Attachment c1-1
Terrebonne Parish Hazard Mitigation Plan Update Committee

Last	First	Affiliation	Agency	Title	Email
Larpenter	Jerry	Government	Terrebonne Parish Sheriff's Office	Sheriff	jlarpenter@tpso.net
Sobert	Michael	Government	Consolidated Waterworks District	General Manager	msobert@tpcg.org
Marmande	Mitch	Government	Terrebonne Levee and Conservation District	Executive Director	mitch.marmande@tbsmith.com
LeBlanc	Kathy	Government	Louisiana Department of Health & Human Services	Sanitarian	
Adams	Philip	Public	Terrebonne Parish Assessor's Office		philtpassessor@bellsouth.net
Moore	Jack	Public	Terrebonne Parish School District	Risk Manager	jackmoore@tpsd.org
Case	Peggy	Public	Terrebonne Parish Readiness and Assistance Coalition	Executive Director	pegcase@trac-la.com
Waitz	David	Public	David Waitz Engineering & Surveying		dwaitz1@bellsouth.net
Schexnayder	Phil	Public	Gulf South Engineering Associates, Inc.		philschexnayder@providenceeng.com
Carlos	Suzanne	Public	Houma-Terrebonne Chamber of Commerce	Chief Executive Officer	suzanne@houmachamber.com
Cloutier	Dr. Budd	Public	Regulatory Planning Commission	Chair	cloutier_eyecare@hotmail.com
Underwood	Jason	Public	South Central Industrial Association (SCIA)		jason@amgulffab.com
Maloz	Simone	Public	Restore or Retreat	Executive Director	simone.maloz@nicholls.edu
Smith	Kenneth	Public	T. Baker Smith	President & CEO	kenneths@tbsmith.com
Crispino	Steve	Public	South Louisiana Bank	Vice President	stevec@ayeee.com
Biegler	Mary	Public	Bayou Grace	Executive Director	bayougrace@bayougrace.org
Dardar	Shirell	Public	Grand Caillou/Dulac Band of Biloxi-Chitimacha-Choctaw	Chief	shirellpearldardar@yahoo.com
Naquin	Albert	Public	Isle de Jean Charles Band of Biloxi-Chitimacha-Choctaw	Traditional Chief	whitebuffalo@netscape.net
Gauthe	David	Public	Bayou Interfaith Shared Community Organizing	Organizer	biscodavid@yahoo.com
Dardar	Thomas	Public	United Houma Nation	Principal Chief	thomas.dardar@unitedhoumanation.org
Cehan	Connie	Public	Terrebonne Parish School District		conniecehan@tpsd.org
Bourg	Tom	Government	Terrebonne Parish Consolidated Government	Utility Director	tbourg@tpcg.org
Bush	Gregory	Government	Terrebonne Parish Consolidated Government	Public Works Director	gbush@tpcg.org
Gordon	Patrick	Government	Terrebonne Parish Consolidated Government	Director of Planning and Zoning	pgordon@tpcg.org
Matherne	Nicholas	Government	Terrebonne Parish Consolidated Government	Director of Coastal Restoration and Preservation	
Ledet	Lisa	Government	Terrebonne Parish Consolidated Government	Floodplain Manager	lisaledet@tpcg.org
Pulaski	Chris	Government	Terrebonne Parish Consolidated Government	Senior Planner - Comprehensive Plan/ Zoning	cpulaski@tpcg.org
Eues	Earl	Government	Terrebonne Parish Consolidated Government	O.H.S.E.P. Director /911	eues@tpcg.org
Dufrene	Todd	Government	Houma Fire Department	Fire Chief	tdufrene@tpcg.org
Duplantis	Todd	Government	Houma Police Department	Uniform Commander	
Bourg	Doug	Government	Terrebonne Parish Consolidated Government	Administrative Assistant-PIO	dmbourg@tpcg.org
				Assistant Director - Building Dept/Code Enforcement. President Elect of the Building	
Large	Geoff	Government	Terrebonne Parish Consolidated Government	Official Association of Louisiana	glarge@tpcg.org
Gerbasi	Jennifer	Government	Terrebonne Parish Consolidated Government	Recovery Planner	jgerbasi@tpcg.org
Waire	Darrel	Government	Terrebonne Parish Consolidated Government	Director - Housing and Human Services	
Invited Advisors					
O'Neal	Cindy		DOTD	State Floodplain Manager	Cindy.ONeal@la.gov
Zeringue	Jerome		CPRA	CPRA Chair	Jerome.Zeringue@la.gov
Riley	Mark		GOHSEP	Deputy Director, GOHSEP	Mark.Riley@la.gov
				Legal Coordinator, LSU LA Sea Grant Law & Policy	
Daigle	Melissa		SeaGrants	Program	mtrosc2@tigers.lsu.edu

Matherne	Alan	LSU Ag Center	Area Agent (Fisheries & Coastal Issues), LSA Ag Center LA Sea Grant Marine Extension Program	amatherne@agcenter.lsu.edu
TBD		Red Cross		
RBD		National Weather Service		
Consultant				
Cutforth	Nicole	CB&I	PM	

* **The invited organizations and individuals may send a designee in their stead if unable to attend.**

Attachment c1-2
Terrebonne Parish Hazard Mitigation Plan Update Committee
Attendance Summary

Last Name	First Name	Organization	Title	Meeting 1	Meeting 2	Meeting 3	Meeting 4	Meeting 5
Adams	Phillip	TPCG Assessor's Office		X	X	X	X	X
Alford	Tony	Terrebonne Levee & Conservation District	President					
Allemand	Gwen	Proprietr Shoppe Real Estate	Realtor	X				
Amedee	Beryl	Terrebonne Parish Council	Councilwoman, District 4			X		
Arnette	Jane	South Central Industrial Association	Executive Director					
Babin	Danny	President of the Regulatory Planning Commission	Chairman					
Belanger	Wanda	Southeast LA HBA		X				
Benoit	Eric	Lafourche Parish	Asst. OEP					
Biegler	Mary	Bayou Grace	Executive Director	X	X		X	X
Boucvalt	Jobe	St. John Parish	OEP Director					
Boudreaux	Chris	Lafourche Parish	OEP Director					
Boudreaux	John	Assumption Parish	OEP Director					
Bourg	Doug	Terrebonne Parish Consolidated Government	Administrative Assistant					
Bourg	Tom	Terrebonne Parish Consolidated Government	Utility Director	X	X	X	X	X
Busy	Jetune	DPW	Engineer					
Bush	Gregory	Terrebonne Parish Consolidated Government	Public Works Director	X		X		
Carlos	Suzanne	Houma-Terrebonne Chamber of Commerce	President	X		X		
Case	Peggy	Terrebonne Parish Readiness and Assistance Coalition	Executive Director	X				
Cehan	Connie	TPSD						
Claudet	Michel	Terrebonne Parish Consolidated Government	Parish President					
Cloutier	Dr. Budd	Regulatory Planning Commission	Chair	X	X			
Crispino	Steve	South Louisiana Bank	Vice President		X			
Daigle	Melissa	SeaGrants	Legal Coordinator			X		
Dardar	Shirell	Biloxi-Chitamacha Confederation of Muskogees	Deputy Chief					
Dardar	Thomas	United Houma Nation	Principal Chief			X		
DeFrates	Arthur	Gulf South Engineering Associates, Inc.	President					
Derochie	Eric	St. James Parish	OEP Director					
Drury	David	TPCG	TPCG Facilities Manager		X			
Dufrene	Chref	Houma Fire Department	Fire Chief		X	X		X
Duplantis	Duffy	TPCG						
Duplantis	Todd	Terrebonne Parish Consolidated Government	Police Chief					
Dupre	Reggie	TLCD	Executive Director		X			
English	Nicolette	GOHSEP	Planner	X				
Eues	Earl	Terrebonne Parish Consolidated Government	O.S.H.E.P. Director		X			X
Falgout	Julie	LA SeaGrant	Seafood Industry Liaison		X			X
Gauthe	David	BISCO		X	X		X	
Gerbasi	Jennifer	Terrebonne Parish Consolidated Government	Division Manager/Recovery Planner	X	X	X	X	X
Gordon	Pat	Terrebonne Parish Consolidated Government	Planning Director	X	X	X		X
Graham	Ken	National Weather Service	Meteorologist-in-Charge					
Hamilton	Rob	Southeast Louisiana Homebuilders' Association	President					
Hebert	Aaron	Terrebonne Parish Sheriff's Office	Assistant Uniform Commander			X		
Hymel	Francis	St. James Parish	Asst. OEP					
Jefferson	Burton	LSU Ag Center	County Agent		X			
Landry	Karye	Assumption Parish	Asst. OEP					
Large	Geoff	Terrebonne Parish Consolidated Government	Assistant Director - Building Dept/ Code Enforcement	X			X	
Lapeniter	Jerry	Terrebonne Parish Sheriff's Office	Sheriff			X		
LeBlanc	Chris	Houma Courier						X
LeBlanc	Kathy	Louisiana Department of Health & Human Services	Sanitarian					
Ledet	Brad	LaDay Construction		X				
Ledet	Lisa	Terrebonne Parish Consolidated Government	Permits Specialist	X	X	X	X	X
Levron	Al	Terrebonne Parish Consolidated Government	Capital Projects Admin.					

