Repetitive Loss Area Revisit #5

City of New Orleans
Hollygrove Neighborhood

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University of New Orleans
Center for Hazards Assessment, Response and Technology

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List of Terminology

**100-year Flood:** It is the flood elevation that has a one percent chance of being equaled or exceeded each year.

**Area Analysis:** An approach to identify repeatedly flooded areas, evaluate mitigation approaches, and determine the most appropriate alternatives to reduce future repeated flood losses.

**BFE:** Base Flood Elevation: The elevation of the crest of the base flood or 100-year flood.

**UNO-CHART:** Center for Hazards Assessment, Response and Technology at the University of New Orleans

**cfs:** Cubic feet per second, the means by which the flow of water is measured

**CRS:** Community Rating System, voluntary incentive program that recognizes and encourages community floodplain activities that exceed the minimum National Flood Insurance Program (NFIP) requirements

**FEMA:** Federal Emergency Management Agency

**FIRM:** Flood Insurance Rate Map

**Floodway:** The channel of a stream, plus any adjacent floodplain areas, that must be kept free of encroachment so that the 1-percent annual chance flood can be carried without substantial increases in flood heights.

**Freeboard:** A factor of safety usually expressed in feet above a flood level for purposes of floodplain management.

**GIS:** Geographic Information Systems

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

**ICC:** Increased Cost of Compliance, a $30,000 rider on flood insurance policies for policy holders located in the special flood hazard area that can be used to bring the structure into compliance in the event that it is substantially damaged by a flood.

**msl:** Mean sea level

**NFIP:** National Flood Insurance Program

**NWS:** National Weather Service

**Repetitive Flood Loss (RL):** 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.

**SFHA:** Special Flood Hazard Area

**Severe Repetitive Flood Loss Properties (SRL):** 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.
Repetitive Flood Loss Revisit

Orleans Parish – Hollygrove Neighborhood

Purpose

This report serves as a follow-up document to Repetitive Loss Area Analysis #8: City of New Orleans, Hollygrove Neighborhood completed on September 30, 2009. This analysis focuses on the progress made by residents, officials and government agencies since the original study to protect citizens from repetitive flood hazards.

Background

The University of New Orleans’ Center for Hazards Assessment, Response and Technology (UNO-CHART) is funded by the Federal Emergency Management Agency (FEMA) to collect data for and analyze areas with a large number of repetitive-loss properties in Louisiana and Texas.

The original analysis of the Hollygrove neighborhood in Orleans Parish, La., was conducted in the summer and fall of 2009. To view that document or other repetitive loss area analyses online, visit www.floodhelp.uno.edu and click on “Project Publications” Where to find the final reports online.

In addition to the initial analysis, FEMA Region VI funds revisits to the initial areas to determine if the situation is improving in the neighborhoods selected. This document discusses the alterations made in the community in the past year.

The Area: The Hollygrove neighborhood area analysis concentrated on a small area of Hollygrove, a five-block section of Stroelitz Street, extending westward from Joliet Street until Hollygrove Street where the street ends at railroad tracks. See the map on Page 5 (Figure 1) for more detail.

The east bank of the City of New Orleans is surrounded by water on three sides, the Mississippi River, Lake Pontchartrain and Lake Borgne for borders, and a number of bayous feed into the city from the lakes. In addition to the bayous, canals and drainage ditches flow among and under streets throughout the city. Residents are dependent on a pumping system of 21 pumping stations and 15 underpass
pumping stations to remove rainfall and prevent and remove floodwaters. Almost 70 percent (95,197) of the structures in Orleans Parish are in A or V flood zones on effective flood insurance rate maps. New Orleans began settlement along the Mississippi River’s natural levee and expanded inward along ridges and bayous before modern pumps allowed swampy areas to be developed.

The Hollygrove neighborhood was settled in this part of the city. Pumping of water out of the soil, in addition to making the land solid, compacted the soil, lowering its elevation to its current level at sea level or below. A number of canals and pumping stations drain the low-lying area, as shown in Figure 2, and gravity-fed storm water eventually empties into the Monticello Canal and out to Lake Pontchartrain. When a rain event exceeds the design capacity for stormwater drainage, water may exceed the banks of the canal and back up into the neighborhood. Additionally, a bottleneck is formed in the Monticello Canal at the location where the train tracks and Airline Highway pass over it. Since Monticello and Palmetto are both open canals there is a problem with debris as well. Fast moving waters can carry debris that gets lodged in bottlenecks and causes backups.

