

Chapter 7. Emergency Services

Emergency services measures protect people during and after a disaster. A good emergency management program addresses all hazards and involves all City departments. At the state level, programs are coordinated by the Governor's Office of Homeland Security and Emergency Preparedness (GOHSEP). Jefferson Parish emergency services are coordinated through the Parish's Department of Emergency Management (DEM). The City relies heavily on the Parish, but is developing its own emergency management plan. Work on this is led by the Director of the Department of Public Works.

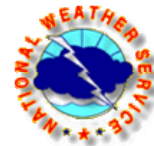
This chapter reviews emergency services measures following a chronological order of responding to a flood:

- 7.1. Threat recognition – identifying an oncoming problem before it hits
- 7.2. Warning – getting the word out
- 7.3. Response – doing what can be done in the time available
- 7.4. Evacuation and shelter – getting people out of harm's way
- 7.5. Recovery and mitigation – clean up, repair and preparing for the next one

7.1. Threat Recognition

Background: The first step in responding to a hurricane, tropical storm, or other cause of flooding is knowing when weather conditions are such that an event could occur. With a proper and timely threat recognition system, advance warnings can be disseminated.

The National Weather Services' National Hurricane Center in Miami monitors all tropical storm and hurricane activity. It uses computer models to estimate where the storm will make landfall, the predicted wind speeds and the likely storm surge levels. These predictions are updated periodically and disseminated to the media and through emergency management channels. A storm watch can be issued several days in advance of landfall. Warnings are issued and revised to be more accurate as the storm approaches.



The Hurricane Center runs the predicted storm through a computer model called SLOSH (Sea, Lake, and Overland Surges from Hurricanes). This provides information on how deep and how far inland storm surges are expected to go.

The National Weather Service's Weather Forecast Office for New Orleans/Baton Rouge is located in Slidell, Louisiana. It is responsible for severe weather warnings for 22 parishes. This office issues warnings for flash floods, severe thunderstorms, and other local meteorological hazards.

The Weather Service's Lower Mississippi River Forecast Center is also in Slidell. The Center tracks data, such as rainfall, snow cover, soil moisture, and upstream gage readings, that can help predict a flood on the Mississippi River. The Center can calculate subsequent flood levels and provide several days of warning before the area is inundated.

The National Weather Service is in the U.S. Department of Commerce's National Oceanic and Atmospheric Administration (NOAA). Forecasts of expected river stages are made through the Advanced Hydrologic Prediction Service of the National Weather Service. Flood threat predictions and severe weather warnings are disseminated on the NOAA Weather Wire or NOAA Weather Radio. NOAA Weather Radio is considered by the federal government as the official source for weather information.



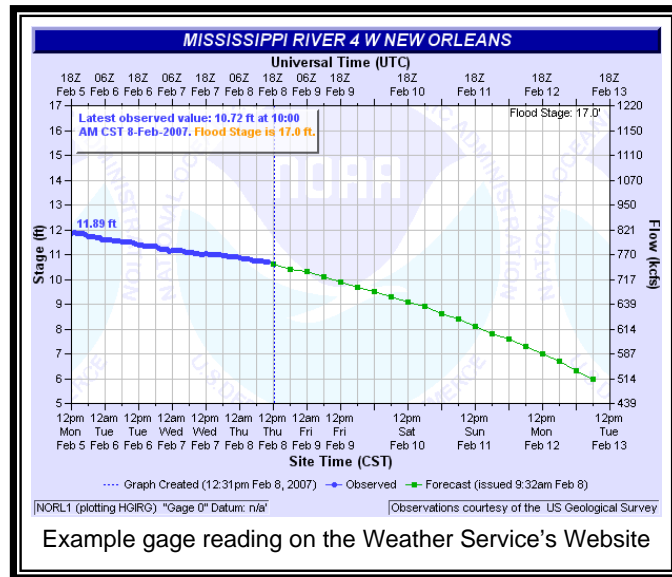
While the National Weather Service is the prime agency for detecting meteorological threats, the Federal agency can only look at the large scale, e.g., whether storm clouds are approaching the area and whether conditions are appropriate for heavy rains. Local emergency managers can provide more site-specific and timely recognition by sending out trained spotters to watch the skies when the Weather Service issues a thunderstorm watch or warning.