Last Name	First Name	Organization	Title	Meeting 1	Meeting 2	Meeting 3	Meeting 4	Meeting 5
Liner	Michelle	Terrebonne Readiness and Assistance Coalition	Administratice Assistant	x	x			x
Lombardo	John	Restore and Retreat	Outreach Coordinator	x	x		x	x
Maloz	Simone	Restore and Retreat	Representative			x		
Marmonde	Mitch	Terrebonne Levee and Conservation District	Program Manager		x			
Martin	Phillip	Terrebonne Parish School District	Superintendent					
Matherne	Alan	LSU Ag Center	Area Agent		x			x
Matherne	Nicolas	Terrebonne Parish Consolidated Government	Director of Coastal Restoration				x	
Milford, III	Gene	Gene Milford and Associates, Inc	Professional Engineer					
Moore	Jack	Terrebonne Parish School District	Risk Manager	x	x	x		x
Mullarkey	Christine	Region 3 American Red Cross	Resource Manager					
Nail	Shirin	REMAX	Broker	x	x			
Naquin	Albert	Biloxi-Chitamacha Island Road Band	Chief		x			
O'Neal	Cindy	DOTD	State Floodplain Manager					
Pellegrin	Cynthia	ReMax Good Earth	Real Estate Broker	x		x		
Pena	Oscar	CB&I	Senior Vice President					
Peoples	Phyllis	Terrebonne General Medical Center	CEO					
Perry	Ron	St. Charles Parish	OEP Director					
Peterson	Kris							
Poche	Charlette	Terrebonne Parish Council	Council Clerk					
Pulaski	Chris	Terrebonne Parish Consolidated Government	Senior Planner	x	x	x		x
Riley	Mark	GOHSEP	Deputy Director, GOHSEP					
Rivette	Frank	National Weather Service	Meteorolgist					
Roussel	Pam	GOHSEP						x
Rutter	Lea	Lea Rutter Homes, Inc.	Builder	x				
Schexnayder	Phil	Gulf South Engineering Associates, Inc.	Tech. Engineer		x			
Shaw	Ronnie					x		
Sobert	Michael	Consolidated Waterworks District	General Manager	x	x	x		
Smith	Kenneth	T. Baker Smith, Inc.	President/CEO					
Tastet	Jason	St. Charles Parish	OEP					
Underwood	Jason	South Central Industrial Association						
Waire	Darrell	Terrebonne Parish Housing and Human Services	Director		x	x		
Waitz	David	David Waitz Engineering & Surveying	Professional Engineer	x				x
Wilson	Lex	Courier	Photographer		x			
Zeringue	Jerome	Terrebonne Levee & Conservation District	Executive Director					

Attachment c1-3.1A
Meeting 1—Advertisement

x053690, Publication 05/14/2014

Public Notice
Meeting Announcement
Terrebonne Parish Hazard Mitigation Plan Update 2015

The Terrebonne Parish Consolidated Government is updating the parish's Hazard Mitigation Plan. The purpose of the plan update is to identify and pursue preventative measures that will reduce future damages from natural hazards. During this kickoff meeting, the Steering Committee and anyone interested in participating will define the planning process, discuss a ways to encourage and facilitate public input and participation, and review the existing plan to see what has been accomplished and what remains to be accomplished or improved. The public is encouraged to attend this meeting.

Thursday, May 22, 2014 at 2:00PM
8026 Main Street, Second Floor
Council Meeting Room
Houma, Louisiana

Please direct questions about the meeting to Nicole Cutforth, CB&I, at (225) 987-7373.

Attachment c1-3.1B
Meeting 1—Sign-in Sheets

Terrebonne Parish Hazard Mitigation Plan Update 2015 Committee Member List

MEETING NO. 1, MAY 22, 2014, 2PM, COUNCIL MEETING ROOM, 2nd FLOOR, HOUMA, LA

	SIGN IN	Last Name	First Name	Organization	Title	Contact	Email
1		Alford	Tony	Terrebonne Levee & Conservation District	President	985-851-2201	
2		Arnette	Jane	South Central Industrial Association	Executive Director		
3		Babin	Danny	President of the Regulatory Planning Commission	Chairman	985-873-6422	dbabin@tpcg.org
4		Benoit	Eric	Lafourche Parish	Asst. OEP	985-532-8174	ericb@lafourchegov.org
5		Boudreaux	Chris	Lafourche Parish	OEP Director	985-532-8174	chrisb@lafourchegov.org
6		Boudreaux	John	Assumption Parish	OEP Director	985-369-7386	johnboudreaux@assumptionoep.com
7		Boucvalt	Jobe	St. John	OEP Director	985-652-2222	j.boucvalt@stjbparish.com
8		Bourg	Doug	Terrebonne Parish Consolidated Government	Parish President Assistant	985-873-6401	dmbourg@tpcg.org
9		Bourg	Tom	Terrebonne Parish Consolidated Government	Utility Director	985-873-6755	tbourg@tpcg.org
10		Bray	Jeanne	DPW	Engineer	985-873-6841	jbray@tpcg.org
11		Bush	Gregory	Terrebonne Parish Consolidated Government	Public Works Director	985-873-6735	gbush@tpcg.org
12		Case	Peggy	Terrebonne Parish Readiness and Emergency Coalition (TPRC)	Executive Director	985-851-2952	pegcase@trac4la.com
13		Claudet	Michel	Terrebonne Parish Consolidated Government	Parish President	985-873-6401	mclaudet@tpcg.org
14		Dardar	Shirell			985-217-1474	shirellpaifaldardar@yahoo.com
15		DeFraites	Arthur	Gulf South Engineering	President	985-876-6380	arthurdefraites@providenceeng.com
16		Deroche	Eric	St. James Parish	OEP Director	225-562-2346	eric.deroche@stjamesla.com
17		Drury	David			985-873-6575	ddrury@tpcg.org
18		Dufrene	Chief			985-873-6391	tdufrene@tpcg.org
19		Duplantis	Duffy			985-873-6708	dduplantis@tpcg.org
20		Duplantis	Todd			985-873-6319	tduplantis@tpcg.org
21		Dupre	Reggie	TLCD	Executive Director	985-868-8523	rdupre@tlcd.org
22		Eues	Earl	Houma-Terrebonne Chamber of Commerce	Member	985-873-6357	eeues@tpcg.org
23		Gauthe	David				
24		Gerbasi	Jennifer	Terrebonne Parish Consolidated Government	Division Manager/Recovery Planner	985-873-6585	jgerbsi@tpcg.org
25		Gordon	Patrick	Planning and Zoning	Director	985-873-6569	pgordon@tpcg.org
26		Grabert	Haney	Houma Police	Deputy Chief	985-876-6620	grabert11@bellsouth.net
27		Graham	Ken		Meteorologist-In-Charge	985-649-0429	kenneth.graham@noaa.gov
28		Hymel	Francis	St. James Parish	Asst. OEP	225-562-2310	francis.hymel@stjamesla.com
29		Landry	Kayte	Assumption Parish	Asst. OEP	985-369-7386	kaytelandry@assumptionoep.com
30		Large	Geoff			985-873-6348	glarge@tpcg.org
31		Larpenter	Jerry	Terrebonne Parish Sheriff's Office	Sheriff	985-876-2500	
32		LeBlanc	Kathy			985-857-3770	
33		Ledet	Lisa	Terrebonne Parish Consolidated Government	Chief Building Official	985-873-6789	lisaledet@tpcg.org
34		Levron	Al	Terrebonne Parish Consolidated Government	Capital Projects Admin.	985-873-6407	allevron@tpcg.org
35		Maloz	Simone	South Central Industrial Association	Representative	985-448-4485	
36		Martin	Philip			985-876-7400	
37		Matherne	Nicolas	Terrebonne Parish	Coastal	985-873-6888	nmatherne@tpcg.org
38		Milford, III	Gene	Gene Milford and Associates	Professional Engineer	985-868-2581	milfordassociate@bellsouth.net
39		Mullarkey	Christine		Resource Manager	504-620-3108	Christine.Mullarkey@Redcross.org
40		Naquin	Albert			985-594-3725	whitebuffaloa@netscape.net
41		Pena	Oscar	CB&I	Senior Vice President	985-868-3434	oscar.pena@cbi.com
42		Peoples	Phyllis	Terrebonne General Medical Center	CEO		
43		Perry	Roni	St. Charles Parish	OEP Director	985-783-5050	rperry@stcharlesgov.net
44		Peterson	Kris				
45		Poche	Charlette	Terrebonne Parish Council	Council Clerk	985-873-6523	cdpoche@tpcg.org
46		Pulaski	Chris			985-873-6568	cpulaski@tpcg.org
47		Rivette	Frank		Meteorologist	985-649-0429	Frank.Revitte@noaa.gov
48		Schexnayder	Phil	Gulf South Engineering Associates, Inc.	Professional Engineer	985-876-6380	philschexnayder@providenceeng.com
49		Smith	Kenneth	T. Baker Smith	President/CEO	985-868-1050	kennethts@tbsmith.com
50		Sobert	Michael		General Manager	985-679-2495	msobert@tpcg.org
51		Tastet	Jason	St. Charles Parish	OEP	985-783-5050	jtastet@scpeoc.org