Figure 1: Hollygrove Neighborhood and Analysis Area
Figure 2: Hollygrove Neighborhood Drainage
Hollygrove is in the central western edge of the City of New Orleans. It is bordered to the north by the railroad tracks and the Palmetto Canal. On the west by the Parish line with Jefferson Parish formed by the Monticello Canal, to the south by S. Claiborne Avenue and to the east by S. Carrollton Avenue. The architecture is largely Post-World War II small suburban tract homes, many with carports. These homes sit in small lots, closely spaced (Figure 3).

**Contact:** The follow-up visit was initiated with the Hazard Mitigation team from the City of New Orleans office of Homeland Security and Emergency Preparedness to seek information about changes in the neighborhood. Additional meetings were held with members of the U.S. Army Corps of Engineers to learn more about drainage changes, and with residents and City Council staff from the area to collect data.

**Data Collected:** The data used in the production of this report are:

- Flood Insurance Data
- Flood Insurance Rate Map Data
- Rain and Flood Event Data
- U.S. Army Corps of Engineers Data
- Grants in the Study Area
- Fieldwork
- Building Permits
- Data from residents

*Flood insurance data* was collected from flood insurance claims reported to the National Flood Insurance Program to FEMA. The Privacy Act of 1974 (5 U.S.C. 522a) restricts the disclosure of some types of data to the public, among this is flood insurance policy and claims data. FEMA can only release this data to state and local governments for the purpose of floodplain management, hazard mitigation or research. For this reason, particular addresses of repetitive-loss properties are not disclosed in this report. No new claims were filed by repetitive loss properties in the study area since the last report. However, two claims were filed in conjunction with Hurricane Gustav that were not included in the previous report. The September 2008 storm resulted in two claims made by repetitive-loss properties for a total of $17,662.71.
However, in addition to drainage improvements, there are other reasons that there may be fewer claims in recent years. Severe damage was done to the neighborhood during Hurricane Katrina, with water as high as 9 feet sitting for several weeks. Many of the most severely damaged homes have been demolished or abandoned and remain in that state today (Figure 4). These homeowners likely no longer carry policies. In addition, many who have returned have mitigated against future losses. During previous flooding events, their home would have been inundated with water, however, because of activities including elevation, their homes are now above the flood waters or their losses are minimized.

_Flood Insurance Rate Maps_ are available for the Hollygrove area. These maps, created by FEMA denote the severity of flood risk by classifying areas into a number of zones. These zones determine flood insurance rates for properties in all communities participating in the NFIP, by determining a Base Flood Elevation (BFE) or an elevation above sea level above which there less than a 1 percent chance in any given year that a flood to that level would be likely to occur (sometimes called a 100-year flood). Shortly after Hurricanes Katrina and Rita, Orleans Parish adopted an Advisory Base Flood Elevation (ABFE) that is still the regulatory standard. ABFE is 3 feet above the highest existing adjacent grade or the BFE from the effective FIRM, whichever is higher (Figure 5). Orleans Parish adopted ABFE on August 26, 2006. Any
homes constructed, rebuilt, repaired or renovated at 50 percent or greater the value of the home must be elevated to ABFE.

Because most of Hollygrove is 2-4 feet below sea level\(^1\), in many homes in the neighborhood must be elevated to a height greater than 3 feet above the highest existing adjacent grade.

The effective FIRM is from 1984 (Figure 5), and puts all but a few lots in Hollygrove in the A Zone, which is an zone subject to greater than a 1 percent annual chance of flooding. The area outside of the A Zone is in an X500 Zone, subject to a greater than 0.2 percent annual chance of flooding.

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\(^1\) Elevations are estimates from the U.S. Geological Society’s National Elevation Dataset.
The FEMA Map Modernization Program began in 2000 with the goal of better estimating risk and updating existing maps to reflect more accurate conditions as well as to digitalize the maps for use in modern Geographic Information Systems. Because the completion of the study coincided roughly with the 2005 impact of Hurricane Katrina, New Orleans’ studies were adjusted, and the resulting maps were released in early 2009. These maps included the upgrades made to the damaged levee system at the time of the study but did not reflect ongoing improvements. For this reason, coastal communities were offered the option 1) to accept the new Preliminary Digital Flood Insurance Rate Maps, demonstrating the progress made in rebuilding the U.S. Army Corps of Engineers Hurricane and Storm Risk Reduction System to the date of the study, 2) regulate to the ABFE or 3) continue using the existing FIRM from 1984. Orleans Parish opted to regulate to the ABFE (Figure 6), and for many residents this may mean elevating more than 3 feet above HEAG to the BFE of .5 feet. Once the levee system has been restored, a new study will be conducted and new DFIRMs established. Residents interested in the Preliminary DFIRM, which presents the most current representation of flood risk, can view the map as it relates to their properties online at the Louisiana Mapping Project.