Implementation in Gretna: The Parish DEM monitors NOAA's Weather Wire and Radio. As the threat level increases, the DEM gears up for action, staffs the Emergency Operations Center, issues standby notices to shelters, etc.

DEM has the SLOSH model in-house and can run it based on data from the National Hurricane Center. This allows the Parish to know where the worst hit areas will likely be and where to issue evacuation orders.

The River Forecast Center's river gage information is disseminated on the NOAA Weather Wire and is available to the public at <http://ahps.srh.noaa.gov/index.php?wfo=lix>. By clicking on "New Orleans," anyone can see the current and predicted Mississippi River level. An example is in the graph to the right. It shows that the Weather Service can issue Mississippi River predictions five days in advance (green dotted line).



Example gage reading on the Weather Service's Website

The Parish DEM relies on the Weather service for severe local storm warnings. It does not have its own team of volunteers or weather spotters.



CRS Credit: Credit can be received for utilizing National Hurricane Center warnings and river flood stage predictions. A total of 40 points is possible under Activity 610 – Flood Warning Program.

As the manager of the flood warning and response program, Jefferson Parish applied for and is receiving the maximum 40 points of credit. Gretna is not receiving credit, even though the program covers the City.

7.2. Warning

Background: After the threat recognition system tells the emergency management office that a hurricane, storm, or flood is coming, the next step is to notify the public and staff of other agencies and critical facilities. The earlier and the more specific the warning, the greater the number of people who can implement protection measures.

The National Weather Service issues notices to the public using two levels of notification:

Watch: conditions are right for flooding or thunderstorms.

Warning: a flood has started or has been observed.

A more specific warning may be disseminated by the community in a variety of ways. The following are the more common methods:

- Commercial or public radio or TV stations
- Cable TV emergency news inserts
- Telephone trees/mass telephone notification
- NOAA Weather Radio
- Outdoor warning sirens
- Sirens on public safety vehicles
- Door-to-door contact
- Mobile public address systems
- E-mail notifications



Multiple or redundant systems are most effective – if people do not hear one warning, they may still get the message from another part of the system. Each has advantages and disadvantages:

- Radio and television provide a lot of information, but people have to know when to turn them on. They are most appropriate for hazards that develop over more than a day, such as a tropical storm or hurricane.
- NOAA Weather Radio can provide short messages of any impending weather hazard or emergency and advise people to turn on their radios or televisions, but not everyone has a Weather Radio.
- Outdoor warning sirens can reach many people quickly as long as they are outdoors. They do not reach people in tightly-insulated buildings or those around loud noise, such as at a factory, during a thunderstorm, or in air conditioned homes. They do not explain what hazard is coming, but people should know to turn on a radio or television.

NOAA Weather Radios

NOAA Weather Radio is a nationwide network of radio stations that broadcasts warnings, watches, forecasts and other hazard information 24 hours a day. For Jefferson Parish, information comes from transmitters in New Orleans and Bogalusa.

NOAA weather radios can be very effective for notifying people, businesses, schools, care facilities, etc., of weather threats. They have a monitoring feature that issues an alarm when activated by the Weather Service.

- Automated telephone notification services are also fast, but can be expensive and do not work when phone lines are down. Nor do they work for unlisted numbers and calling screener services (although people can sign up for notifications).
- Where a threat has a longer lead time, going door-to-door and manual telephone trees can be effective.

Just as important as issuing a warning is telling people what to do. A warning program should have a public information aspect. People need to know the difference between a tornado warning (when they should seek shelter in low spot) and a flood warning (when they should stay out of low areas).

StormReady: The National Weather Service established the StormReady program to help local governments improve the timeliness and effectiveness of hazardous weather related warnings for the public.



To be officially StormReady, a community must:

- Establish a 24-hour warning point and emergency operations center,
- Have more than one way to receive severe weather warnings and forecasts and to alert the public,
- Create a system that monitors weather conditions locally,
- Promote the importance of public readiness through community seminars, and
- Develop a formal hazardous weather plan, which includes training severe weather spotters and holding emergency exercises.

Being designated as a StormReady community by the Weather Service is a good measure of a community's emergency warning program for weather hazards. It is also credited by the Community Rating System.