		Guenriot-Biegler	Mary				
52		Templeton	Rebecca	Bayou Grace	exec. director	985-594-5350	rebecca@bayougrace.org
53		Waitz	David	David Waitz Engineering	Professional Engineer	985-876-0267	dwaitz1@bellsouth.net
54		Wilson					Xerxes.Wilson@dailycomet.com
		Cloutier	Budd	Planning Comission		985-872-2020	
		Udet	Brad	LaDay Const.			
		Yesso	Joey	Wood Mgr.			
		Hyde	mike	Michael Hyde construction			
		Belanger	Wenda	Southeast LA HBA		985-688-0494	slhba@att.net
		English	Nicolette	GOHSEP	Planner	225-267-2607	nicolette.english@la.gov
		Wilson	Tony	Wilson Home Bldr			
	TRAVIS BUQUET	BUQUET	TRAVIS	TRAVIS BUQUET HOMBUILDERS LLC			
	Blake Matherne	Matherne	Blake	Matherne Home Builders LLC			
	John	PELLEGRIN	CYNTHIA	RE/MAX GOOD EARTH	REAL ESTATE BROKER	985-637-3999	
		MOORE	JACK	TERREBONNE PARISH School Board	Risk Mgr	985-876-7400	
	Suzanne	Conlay		Houma Chamber	Pres./CEO	876-5600	
		ALLEMAND	GWEN	PROPRIETE SHOPPE REALESTATE	REALTOR	985-804-5883	
	Michelle Liner	Liner	Michelle	Terrebonne Readiness and Assistance Coilation	Adm. Asst.	985 8512952	michelleliner@trac4la.com
	SHIRIN NAIL	NAIL	SHIRIN	RE/MAX GOOD EARTH	BROKER	985-637-2255	
	LEA RUTTER	RUTTER	LEA	LEA RUTTER HOMES, INC	BUILDER	985-446-1903	LEARUTTERHOMES@CHARTER.NET

Attachment c1-3.1C
Meeting 1—Meeting Agenda and Summary Meeting Notes

TERREBONNE
HAZARD MITIGATION PLAN UPDATE

5/22/2014
@ 2:00 P.M
8026 Main Street
2nd Floor Council Meeting Room
Houma, Louisiana

I. INTRODUCTIONS AND WELCOME

The Terrebonne Parish Hazard Mitigation Plan Update Committee held their first open to the public meeting at the Terrebonne Parish Council Meeting Room in Houma, Louisiana, on Thursday, May 22, 2014. The purpose of the meeting was to introduce the committee and discuss an overview of the Plan Update process. Handouts attached include an agenda, the Hazard Mitigation Plan Update from 2010, the Comprehensive Master Plan, and the mitigation project list.

Michel Claudet, Terrebonne Parish President, welcomed and thanked everyone for coming and informed them that this is a parish effort and he is thankful for the participation of attendees.

Nicole Cutforth from CB&I introduced herself and discussed that CB&I was hired by Terrebonne Parish to update the Hazard Mitigation Plan for 2015. Nicole informed the attendees that throughout the planning process we want to make sure that we are incorporating the effort into other planning processes.

Jennifer Gerbasi from Terrebonne Parish also welcomed everyone and informed the committee that if anyone else is interested in the planning process that the meetings are open to the public and all are welcome to participate. The committee was also informed that the meetings will now be held at Folklife Museum.

Nicole asked attendees to introduce themselves and provide what agency they represent.

Nicole informed everyone that there are a total of 3 meetings and there will be meeting notes mailed out along with her information if anyone has any questions or input between meetings. Also, there will be significant data gathered between meetings. Prior to the second meeting all the maps will be updated along with the project list, critical facilities list and risk

portion from the past Hazard Mitigation Plan with input from the parish and committee.

Pat Gordon, Terrebonne Parish Consolidated Government (TPCG) Planning and Zoning Director, volunteered to take the role of Committee Chair Person for Terrebonne Parish Hazard Mitigation Plan Update.

II. PURPOSE, NEED, AND EXPECTATIONS

Nicole informed the attendees about the grant that Terrebonne Parish has received to update the Hazard Mitigation Plan. The grant is a Pre-Disaster Mitigation Grant (PDM) and it flows from Federal Emergency Management Agency (FEMA) to the Governor's Office of Homeland Security and Emergency Preparedness (GOHSEP) to TPCG.

Nicole defined Hazard Mitigation Planning to the crowd and explained that it is "Planning for any sustained action(s) taken to reduce or eliminate the long-term risk to human life and property from hazards."

A few definitions that will be used throughout the planning process were discussed such as Hazard, Vulnerability, Vulnerability Assessment, Risk, and Risk Assessment.

The state (GOHSEP) is our guide in the planning process and will be attending the meetings to make sure that Terrebonne Parish is covering all topics necessary for approval. The past & present planning standards were discussed and the mitigation plan has to be updated every 5 years for TPCG to remain eligible for Hazard Mitigation Grant Program (HMGP) funds. Nicole informed the committee that this plan should be Terrebonne Parish's plan and the committee's input into this plan is much appreciated.

Terrebonne's plan was approved in 2010 but there are new hazards and criteria that need to be incorporated and including how the parish resources can be allocated to expedite the implementation of hazard mitigation projects. Input regarding the project lists that are sent out between updates is imperative to the planning process.

Nicole discussed all the new data that we need to incorporate into the new plan including vulnerability analyses, any changes in hazard identification, different flood inundation areas, where the committee thinks we should spend extra time on modeling, and progress of projects that has been made in the past 5 years. Community Rating System (CRS) principles will also be discussed in the future meetings.

The planning process was discussed and phases were described (see attached PowerPoint slide 10). The idea is to stay circling between phase

1, 2, and 3 within the planning process to ensure that there is enough input from the committee for the Hazard Mitigation Plan Update.

III. PARTICIPATION STRATEGY

Participating Agencies and a list of stakeholders on the steering committee was discussed. Nicole encouraged attendees to invite as many people as possible to attend plan update meetings.

The committee structure was discussed and what would be discussed at the meetings in the future. Nicole encouraged the committee and parish for their input on this plan as it is imperative to make it customized to Terrebonne Parish.

IV. PLAN REVIEW

Nicole discussed the existing plan overview and an overview of what this process holds.

Nicole broadly discussed the Community Rating System and how the planning process will be implemented.

Goals and Critical Facilities were discussed and will be updated throughout this plan. The committee asked to add the Civic Center, Public Works and Acadian Ambulance to the Critical Facilities list.

Nicole discussed the four tasks of risk assessment and eligible hazard mitigation projects (see handout) and discussed that the projects on the handout will be looked at for funding as it becomes available. Also, the committee was encouraged to list any projects so they can be incorporated including the following:

- Hardening or Retrofitting of Critical Facilities
- Drainage
- Increasing culvert size
- Increasing pump station capacities
- Elevation of structures that have flooded
- Safe Rooms
- Etc.

Funding and match percentages were discussed. Non-HMGP funds including PDM and Flood Mitigation Assistance (FMA), are available every year. The funding process flows from FEMA to GOSHEP to TPCG.

The hazards that are identified in the plan were discussed. Some hazards That the committee asks to add include sea level rise, coastal erosion,

sinkholes, and ice events. Also, Hurricane Lee, Atchafalaya Flooding of 2011, and May/October flooding needs to be added to the plan's flood event profiles.

Maps were discussed and will be updated for the next meeting.