Rain and flood event data includes the reported rainfall amounts for given dates in the study period and the disaster declarations related to flooding that are declared for the area. Table 1 shows significant rainfall events since the last report. December 2009 was a particularly wet one in New Orleans, setting records as the wettest month at 25.92 inches or 20.85 inches than New Orleans typically experiences in December. The event lasting Dec. 14-15 dropped 8.76 inches on the city in less than 24 hours, which is similar to a 1991 rain event that resulted in 27 flood insurance claims in the Hollygrove Area Analysis Area. No claims have been posted for the December 2009 event showing an improvement in drainage capacity.
U.S. Army Corps of Engineers data includes data gathered during a July 27, 2010 update on existing drainage improvements with members of the Corps and the community, as well as information about SELA drainage projects in the area. In 1996, Southeast Louisiana Urban Flood Control Project (SELA) was authorized by Congress to reduce flood damage to properties and infrastructure in Metropolitan New Orleans. This was done through the construction of pumping stations and suitable canals. These projects are...
undertaken by the Corps and the New Orleans Sewerage & Water Board together. Projects designed to alleviate drainage problems in the area included the Pritchard Street Pumping Station (Figure 7), and culverts on Forshey and Eagle Streets. These projects were completed before the impact of Hurricane Katrina.

![Figure 8: Pump-to-the-River benefited area](image)

Although the projects tasked for the area are complete, the South Claiborne Avenue project, which is currently under design, is being re-examined by the Corps. The project would bring 800cfs of water into the Monticello Canal from Uptown. A new hydraulic analysis is being conducted for the project to assure that the new drainage will not cause the Monticello Canal to break its banks during a 10-year flood event. Results of the study will be available by the end of 2010. Depending on the results, either the project will continue as planned or a Post-Authorization Change (PAC) will add drainage improvements to mitigate the new drainage in the canal.

Another Corps issue related to flooding in Hollygrove was the Pump-to-the-River option (Figure 8). The new pump along Hoey’s Gate in Jefferson Parish would allow alleviation in the Monticello Canal by to the Mississippi River instead on Lake Pontchartrain during a tropical storm or hurricane, which also
reduced the strain on the 17th Street Canal that failed during Hurricane Katrina. A special House-Senate Committee failed to authorize a study for the Pump to the River option on September. However, the Pump-to-the-River option continues to have support from state officials and Louisiana’s national senators. The state has offered to pay for a study of the feasibility of Pump-to-the-River, and Corps pumps have been built so that they can be adapted should the option be authorized at a later date.

Another alternative being considered and drawing community support is erecting a flood wall on the Orleans Parish side of the Monticello Canal (Figure 8). The Jefferson parish side has a floodwall, but the Orleans Parish does not. In the past, HESCO baskets have been placed along the canal during tropical events, but these are temporary solutions.

Other alternatives considered by city officials include Tiger dams, which are water-filled barriers that are tied together and would rest atop where a floodwall would be. However, Corps engineers caution that the addition of a floodwall along the Orleans Parish side would be exacerbates flooding in the Hollygrove area.

Since most of the drainage entering the Monticello Canal is gravity fed, the additional elevation of a floodwall would keep drainage from entering the canal. This drainage would, in turn, back up in Hollygrove, unable to reach the canal and drain to the lake.