Implementation in Gretna: Given the long lead time for a hurricane, tropical storm, or Mississippi River flood, the Parish's DEM warnings are issued primarily via news releases to the media. The Parish has worked with the Emergency Alert System and can implement a cable TV override system that can send an emergency message to everyone watching television or listening to a radio. Instructions to residents state:

...warnings are routinely disseminated through the Emergency Alert System (EAS). Upon notification, three (3) short dual tones will be heard over TV and radio stations, citizens should immediately tune to Cox Cable TV, Channel 6 (Government Access Channel) or in the event of the lack of cable TV, WWL Radio 870 AM or 101.9 FM for initial warning information and subsequent updates.

DEM is preparing a plan that calls on local fire companies to use their sirens when notified of severe weather. It also encourages the use of NOAA Weather Radios. The City of Gretna is investigating having a "reverse 911" telephone calling system and a special radio station that can broadcast locally pertinent messages during emergencies.

StormReady: There are currently only four Louisiana communities in StormReady. All of them are in the western and northwestern part of the state.



CRS Credit: Community Rating System points are based on the number and types of warning media that can reach the community's floodprone population. Communities can receive up to 60 points for having several different but complementary systems. The Parish's system currently receives the maximum 60 points.

Being designated as a StormReady community can provide 25 more points. These credits are in Activity 610 – Flood Warning Program.

7.3. Response

Background: The protection of life and property is the most important task of emergency responders. Concurrent with threat recognition and issuing warnings, a community should respond with actions that can prevent or reduce injuries and damage. Typical actions and responding parties include the following:

- Activating the emergency operations center (emergency management),
- Closing streets or bridges (police or public works),
- Shutting off power to threatened areas (utility company),
- Passing out sand and sandbags (public works),
- Holding children at school/releasing children from school (school superintendent),
- Opening evacuation shelters (Red Cross),
- Monitoring water levels (engineering), and
- Establishing security and other protection measures (police/sheriff).

An emergency action plan ensures that all bases are covered and that the response activities are appropriate for the expected threat. These plans are developed in coordination with the agencies or offices that are given various responsibilities.



Emergency response planning helps ensure that many different offices and organizations work together and that response activities are implemented in a timely manner.

Emergency response plans should be updated annually to keep contact names and telephone numbers current and to make sure that supplies and equipment that will be needed are still available. They should be critiqued and revised after disasters and exercises to take advantage of the lessons learned and changing conditions. The end result is a coordinated effort implemented by people who have experience working together so that available resources will be used in the most efficient manner.



Implementation in Gretna: The Parish is revising its emergency operations plans to incorporate lessons learned from Katrina. Parts have been published on the Parish’s website, www.jeffparish.net/index.cfm?DocID=5040. The City is currently drafting its own emergency operations plan.

Both planning efforts follow the recently released guidance from the Department of Homeland Security, which calls for every community to have a plan that is based on the National Incident Management System (NIMS). NIMS was designed to work with emergencies that have no warning and that unfold quickly, such as an earthquake or terrorist incident. Its objective is to have consistent arrangements at all levels of government to facilitate coordination and cooperation by emergency managers.

NIMS is designed to be flexible so the community can respond to different situations. The City’s draft focuses on assigning responsibilities to various City offices, such as communications, emergency procurement, and public information.

Parish and City staff have experience working together and responding to disasters, especially tropical storms and flooding. Some emergency response plans have annexes for specific natural hazards, such as flooding or hurricanes. The Parish’s and City’s drafts have not yet gotten that far.



CRS Credit: Up to 50 points are provided based on the level of detail of the community’s flood response plan. A generic plan, such as some NIMS plans without flood-specific instructions, may not receive any credit under CRS Activity 610 – Flood Warning Program. The Parish has been receiving 30 points, but it is not clear what score the new plan would receive.

7.4. Evacuation and Shelter

Background: Evacuation is a prime life safety concern in areas subject to the tremendous forces that accompany hurricanes. Given the days of lead time provided by the National Hurricane Center, evacuation on a large scale is a realistic lifesaving task.

“The principle of evacuation is to move citizens from a place of relative danger to a place of relative safety, via a route that does not pose significant danger.” (Emergency Management: Principles and Practice, p. 219) There are five key ingredients to a successful evacuation:

- Adequate warning
- Adequate routes

- Traffic control
- Knowledgeable travelers
- Care for special populations (e.g., handicapped, prisoners, hospital patients, and school children)

Those who cannot get out of harms' way need shelter. For tropical storms, a stick-built house (not a mobile home) often suffices, but for hurricanes, something sturdier is needed. That is why schools so often serve as shelters during a storm as well as a place for those who have lost their homes after the storm.