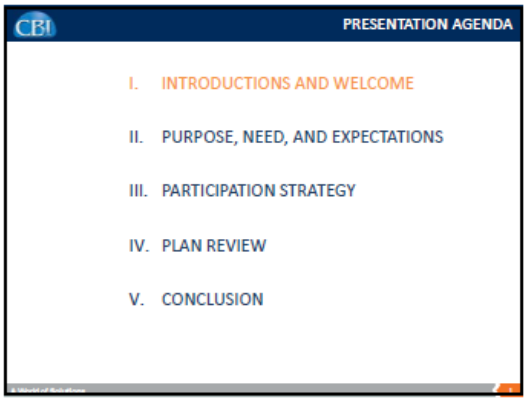
V. QUESTIONS/COMMENTS

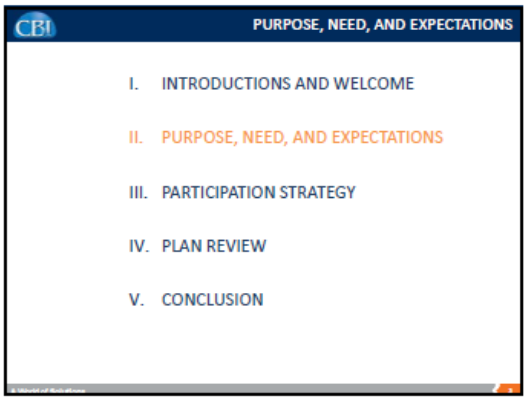
- Data that will be sent out for committee's input includes the project list, goals, etc.
- Project list needs to have all projects that can reduce damages from hazards
- Between meetings, any participation is encouraged
- Next meeting (4-6 weeks) will include Risk Assessment, Map Review/Editing, Project list/Prioritize

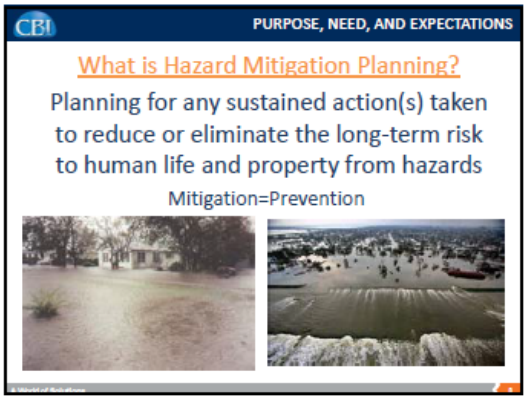
VI. CONCLUSION

VII. ADJOURN

Attachment c1-3.1D
Meeting 1—PowerPoint Presentation Slides







PURPOSE, NEED, AND EXPECTATIONS: DEFINITIONS

- Hazard—a source of **potential** danger
- Vulnerability—Degree of **exposure** or susceptibility to damage of an asset
- Vulnerability Assessment—The extent of damage that may result from a hazard event of a given intensity (50, 100 yr. flood; Cat. 1, 2, …5 hurricane)
- Risk—The **estimated impact** that a hazard would have on people, services, facilities, and structures—quantifiable
- Risk Assessment—Process of measuring the potential loss of life, personal injury, economic injury, and property damage

PURPOSE, NEED, & EXPECTATIONS: WHY HAZARD MITIGATION PLANNING?

- Why "plan"?—State approach—parishes to state
  - Establish vision and mission
  - Establish common goals
  - Incorporate the "big picture"
  - Bring many stakeholders together
  - Establish community connectivity… coordination and communications
  - Look at resource allocation (time, money, etc.)
  - Ensure ability to implement, monitor, evaluate, and modify

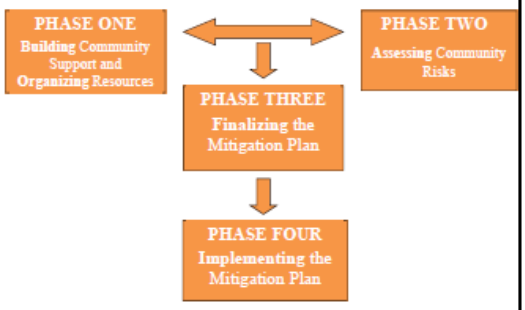
PURPOSE, NEED, & EXPECTATIONS: WHY UPDATE HAZARD MITIGATION PLAN?

- Eligibility for mitigation grant project funding
- Any changes in hazard identification
- Vulnerability analyses
- Local mitigation capabilities
- Progress made during the past five years to prevent or reduce future losses from natural hazards

PURPOSE, NEED, & EXPECTATIONS: ORIGINS

- Past: Federal legislation funded disaster relief, recovery, and some mitigation planning
  - -Standard codes and planning were linked in same law
- Present: Disaster Mitigation Act of 2000 (DMA 2000)
  - -Reinforces importance of mitigation planning before hazards occur…" to reduce the nation's disaster losses …" (FEMA Interim Final Rule)
  - -Establishes a pre-disaster hazard mitigation program
  - -Creates new requirements for national post-disaster Hazard Mitigation Grant Program (HMGP)
  - -Requires states and communities to have an approved mitigation plan in place prior to receiving post-disaster HMGP funds

PURPOSE, NEED, & EXPECTATIONS: EXPECTATIONS



LIST OF TASKS

- Planning Process
- Risk Assessment
- Mitigation Strategy
- Plan Maintenance
- Additional State Requirements
- Plan Hazard Mitigation Adoption and Approval
- Hazard Mitigation Plan Deliverables

SECTION III: PARTICIPATION STRATEGY

I. INTRODUCTIONS AND WELCOME

II. PURPOSE, NEED, AND EXPECTATIONS

III. PARTICIPATION STRATEGY

IV. PLAN REVIEW

V. CONCLUSION

PARTICIPATION STRATEGY

Participating Agencies:

City of Houma Fire Chief
David Waltz Engineering & Surveying
Gene Milford and Associates, Inc.
Gulf South Engineering Associates, Inc.
Houma-Terrebonne Chamber of Commerce
Regulatory Planning Commission
CB&I
South Central Industrial Association
T. Baker Smith
Terrebonne General Medical Center
Terrebonne Levee and Conservation District
Terrebonne Parish Consolidated Government
Terrebonne Parish Readiness and Emergency Coalition
Terrebonne Parish Sheriff's Office
Water District

PARTICIPATION STRATEGY CONTINUED

- Committee Structure
  1. Expand/Contract
  2 Steering Committee
  3. Meeting Location/Frequency?
- Developing a Plan for Public Relations & Education
- Concerns, Comments, Questions
- Other Issues?

PLAN REVIEW

I. INTRODUCTIONS AND WELCOME

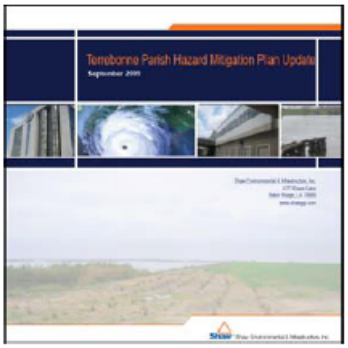
II. PURPOSE, NEED, AND EXPECTATIONS

III. PARTICIPATION STRATEGY

IV. PLAN REVIEW

V. CONCLUSION

PLAN REVIEW: TERREBONNE PARISH HAZARD MITIGATION PLAN SEPTEMBER 2009



EXISTING PLAN OVERVIEW

REVIEW AND UPDATE:

- THE PLANNING PROCESS
  - Public comment
  - Involvement in the planning process
  - Incorporate appropriate existing plans
- PLAN CONTENT
  - Documentation of the planning process
  - Risk assessment
    - Type, location, extent of all natural hazards that affect the jurisdiction
    - Jurisdiction vulnerability to the hazards, summary of each hazard and its impact on the community
      - Describe vulnerability of the types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard areas
      - Estimate of potential dollar losses

EXISTING PLAN OVERVIEW (contd.)

REVIEW AND UPDATE:

- HAZARD MITIGATION STRATEGIES
  - Goals
  - Specific mitigation actions and projects
  - Action plan with prioritization
- PLAN MAINTENANCE PROCEDURES
  - Method and schedule of monitoring, evaluating, and updating the mitigation plan
  - Process by which local government can incorporate the requirements of the mitigation plan into other planning mechanisms (comprehensive or capital improvement plans) when appropriate
  - Discussion of how community will continue public participation and plan maintenance

CRS/NFIP REQUIREMENTS

- HANDOUT
- The National Flood Insurance Program's (NFIP) Community Rating System (CRS) is a voluntary incentive program that recognizes and encourages community floodplain management activities that exceed the minimum NFIP requirements.
  - As a result, flood insurance premium rates are discounted to reflect the reduced flood risk resulting from the community actions meeting the three goals of the CRS:
  - Reduce flood damage to insurable property;
  - Strengthen and support the insurance aspects of the NFIP, and
  - Encourage a comprehensive approach to floodplain management.

http://www.fema.gov/national-flood-insurance-program-community-rating-system

EXISTING PLAN (SEPTEMBER 2009) GOALS OVERVIEW

GOAL 1 Identify and pursue preventive measures that will reduce future damages from hazards.

GOAL 2 Enhance public awareness and understanding of disaster preparedness.

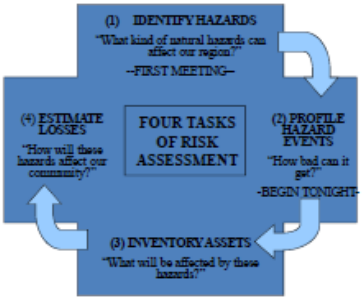
GOAL 3 Reduce repetitive flood losses in the parish.