Improving drainage design to speed the movement of stormwater drainage out of the Monticello Canal and into the 17th Street Canal and the lake would allow for more water to pass through the canal at a faster rate, reducing opportunity for overtopping. By keeping the canal free of obstructing debris and undesired plant growth through proper maintenance, drainage can pass unobstructed. An August 16, 2010 visit to the canal showed that little debris clogged the canal, but that a large amount of growth needed to be removed to keep waters from being obstructed. Reducing constriction of the canal would also improve drainage. When a canal must pass through a smaller opening, water backs up and slows down as the amount that can escape through the passage is reduced. Constrictions typically occur as bridges pass over or where culverts allow water to pass under roads. The constriction in the Monticello Canal where the railroad and Airline Highway pass over may be too small to allow the necessary drainage to pass through during larger rain events. Complicating the matter is that the Upper Levee Protection Drainage Pumping Station, located in

To report a drainage problem to the Sewerage & Water Board of New Orleans:
504-529-2837
www.swbno.org/form_reportaleak.asp?s=default
Hollygrove, delivers water into the Monticello Canal at the site of the railroad constriction, thus delivering water into the canal at the point which it is least capable of accommodating it (Figure 9).

Improvements to Airline Highway are underway by the Louisiana Department of Transportation and Development, but they are for repaving.

Grants in the Study Area includes any use of the federal Hazard Mitigation Grant Program (HMGP) or the Severe Repetitive Loss program that helps resident’s access funds to pay for mitigation activities. For the purpose of this study, the use of Louisiana Recovery Authority funds was not included. Participants in this program are managed by the mitigation team of the New Orleans Office of Homeland Security and Emergency Preparedness.

Two properties in the study area are being elevated using through the HMGP program. At the time of the study, although some residents were in the process of being elevated through HMGP, there was no new HMGP funding available to residents. However, a number of homes in the Hollygrove area may qualify for elevation under the SRL Program, which was initiated by the Flood Insurance Reform Act of 1994 for the purpose of reducing SRL claims. Acquisition, demolition, floodproofing and reconstruction also may be funded through the SRL program. SRL property owners should receive notification from the mitigation team as to the process for participation in the SRL program. This is an annual program.
Additional money may be pursued through Flood Mitigation Assistance programs or other opportunities that may become available. Interested residents should contact the mitigation team at the City of New Orleans. There also may be some state HMGP funding available. For more information, contact the State’s Office for Community Development.

*Fieldwork* included visits to the site for data collection and observation. This included windshield surveys of the study area and surrounding vicinity. This data was collected on July 22, 2010 and August 15, 2010. Fieldwork showed that while two homes were being elevated through grant programs, three additional homes were either were elevated or are being elevated through other means. This pattern is repeated throughout the neighborhood. Adoption of the ABFE may require many homeowners to elevate their homes as they rebuild (Figure 10). Although many of the homes in Hollygrove were originally built prior to the adoption of Flood Insurance Rate Maps, only those who rebuilt quickly after Katrina were not held to the new standards. Hollygrove is still a neighborhood in rebound from Katrina. As plentiful as repaired at-grade ranch homes and their elevated descendants are, unrestored and unoccupied homes and empty lots are prevalent as well. Because of the adoption of higher regulatory standards, Hollygrove is likely to see much of its new construction to be in the form of an elevated structure. The Greater New Orleans Community Data Center reports that in June 2010, only 73 percent of Hollygrove properties had returned to postal service, which is 10 percent below the average for New Orleans neighborhoods.

*Building permits* were viewed at the City of New Orleans Office of Safety and Permits. Permits were examined to determine which residents were building to higher regulatory standards and which were repairing damaged buildings to Pre-FIRM elevations. In the study area, building permits confirmed that five homes had been elevated, while the majority of homeowners made post-storm repairs to at-grade homes.

*Data from residents* include information from a survey of resident about flooding issues after drainage improvements were made approximately at the time Hurricane Katrina flooded the neighborhood. The survey included not just questions about floodwaters entering the home, but also about street and yard flooding that can affect residents but does not show up in claims data. The survey from the initial visit asked questions about the types of flooding residents experienced throughout their tenure. Residents identified overbank flooding from nearby canals (81%), clogged or undersized canals (63%), storm surge from nearby waterways (45%), storm sewer backup (36%) and standing water next to house (27%) as...
sources for at least one fifth of the 33 respondents from the neighborhood. Every respondent had been flooded or experienced a water problem, many on multiple occurrences.