Typically, the Red Cross will staff a shelter and ensure that there is adequate food, bedding and washing facilities. Shelter management is a specialized skill. Managers must deal with problems like scared children, families that want to bring their pets in, and the potential for an overcrowded facility.



Implementation in Gretna: GOHSEP and other state agencies have developed a three phase evacuation plan for southeast Louisiana:

- Phase 1 - 50 Hours before onset of tropical storm winds. Includes areas south of the Intracoastal Waterway. These areas are outside any levee protection system and are vulnerable to Category 1 and 2 storms. During Phase 1, there are no route restrictions.
- Phase II - 40 Hours before onset of tropical storm winds. Includes areas south of the Mississippi River which are levee protected but remain vulnerable to Category 2 or higher storms. During Phase II, there are no route restrictions.
- Phase III - 30 Hours before onset of tropical storm winds. Includes areas on the East Bank of the Mississippi in the New Orleans Metropolitan Area which are within the levee protection system but remain vulnerable to a slow-moving Category 3 or any Category 4 or 5 storm. During Phase III, certain routes will be directed and the Contraflow Plan implemented.



The Contraflow Plan allows for the conversion of four lane divided highways from two way traffic to one way traffic. All lanes become devoted to traffic moving away from the New Orleans metropolitan area. Maps of the plan are widely distributed throughout the area each year. The system worked during the days before Katrina, although there was much publicity about those who did not evacuate.

The new draft Parish emergency plan has a “Publicly Assisted Evacuation” section for those who don’t own a vehicle or cannot drive. It calls for the use of Parish transit buses to take people to one of two Parish Pick Up Points, one on each side of the River (the West Bank Pick Up Point Alario Center). At these points, people will be transferred to transportation arranged by the state (GOHSEP) and taken to an assigned shelter. Evacuees needing special assistance will be picked up by the Mobility Impaired Transit (MITS) vans and taken to the Pick Up Points.

Sheltering is assigned to the Red Cross under the Parish and draft City plan. However, it is hoped that everyone will evacuate in advance of a storm big enough to make people homeless.



CRS Credit: Because it is primarily concerned with protecting insurable buildings, the CRS does not provide any special credit for evacuation or sheltering of people. It is assumed that the emergency response plan would include all necessary actions in response to a flood.

7.5. Recovery and Mitigation

Background: After a disaster, communities should undertake activities to protect public health and safety and facilitate recovery. Appropriate measures include:

- Patrolling evacuated areas to prevent looting,
- Providing safe drinking water,
- Monitoring for diseases,
- Vaccinating residents for tetanus,
- Clearing streets, and
- Cleaning up debris and garbage.

Throughout the recovery phase, everyone wants to get “back to normal.” The problem is, “normal” means the way they were before the disaster, exposed to repeated damage from future disasters. There should be an effort to help prepare people and property for the next disaster. Such an effort would include:

- Public information activities to advise residents about mitigation measures they can incorporate into their reconstruction work,
- Evaluating damaged public facilities to identify mitigation measures that can be included during repairs,
- Acquiring substantially or repeatedly damaged properties from willing sellers,
- Planning for long term mitigation activities, and
- Applying for post-disaster mitigation funds.

Regulating reconstruction: Requiring permits for building repairs and conducting inspections are vital activities to ensure that damaged structures are safe for people to re-enter and repair.

There is a special requirement to do this in AE Zones, regardless of the type of disaster or cause of damage. The National Flood Insurance Program requires that local officials enforce the substantial damage regulations. These rules require that if the cost to repair a building in the mapped floodplain (AE Zones) equals or exceeds 50% of the building’s market value, the building must be retrofitted to meet the standards of a new building in the floodplain. In most cases, this means that a substantially damaged building must be elevated above the base flood elevation.

This requirement can be very difficult for understaffed and overworked offices after a disaster. If these activities are not carried out properly, not only does the community miss a tremendous opportunity to redevelop or clear out a hazardous area, it may be violating its obligations under the NFIP. In some areas, mutual aid agreements have been established so building inspectors from a community not affected by the disaster can work in the communities that were hit the hardest.