GOAL 4 Facilitate sound development in the parish to reduce or eliminate the potential impact of hazards.

PLAN REVIEW: CRITICAL FACILITIES

- CRITICAL FACILITIES
  - HOSPITALS
  - SCHOOLS
  - POLICE STATIONS
  - FIRE STATIONS
  - POWERPLANTS
  - SEWER
  - POTABLE WATER
  - EMERGENCY OPERATIONS CENTER

RISK ASSESSMENT METHODOLOGY



ELIGIBLE HAZARD MITIGATION PROJECTS

- HARDENING OR RETROFITTING OF CRITICAL FACILITIES

ELIGIBLE HAZARD MITIGATION PROJECTS (CONTD.)

- DRAINAGE IMPROVEMENTS TO EXISTING FACILITIES

ELIGIBLE HAZARD MITIGATION PROJECTS (CONTD.)

- ELEVATION

ELIGIBLE HAZARD MITIGATION PROJECTS

- SAFE ROOMS
- 5% INITIATIVES (PUBLIC EDUCATION, WARNING SYSTEMS, GENERATORS, ETC.)

FUNDING

- MITIGATION FUNDING LEVELS HAVE VARIED…
  - PRE-KATRINA/RITA: GOHSEP FUNDING
    - TARGET=$35-40M PER YEAR
  - POST-KATRINA/RITA: HMGP=$1.5B TO AFFECTED AREAS
  - FUTURE FUNDING OF PROJECTS:=? (FUNCTION OF NEXT DISASTER EVENT)

…BUT FUNDING HAS BEEN AVAILABLE VIRTUALLY EVERY YEAR

FUNDING PROCESS

FEMA (Federal)

GOHSEP (State)

Terrebonne Parish Government

RISK ASSESSMENT: IDENTIFY HAZARDS

- Simply identify what hazards might affect the community
- Narrow the list to hazards that are most likely to impact
- Keep records of information gathered
  - News papers and other unofficial accounts
  - Federal and state data base info
  - Community expert and parish/municipal data
  - Etc.

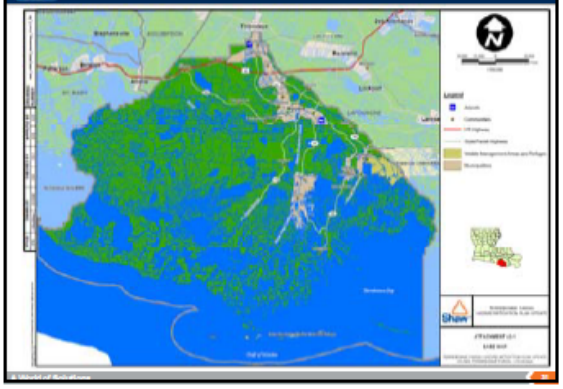
RISK ASSESSMENT: PROFILE HAZARD EVENTS

- Has your department/district suffered losses during past storm events due to flooding or wind that could have been prevented?
- Do you foresee a future scenario where your department/district might be susceptible to losses as a result of a storm event?
- Obtain and create base maps
- Obtain hazard event profile information.
- Record the hazard event profile information.

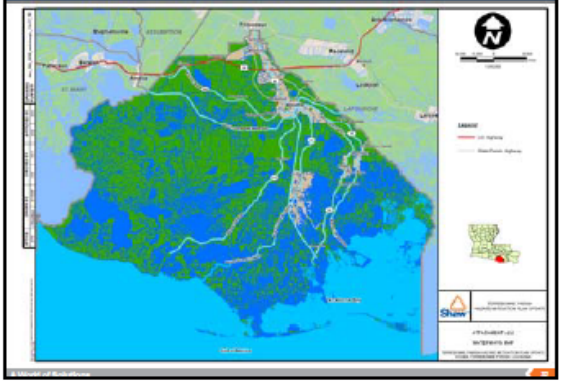
Current Plan:

- Hurricane Betsy
- Hurricane Juan
- Hurricane Andrew
- Tropical Storm Allison
- Hurricane Lili
- Hurricane Rita

IV. PLAN REVIEW - MAPS



IV. PLAN REVIEW - MAPS



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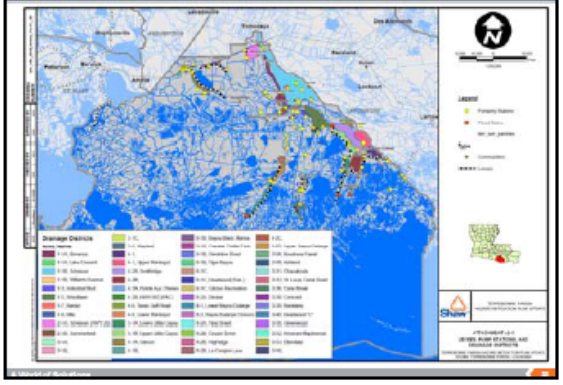

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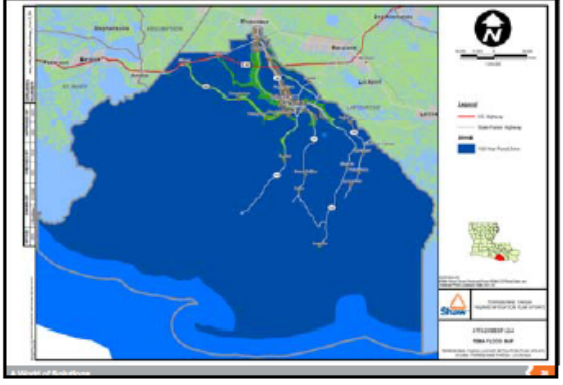

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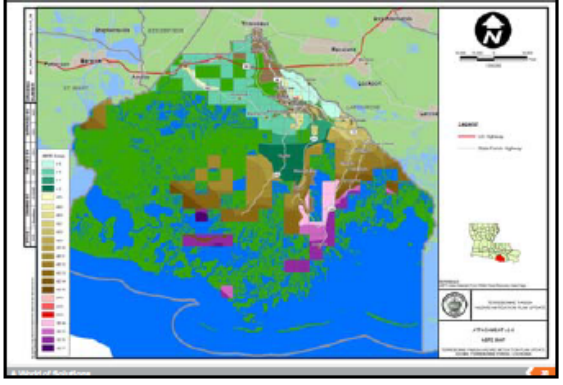

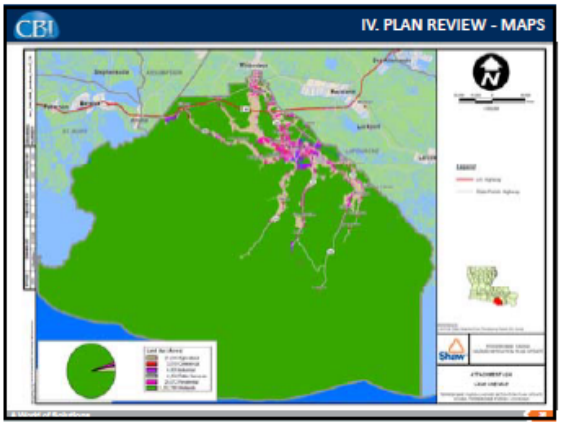

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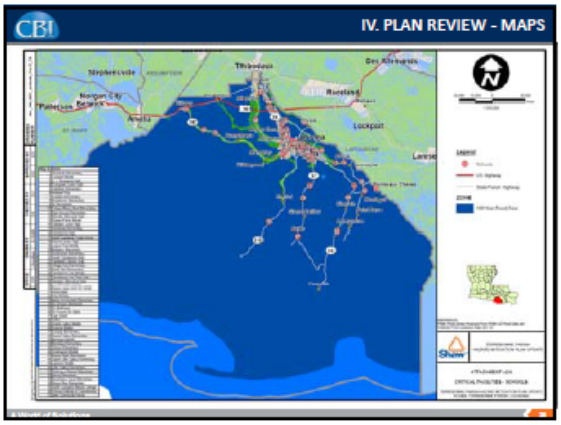

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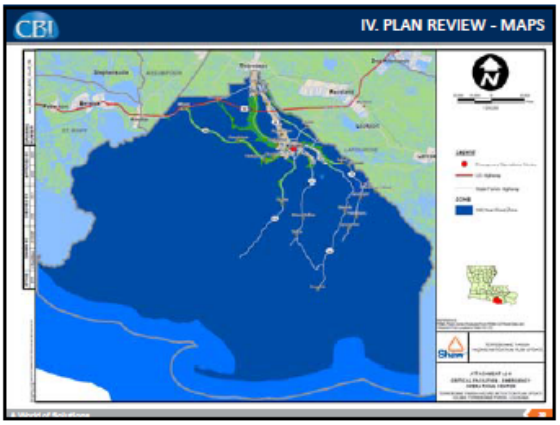

