended for flood depths greater than three feet.

There are projects that homeowners can do themselves without a grant to protect their homes. In most cases the initial financial cost is significantly outweighed by the long term financial, emotional, and physical costs associated with flooding.

Some residents of Maplewood have installed drainage pipes that go around the house and collect water from the yard. Water is then carried to the street. Residents who used this type of barriers report in their datasheet that these pipes work and have kept water away from yard and home.

Recommendations: Four recommendations were given in the original area analysis. Based on the responses from the homeowner’s data sheets, the fieldwork and data collection, these recommendations still apply.

1. The Parish and the Corps of Engineers should complete the planned drainage improvements proposed by SELA and the BCG study. Most of these changes have taken place and all major features of the work are accomplished.
2. Property owners should obtain and keep a flood insurance policy on their homes. If eligible, they should obtain a preferred risk policy. In the original area analysis, 72% of the residents who completed the data sheets were holding a flood insurance policy. In this current study 92% of the residents who completed their datasheets are holding flood insurance policy. The importance of maintaining a flood



Figure 4: drainage pipes installed by the homeowner

For information on the NFIP, or to get a list of Insurance agents in your area:

www.floodsmart.gov

insurance policy is still something that all homeowners should understand. Mitigation measures can fail and flood levels can exceed regulatory levels at any time.

3. Property owners should review the yard drainage improvements and non structural alternatives that can protect their own properties from flood damage and implement those that are most appropriate for their situations. In this current study residents who responded to the datasheet have taken several flood protection measures on their properties. For example 45% have moved utilities or contents to a higher level, 28% have installed drains and pipes to improve drainage in their yards, and 16% regarded theirs yards to keep water from the building.
4. The Parish should establish an office to provide technical assistance to property owners interested in pursuing a flood protection project on their own. Homeowners who need technical assistance in reaching their mitigation goals can contact the Emergency Management Floodplain office at 504.349-5360.

Office of Inspection and Code Enforcement, West Bank Office, Permit Division

400 Maple Avenue
Harvey, la 70058
Phone: (504) 364-3515

Emergency Management Floodplain office

Phone: (504) 349-5360

UNO-CHART

www.floodhelp.uno.edu
Phone: (504) 280-1404
Fax: (504) 280-4023
ekpatton@uno.edu

Residents may also contact UNO-CHART at 504.280.1404 or by going to www.floodhelp.uno.edu . There are projects that homeowners can do themselves without a grant to protect their homes. In most cases the initial financial cost is significantly outweighed by the long term financial, emotional, and physical costs associated with flooding. Residents are also encouraged to look at UNO-CHART Repetitive Loss Area Analyses for ideas on projects they can consider. These reports can be found on UNO-CHART’s website (www.floodhelp.uno.edu) under the “Project Publications” tab.

Neighborhood Presentation: On July 27th, 2010 a team from UNO-CHART attended the Maplewood Civic Association’s monthly meeting to present these findings in the draft report to the residents. Personnel from the Jefferson Parish Emergency Management Office and FEMA’s Louisiana Recovery Office (LRO) were on hand to answer questions from the residents about drainage or flood insurance issues. Residents and local officials were then given two weeks to respond to UNO-CHART with any comments on the draft report. After the two week period, the report was finalized.



Figure 5: The Neighborhood Presentation

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Appendix A: Maplewood Area Analysis Letter

Center for Hazards Assessment, Response and Technology
Milneburg Hall, Suite 102
2000 Lakeshore Drive
New Orleans, LA 70148



February 24, 2010

Dear Maplewood Area Resident:

As you may recall, in May 2006 The University of New Orleans Center for Hazards Assessment, Response and Technology (UNO-CHART) completed a Repetitive Floodloss Area Analysis for your neighborhood. This area analysis explored and addressed the problem of repeated floodloss in the Maplewood Area. If you did not get an opportunity to review this report, please find it online at: <http://www.floodhelp.uno.edu/uploads/Maplewood%20Area%20Analysis.pdf>

UNO-CHART is now conducting a follow-up analysis in the Mapelwood area to assess the flood mitigation progress of the neighborhood since the release of the area analysis and your assistance is requested once more. We have included data sheets that we would like you to take a few moments to complete. The data sheets can be folded to reveal a self addressed, stamped envelope. All we ask you to do after you have filled out the information is to simply fold the completed data sheets, secure with a piece of tape, and return them by March 12th. The results of the data sheets will be compiled and analyzed, and UNO-CHART will present these findings as an addendum to the original report.

The UNO-CHART team will be in the Maplewood Area during the week of March 8th –March 12th to conduct fieldwork for this follow-up analysis. The fieldwork will consist of taking photos of all the properties in the original study area and noting any changes to the structures.

The information you provide will help UNO-CHART assess the progress made since the report was released. Thank you for your time and consideration in this matter. Please feel free to contact Erin Patton at UNO/CHART at (504) 280-1404 or Tom Rodrigue at (504) 349-5360 with any questions or concerns.

Thank you for your participation.

Sincerely,

Monica Teets Farris, Ph.D.
Acting Director / Assistant Professor - Research
UNO-CHART
Tel. 504.280.5760 / Fax 504.280.4023

Appendix B: Maplewood Area Analysis Datasheet



Name: _____

Property Address: _____

Information about you

1. How long have you lived in this house? _____

2. Do you recall the Maplewood Area repetitive floodloss area analysis conducted in 2006?

Yes No

Did you attend the public meeting in May 24th, 2006 coordinated by the Maplewood Civic Association and UNO detailing the repetitive flood loss report?