Implementation in Gretna:

Following Hurricane Katrina, there have been many lessons

learned about recovery operations. The Parish's draft new emergency operations plan has an "Evacuation Re-Entry Plan" which provides for a phased return of evacuees. The plan concentrates on when people can be allowed back and who can come back early. It does not mention public information or mitigation activities that could be implemented during this time.

After Hurricane Katrina, FEMA provided special field teams to augment local permit staff. They used FEMA's Residential Substantial Damage Estimator software to identify buildings in the AE Zones that appeared to be substantially damaged. Some 65 properties were so identified. More detailed review found that most were not substantially damaged, but the process proved most helpful to City staff.

GOHSEP has published a *Disaster Recovery Manual* and a *Damage Assessment* handout with guidance for communities. They focus on damage assessment and requesting assistance. The *Manual* mentions the NFIP and rules for repairing structures where there is a Federal interest, but it does not provide guidance on inspecting buildings. There is one page on public information, but it does not mention messages on reconstruction rules or mitigation. The hazard mitigation section just explains the FEMA grant programs.

The City's draft planning work has not gotten to incorporating mitigation measures during recovery and reconstruction.



CRS Credit: There are no written post-disaster mitigation procedures that would warrant CRS credit. If some were developed and adopted, up to 10 points could be provided under Activity 510 – Floodplain Management Planning.

7.6. Conclusions

1. The City depends on the Parish which depends on the National Weather Service for advance notification of hurricanes, tropical storms, high river levels, and local storms. This system works.
2. The system used to disseminate warnings to the public depends on radio, television and cable TV. These media should reach most people who need to know of the threat of a major storm or river flood. New approaches are being set up to warn people of threats with short lead time, such as tornadoes and severe thunderstorms.
3. The Parish has not been designated a StormReady community, but it might not be much work to qualify.
4. The City and the Parish are revising their emergency response plans to conform to the National Incident Management System and to incorporate lessons learned from Hurricanes Katrina and Rita. Flood-specific sections have not yet been drafted. Such guidance could be very helpful when things happen quickly and for hazards that have predictable impacts, such as tropical storms and flooding.
5. The State, Parish, and City have experience in coordinating evacuation activities in advance of a hurricane. New plans have been or are being prepared to improve these activities.
6. There are no specific plans or guidance documents on post-disaster inspections and capitalizing on post-disaster mitigation opportunities.
7. It is not clear if the Parish will keep all of its CRS credit under Activity 610 – Flood Warning Program after the emergency operations plan is revised. It is also not clear why the City has not also been receiving this credit.

7.7. Recommendations

The following recommendations are made in light of the five goals set for this plan (see page 3-6.)

- 7-1. The City and the Parish should continue their efforts to develop measures that will warn people of local, quickly forming, thunderstorms and flash floods.
- 7-2. The City and the Parish should complete their draft emergency operations plans.
- 7-3. The draft plans should be given a “courtesy review” by the CRS flood warning plan reviewer to see if changes would be needed to maintain or improve the Parish’s score and to ensure that the City receives the credit it deserves.

Mitigation Plan Goals
1. Protect critical facilities and utilities
2. Protect lives and health
3. Protect homes, businesses, and schools
4. Minimize costs to the City and property owners
5. Ensure that new construction supports these goals

7-4. The City and Parish's emergency preparedness, public information, and permits staffs should work together to develop post-disaster procedures for public information, reconstruction regulation, and mitigation project identification.

7.8. References

- *CRS Coordinator's Manual*, Community Rating System, FEMA, 2006
- *CRS Credit for Flood Warning Programs*, FEMA, 2006
- *Disaster Recovery Manual*, Louisiana Office of Emergency Preparedness, 2002
- *Emergency Management: Principles and Practice for Local Government*, International City Management Association, 1991.
- *Guidelines on Community Local Flood Warning and Response Systems*, Federal Interagency Advisory Committee on Water Data, 1985
- Information on StormReady communities can be found on the National Weather Service website, www.nws.noaa.gov/stormready/
- Interview with Jack Griffin, Director of Public Works
- Interview with Mel Ryan, Assistant Director, Jefferson Parish Department of Emergency Management
- Various National Weather Service websites
- Websites of Jefferson Parish, City of Gretna, and the Governor's Office of Homeland Security and Emergency Preparedness (GOHSEP)