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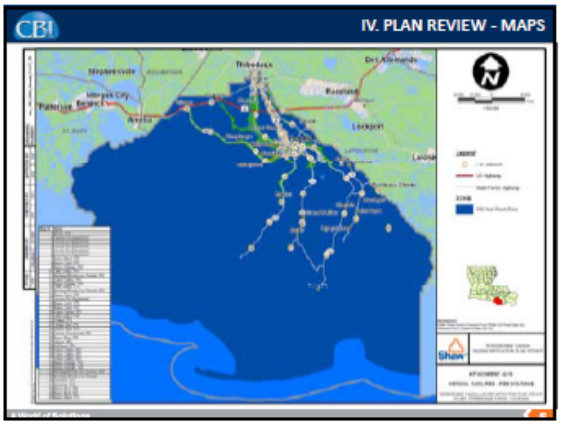

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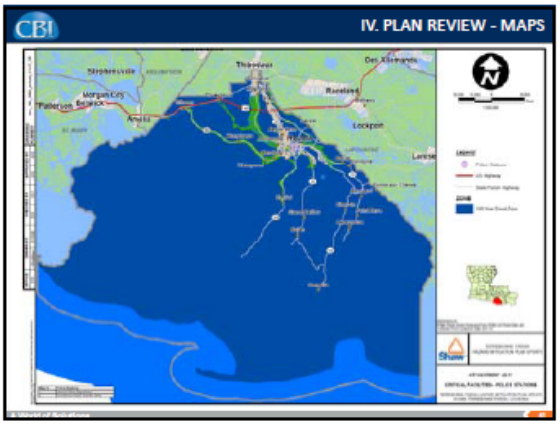

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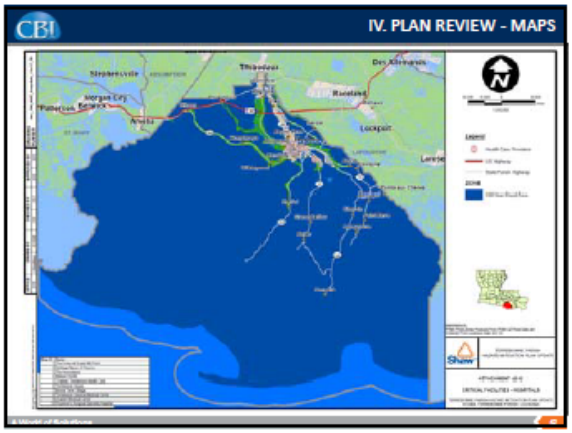

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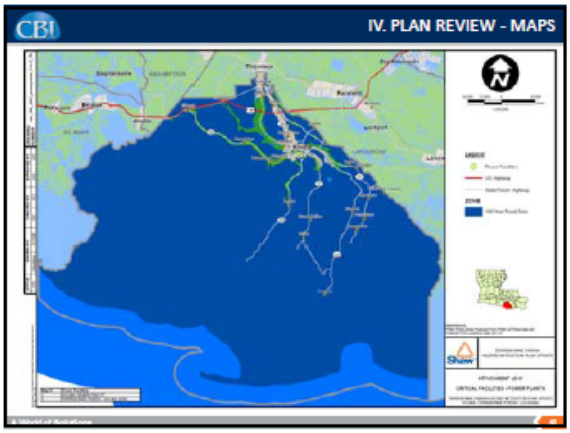

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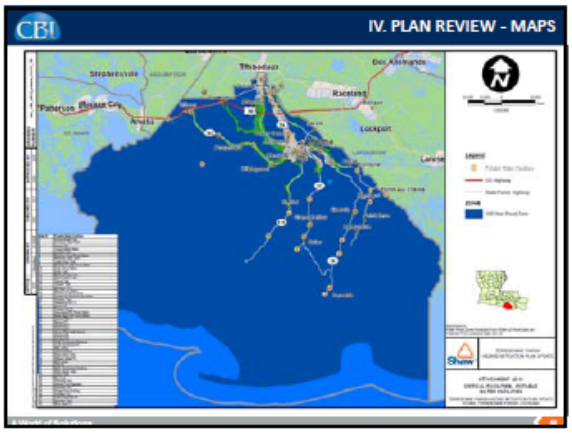

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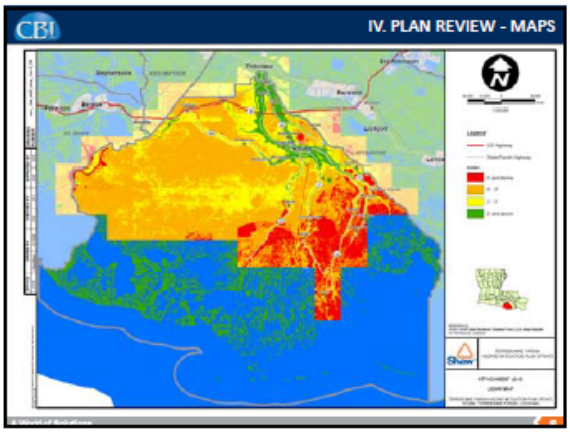

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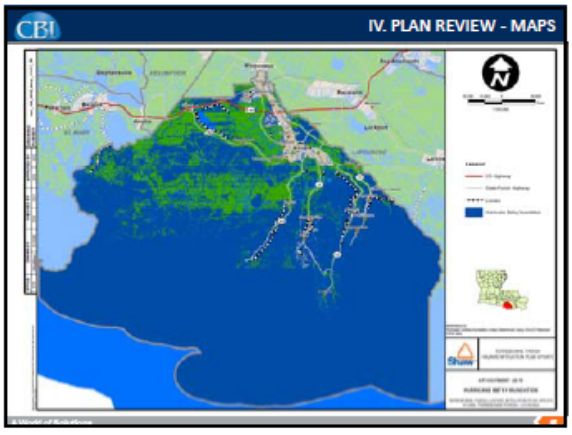

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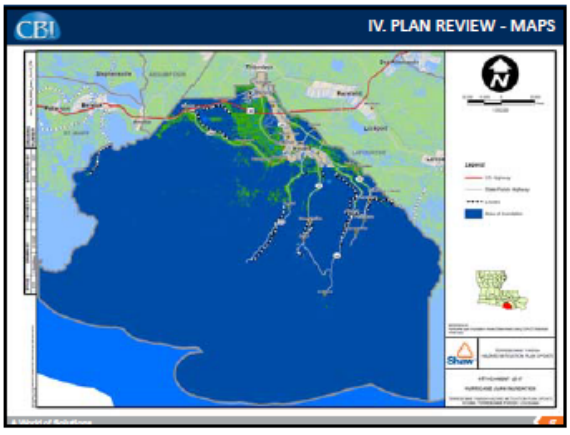

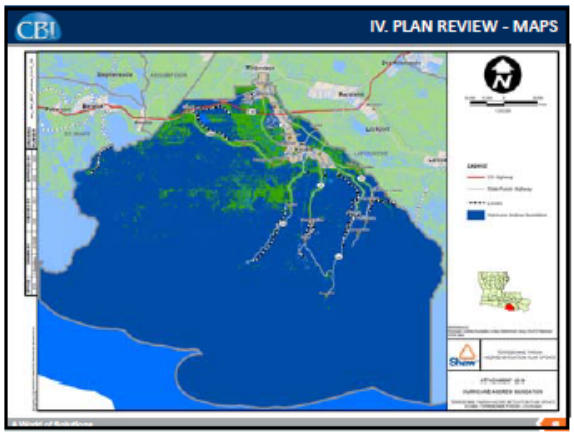

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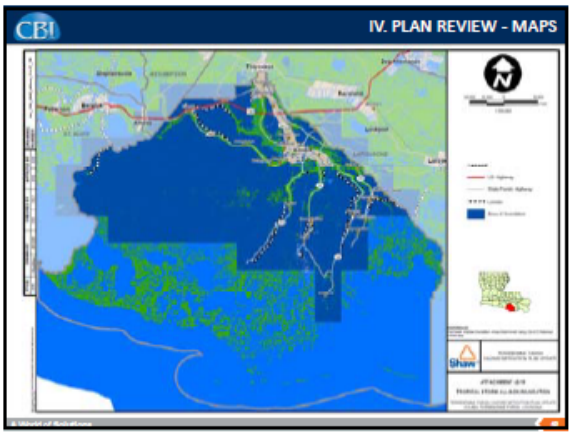