Yes No

Did you get an opportunity to view the final report? Yes No

To view the final report online, please visit

<http://floodhelp.uno.edu/uploads/images/In%20the%20News/BroadmoorFinalReport.pdf>

3. Are you actively involved with the Maplewood Civic Association? Yes No

Information about your house

4. How many times has your house flooded? _____

5. Has your home flooded since May of 2006? Yes No

If yes, when did the flood(s) occur? _____

6. What type of foundation does your house have?

Slab Crawlspace Piles/Piers Combination

Other _____

7. Do you currently have flood insurance? Yes No

a. How long have you carried this policy? _____

Information about flooding history

8. What was the deepest the water ever got while you were living in this house?

Never flooded

In the yard only: _____ deep, in _____ (month/year)

Over the basement floor: _____ deep, in _____ (month/year)

Over the first floor: _____ deep, in _____ (month/year)

What was the longest time that the water stayed in the house?

_____ hours or _____ days

9. What do you feel was the cause of your flooding? Check all that affect your building.

Subsidence Sewer backups

Standing water next to house Drainage systems failure

- Drainage from nearby properties Overbank flooding from canals
 Other: _____

10. Do you anticipate that your house will flood again? Why or why not?

Information about flood protection measures

(In no way will you be obligated to pursue any mitigation measure by answering these questions; this is simply to gauge interest)

11. Have you taken any flood protection measures on your property, or are you in the process of mitigating your home? Check all that apply.

- | | |
|---|--|
| <input type="checkbox"/> Moved utilities/contents to a higher level | <input type="checkbox"/> Elevated all or parts of the building |
| <input type="checkbox"/> Regraded yard to keep water away from the Building | <input type="checkbox"/> Waterproofed the outside walls |
| <input type="checkbox"/> Installed drains or pipes to improve drainage | <input type="checkbox"/> Built a wall to keep water away |
| <input type="checkbox"/> Sandbagged when water threatened | <input type="checkbox"/> Other: _____ |

12. Did any of the measures you checked in item 11 work? If so, which ones. If not, do you know why they didn't work?

13. Have you participated in/are you participating in a mitigation grant program?

- Jefferson Parish Hazard Mitigation Grant Program (HMGP)
 Jefferson Parish "Sever Repetitive Loss" (SRL) Program
 State HMGP through State Community Development Office/Road Home
 Increased Cost of Compliance (ICC) coverage provided by your Flood Insurance Policy

14. Have you considered implementing a flood protection measure?

- Elevation Waterproofing your house to prevent water from entering
 Rebuilding from scratch Barriers
 Other: _____

15. If there were no constraints, what, if any, measures would you like to implement

- Elevation Waterproofing your house to prevent water from entering
 Rebuilding from scratch Barriers
 Other: _____

16. Whether or not you have already done so, are you interested in pursuing measures to protect your property from flooding? Yes No

a. What measures? _____

b. If you want information on protection measures, please include your full mailing address.

Appendix C: Data Sheet Results

Total Respondents	122 out of 554	
How long have you lived in this house?	23%	0 - 20 years
	40%	21 - 40 years
	35%	41+ years
Do you recall the Maplewood Area repetitive floodloss area analysis conducted in 2006	33%	yes
Did you attend the public meeting in May 24 th , 2006	12%	yes
Did you get an opportunity to view the final report	7%	yes
Are you actively involved with the Maplewood Civic Association	39%	yes
How many times has your house flooded	43%	Never
	21%	1-2
	21%	3-4
	12%	5+
Has your home flooded since May of 2006	8%	yes
What type of foundation does your house have	100%	Slab
Do you currently have flood insurance	92%	Yes
What was the deepest the water ever got while you were living in this house	34%	Never flooded
	13%	In the yard only (2''-12'')
	34%	Over the first floor (1''-13'')
What was the longest time that the water stayed in the house	48%	1-24 hours
	19%	1day-2days
When was this	32%	1978
	13%	1980's
	16%	2005
What do you feel was the cause of your flooding?	9%	Subsidence
	8%	Standing water next to house
	16%	Drainage from nearby properties
	14%	Sewer backups
	48%	Drainage systems failure
	25%	Overbank flooding from canals
7%	Other: Heavy rainfall	
Do you anticipate that your house will flood again	25%	Yes
	42%	No
	19%	Not sure

*Not all respondents answered every question; therefore the percentages do not total 100%

Appendix C: Data Sheet Results: continued

Total Respondents	122 out of 554	
Have you taken any flood protection measures on your property, or are you in the process of mitigating your home (multiple answers were allowed)	45%	Moved utilities/contents to a higher level
	16%	Regraded yard to keep water away from the Building
	28%	Installed drains or pipes to improve drainage
	6%	Sandbagged when water threatened
	9%	Elevated all or parts of the building
	3%	Waterproofed the outside walls
	2%	Built a wall to keep water away
Did any of the measures you took work	21%	yes
	3%	No
	3%	Not tested yet
Have you participated in/are you participating in a mitigation grant program (multiple answers were allowed)	9	Jefferson Parish Hazard Mitigation Grant Program (HMGP)
	12	Jefferson Parish "Sever Repetitive Loss" (SRL) Program
	10	State HMGP through State Community Development Office/Road Home
	9	Increased Cost of Compliance (ICC) coverage provided by your Flood Insurance Policy
Have you considered implementing a flood protection measure (multiple answers were allowed)	40%	Elevation
	2%	Rebuilding from scratch
	3%	Waterproofing your house to prevent water from entering
	2%	Barriers
If there were no constraints, what, if any, measures would you like to implement (multiple answers were allowed)	49%	Elevation
	6%	Rebuilding from scratch
	7%	Waterproofing your house to prevent water from entering
	2%	Barriers
Whether or not you have already done so, are you interested in pursuing measures to protect your property from flooding	60%	yes
What measures	25%	elevation

*Not all respondents answered every question; therefore the percentages do not total 100%