**Problem Statement:** Flooding in the Hollygrove Area comes from the following sources:

- Large precipitation events that exceed pumping capacity or the 10-year capacity of the drainage network. The pumping capacity for Orleans Parish is roughly 1 inch of precipitation the first hour and one-half inch each additional hour;
- Heavy downpours that cause quick surges in the drainage system,
  - Heavy downpours can carry debris and uproot plants in the channel clogging it in areas where the water is forced to slow down, such as bends or constrictions of the channel.
  - Heavy downpours can exceed the capacity of a canal's most constricted point, causing a slow down and rise in the channel, and possible exceeding of the banks.
- Changes in the drainage network south of Hollygrove will result in more water filtering through the area. The South Claiborne Avenue SELA project will increase levels of water in the Monticello Canal, and the Corps is currently analyzing how much increase is to be expected.
- Low elevation makes area susceptible to flooding; nearly the entire area in an area with a greater than 1 percent annual chance of flooding.
- The existence of a floodwall 5 feet higher on the Jefferson Parish side of the Monticello Canal protects overbank flooding from entering the western back, and diverts all overbank flooding to the Hollygrove side. It is important to note that the addition of a floodwall on the Orleans Parish side may impede regular drainage from reaching the canal. However, uneven banks exacerbates the amount of flooding on the lower side, as the low-lying area serves as a temporary floodplain to the flooded stream.
- Levee or pump failure during a tropical storm can inundate the area at a depth reported to be as high as 9 feet during Hurricane Katrina;
  - Excessive flooding, as during Katrina, may sit for many days or weeks.

*What has been done to improve the problem:* A number of activities have been undertaken in the area by governmental agencies and by individual property owners to mitigate flood losses in the area. Structural mitigation activities are those that require advanced engineering, such as drainage network improvements and levee construction. Non-structural methods include actions that homeowners can take to protect themselves, such as elevation and flood insurance, and
governmental actions that mitigate flooding such as the adoption of higher regulatory standards and land-use regulation. In Hollygrove, a combination of structural measures and non-structural have led to improved conditions. Among those improvements are:

- Improvements to the drainage network in the area, including increased pumping capacity and improved culverts. This work was undertaken through the SELA project.
- Property owner protection measures, such as elevation and regarding of yards. Respondent reported sandbagging, waterproofing, elevating utilities and regarding yards as popular methods of mitigation. Most respondents report owning flood insurance.
- Higher regulatory standards established by the adoption by the City of New Orleans of ABFE, means that many residents have to rebuild to higher elevations;
- At least two homeowners have accessed HMGP funding through the City of New Orleans and FEMA to elevate their homes to a safer height. Others in the area are elevating on their own.
- Pump-to-the-River support garnered attention at the federal level, and while the effort failed to gain authorization, resident and political support may lead to a re-evaluation of the plan at a later date.

Recommendations: The original report identified two areas of emphasis for improvements: drainage and mitigation.

A. Drainage: The chief problem was and remains the constriction of the Monticello Canal at the site where the railroad tracks and Airline Highway pass over it. The City of New Orleans Council and representatives from Jefferson Parish have taken actions to promote the replacement of the culvert, however, the undersized culvert is still in place at this time. Until this area can be improved, it is critical that the New Orleans Sewerage & Water Board maintain the Monticello Canal at a very high standard by regularly removing debris and foliage, especially before significant rainfall events. Although progress has been made in drainage improvements, the South Claiborne Avenue improvements may threaten progress in the area. Residents should look for the report on the project that should arrive near the end of 2010 to determine if the project will tax the existing drainage network in Hollygrove.

B. Mitigation Measures: A number of mitigation activities are under way by property owners in the area. Among those activities that are effective for the area are:

- Flood Insurance protection. Flood insurance provides financial protection from all storms. While many activities may help protect from regular flooding, a large event is always possible. Obtaining and maintaining flood insurance also allows homeowners to access the maximum amount of aid after a large disaster.
- Elevating, dry floodproofing, and floodwalls around a house are all activities that homeowners can adopt on their own. Elevating a home above anticipated floodwaters
keeps the structure intact and contents dry. Elevation can be costly, especially for the slab-on-grade homes prevalent in Hollygrove, but grant programs and Increased Cost of Compliance (ICC) funding can help reduce the financial burden. Dry floodproofing is a process of making a building water-tight. However, this process sometimes seeps during long-term flooding. A final alternative for shallow flooding is a floodwall built around the house. Although this is a common after-market solution, soil characteristics in the area suggest that under-wall seepage through the soil is likely to occur. To accommodate a floodwall, additional foundation work would likely be necessary. With all floodwalls, a sump pump will be necessary to pump collected rain out of the pump. This pump should be designed to work if electricity fails.