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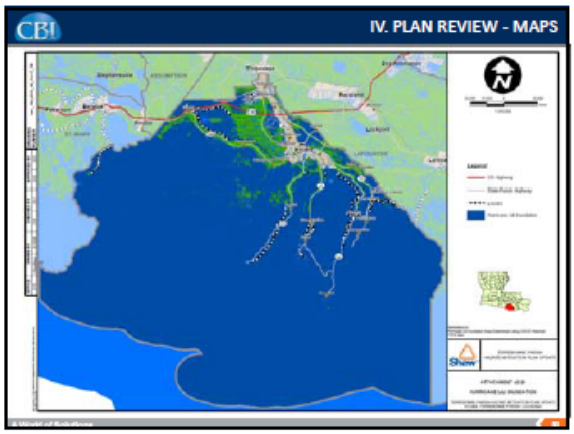

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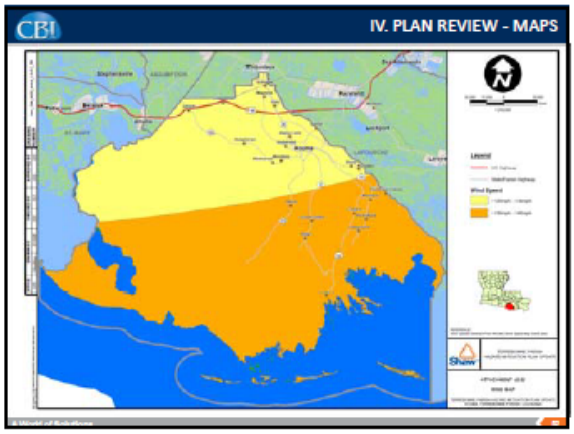

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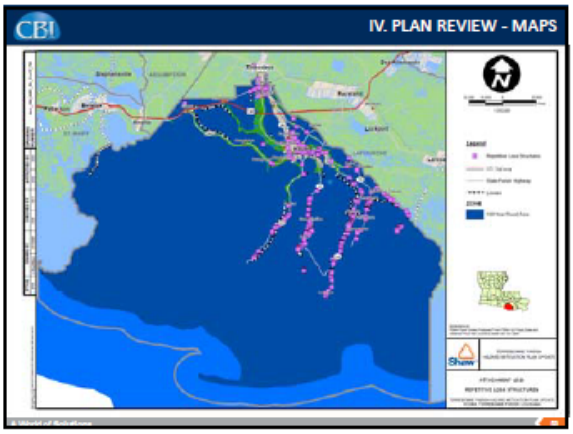

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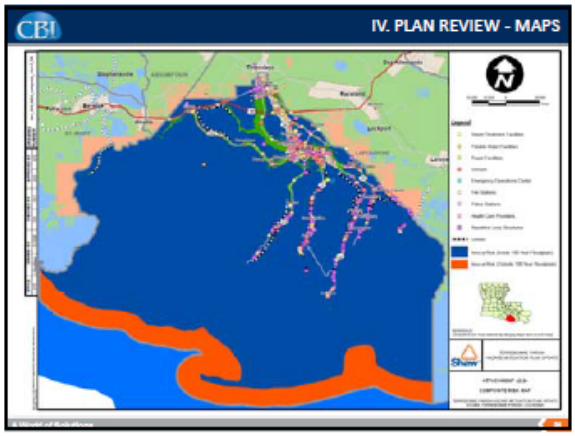

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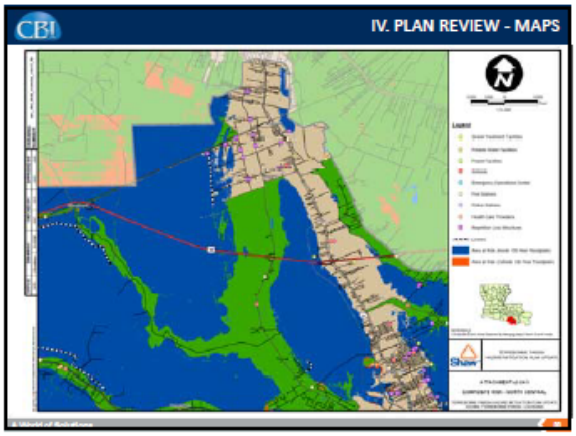

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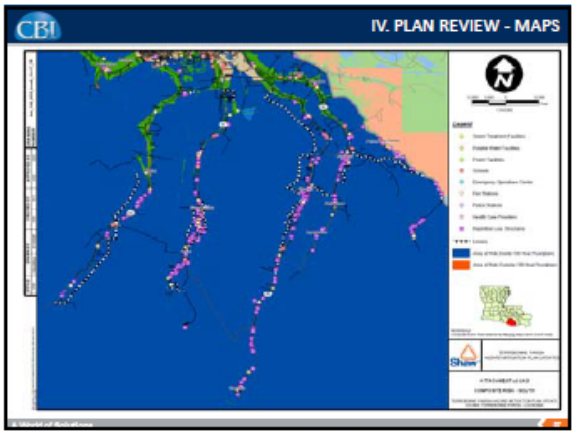

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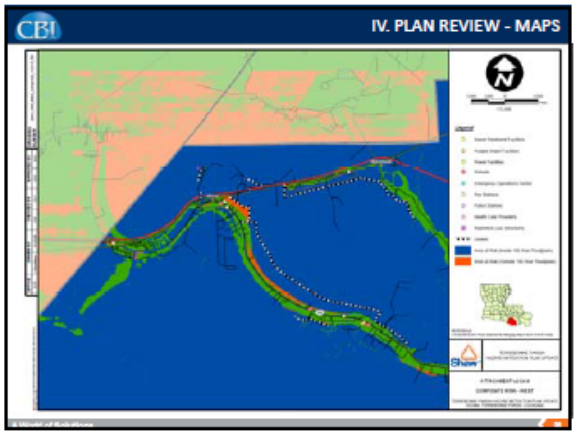

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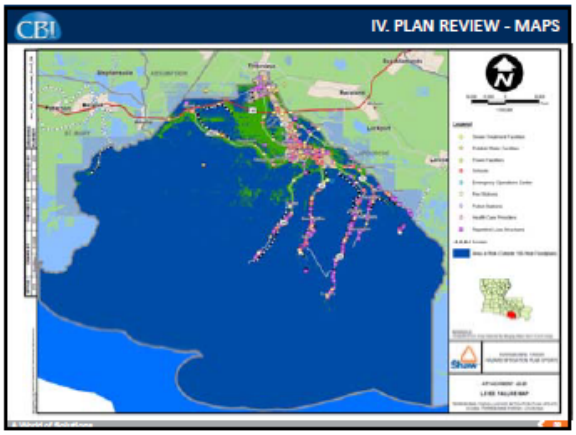


IV. PLAN REVIEW - MAPS

- Project List

CONCLUSION

I. INTRODUCTIONS AND WELCOME

II. PURPOSE, NEED, AND EXPECTATIONS

III. PARTICIPATION STRATEGY

IV. PLAN REVIEW

V. CONCLUSION

CONCLUSION

I. Meeting Summary
   A. Purpose, Need, and Expectations
   B. Participation Strategy
   C. Plan Review
   D. Conclusion
II. Tentative Agenda for Meeting 2
   A. Risk Assessment
   B. Map Review
   C. Project Prioritization
III. Schedule/Locate Next Meeting
IV. Adjourn

CONTACT INFORMATION

NICOLE B. CUTFORTH
PROJECT MANAGER
CB&I
225-987-7373
NICOLE.CUTFORTH@CBI.COM

Attachment c1-3.2A
Meeting 2—Advertisements

Public Notice
Meeting Announcement
Terrebonne Parish Hazard Mitigation Plan Update 2014

The Terrebonne Parish Consolidated Government is updating the parish's Hazard Mitigation Plan. The purpose of the plan update is to identify and pursue preventative measures that will reduce future damages from natural hazards. To continue the plan update, the Terrebonne Parish Hazard Mitigation Committee will discuss the risk assessment, the mapping effort, mitigation projects, and existing authorities, policies, and programs. The public is encouraged to attend this meeting.

Thursday, July 17th, 2014 at 2:00 pm
Folk Life Museum
317 Goode Street
Houma, Louisiana 70360

Please direct questions about the meeting to Nicole Cutforth, CB&I, at (985) 858-3983.

Attachment c1-3.2B
Meeting 2—Sign-In Sheets

Terrebonne Parish Hazard Mitigation Plan Update 2015
Thursday, July 17, 2014 2 PM Folklife Museum
317 Goode Houma, Louisiana

	SIGN IN	Last Name	First Name	Organization	Title	Comments
1		Adams	Phillip	TPCG Assessor's Office	Commercial Bldgs	
2		Allemand	Gwen			
3		Alford	Tony	Terrebonne Levee & Conservation District	President TLCD Board	
4		Arnette	Jane	South Central Industrial Association	Executive Director	
5		Babin	Danny	President of the Regulatory Planning Commission	Chairman	
6		Benoit	Eric	Lafourche Parish	Asst. OEP	
7		Belanger	Wanda	Southeast LA HBA		
8		Boudreaux	Chris	Lafourche Parish	OEP Director	
9		Boudreaux	John	Assumption Parish	OEP Director	
10		Boucvalt	Jobe	St. John	OEP Director	
11		Bourg	Doug	Terrebonne Parish Consolidated Government	Pairsh President Assistant	
12		Bourg	Tom	Terrebonne Parish Consolidated Government	Utility Director	
13		Bray	Jeanne	DPW	Engineer	
14		Bush	Gregory	Terrebonne Parish Consolidated Government	Public Works Director	
15		Carlos	Suzanne	Houma-Terrebonne Chamber of Commerce		
16		Case	Peggy	Terrebonne Readiness and Assistance Coalition	Executive Director	
17		Cehan	Connie	Terrebonne Parish School District		
18		Claudet	Michel	Terrebonne Parish Consolidated Government	Pairsh President	
19		Cloutier	Budd	Planning Commission	Chair	
20		Crispino	Steve	South Louisiana Bank	Vice Presiident	

Terrebonne Parish Hazard Mitigation Plan Update 2015
Thursday, July 17, 2014 2 PM Folklife Museum
317 Goode Houma, Louisiana

	SIGN IN	Last Name	First Name	Organization	Title	Comments
21		Daigle	Melissa	LSU LA SeaGrants	Legal Coordinator	
22		Dardar	Thomas	United Houma Nation	Principal Chief	
23		Dardar	Shirell	Biloxi-Chitamacha Confederation of Miskogees	Deputy Chief	
24		DeFraites	Arthur	Gulf South Engineering	President	
25		Deroche	Eric	St. James Parish	OEP Director	
26		Drury	David	TPCG	TPCG Facilities Mgr	
27		Dufrene	Chief	Houma Fire Department	Fire Chief	
28		Duplantis	Duffy	TPCG	GIS	
29		Duplantis	Todd	TPCG	Houma Police Chief	
30		Dupre	Reggie	TLCD	Executive Director	
31		English	Nicolette	GOHSEP	Planner	
32		Eues	Earl	OEP-Terrebonne	Director	
33		Gauthe	David	BISCO		
34		Gerbasi	Jennifer	Terrebonne Parish Consolidated Government	Division Manager/Recovery Planner	
35	PAT GORDON amp	Gordon	Patrick	Planning and Zoning	Director	
36		Grabert	Loney	TPCG	Assessor	
37		Graham	Ken	NOAA	Meteorologist-in-Charge	
38	Mary Gueniot Biegler	**Gueniot-Biegler**	Mary	Bayou Grace	Executive Director	
39		Hymel	Francis	St. James Parish	Asst. OEP	

Terrebonne Parish Hazard Mitigation Plan Update 2015
Thursday, July 17, 2014 2 PM Folklife Museum
317 Goode Houma, Louisiana

	SIGN IN	Last Name	First Name	Organization	Title	Comments
40		Landry	Kayte	Assumption Parish	Asst. OEP	
41		Large	Geoff	Terrebonne Parish Consolidated Government	Chief Building Official	
42		Larpenter	Jerry	Terrebonne Parish Sheriff's Office	Sheriff	
43		LeBlanc	Kathy	Louisiana Department of Health & Human Services	Sanitarian	
44		Ledet	Brad	LaDay Construction		
45		Ledet	Lisa	Terrebonne Parish Consolidated Government	Floodplain Manager	
45		Levron	Al	Terrebonne Parish Consolidated Government	Capital Projects Admin.	
47		Liner	Michelle	Terrebonne Readiness and Assistance Coalition	Adminstrative Assistance	
48		Lombardo	John	?Restore or Retreat	?Outreach Coord	
49		Maloz	Simone	South Central Industrial Association	Representative	
50		Marmande	Mitch	Terrebonne Levee and Conservation District	Program Manager	
51		Martin	Philip	Terrebonne Parish School District	Superintendent	
52		Matherne	Alan	LSU Ag Center	Area Agent	
53		Matherne	Nicolas	Terrebonne Parish	Coastal	
54		Milford, III	Gene	Gene Milford and Associates	Professional Engineer	
55		Moore	Jack	Terrebonne Parish School District	Risk Management	
56		Mullarkey	Christine	Red Cross	Resource Manager	

Terrebonne Parish Hazard Mitigation Plan Update 2015
Thursday, July 17, 2014 2 PM Folklife Museum
317 Goode Houma, Louisiana

	SIGN IN	Last Name	First Name	Organization	Title	Comments
57		Nail	Shirin	REMAX		
58		Naquin	Albert	Biloxi-Chitamacha Island Road Band	Chief	
59		O'Neal	Cindy	DOTD	State Floodplain Manager	
60		Pellegrin	Cynthia	ReMax Good Earth	Real Estate Broker	
61		Pena	Oscar	CB&I	Senior Vice President	
62		Peoples	Phyllis	Terrebonne General Medical Center	CEO	
63		Perry	Ron	St. Charles Parish	OEP Director	
64		Peterson	Kris	UNO-CHART		
65		Poche	Charlette	Terrebonne Parish Council	Council Clerk	
66		Pulaski	Chris	Terrebonne Parish Consolidated Government	Senior Planner - Plan/Zoning	
67		Riley	Mark	GOHSEP	Deputy Director, GOHSEP	
68		Rivette	Frank	NOAA	Meteorologist	
69		Rutter	Lea			
70		Schexnayder	Phil	Gulf South Engineering Associates, Inc.	~~Professional~~ Tech. Engineer	
71		Smith	Kenneth	T. Baker Smith	President/CEO	
72		Sobert	Michael	Consolidated Waterworks District	General Manager	
73		Tastet	Jason	St. Charles Parish	OEP	

Terrebonne Parish Hazard Mitigation Plan Update 2015
Thursday, July 17, 2014 2 PM Folklife Museum
317 Goode Houma, Louisiana

	SIGN IN	Last Name	First Name	Organization	Title	Comments
75		Underwood	Jason	South Central Industrial Association		
76		Waire	Darrel	TPCG	Director-Housing	
77		Waitz	David	David Waitz Engineering	Professional Engineer	
78		Wilson	Lex	Courier		
79		Zeringue	Jerome	CPRA	CPRA Chair	
80		FALgout	Julie	LA. SEA GRANT	Seafood Industry Liaison	
81		ZAPPON	ZAPPON	LSU AG CENTER	COUNTY AGENT	

Attachment c1-3.2C
Meeting 2—Meeting Agenda and Summary Meeting Notes

TERREBONNE
HAZARD MITIGATION PLAN UPDATE

7/17/2014
@ 2:00 P.M
Folk Life Museum
317 Goode Street
Houma, Louisiana 70360

- **WELCOME AND INTRODUCTIONS**

  The Terrebonne Parish Hazard Mitigation Plan Update Committee held their second open to the public meeting at the Folk Life Museum in Houma, Louisiana, on Thursday, June 17, 2014. The purpose of the meeting was to provide an opportunity to update maps, add new or update existing projects, and receive attendees input on hazard events.

  Nicole Cutforth from CB&I introduced herself and asked attendees to introduce themselves, provide what agency they represent, and also provide one statement about what they would like learn from the second meeting.

- **SUMMARY OF FIRST MEETING**
  Nicole reviewed the first meeting agenda and discussed that the goal of the Hazard Mitigation Plan Update is for it to be approved by both FEMA and GOHSEP so that Terrebonne Parish remains eligible for Hazard Mitigation Grant Program funds. She reiterated that the plan is a living document.

- **DATA INVENTORY AND MAPS PRESENTATION**
  Nicole broadly discussed the updated maps for the Hazard Mitigation Plan and explained that the updated maps and markers were provided on each table for input from the attendees.

  Nicole explained that all hazard events should be profiled for the plan update procedure. She explained the impacts that occurred during past hurricanes, such as Gustav, Ike, Isaac, etc. and flooding events, such as Flood of May 2011, Flood of July 18, 2011, Tropical Storm Lee, etc., and also how the barge in Bayou Chene kept the backwater flooding from reaching Terrebonne Parish during the Flood of May 2011. Nicole discussed with the attendees that no data has been found for the October Flooding (2013)/ May Flooding (2014) and the attendees agreed to remove these flood events from the plan.

Reggie Dupre with TLCD noted flooding damage occurred to Reach J2 during Lee and Isaac. It was also discussed that there was overtopping of a few reached during Gustav but only lasted about two hours. Mitch Marmande with TLCD commented that the jail flooded during Ike instead of Gustav.

- **RISK ASSESSMENT**
  Nicole discussed that FEMA has various worksheets (3A & 4) used for calculating risk assessments for the Hazard Mitigation Plan Update.

  Nicole defines the composite risk flood area as a compiled map of the 100-year floodplain and historical flood events. She discussed worksheet #3A "Inventory Assets of the Parish" and what it entails. In the next meeting once all flood inundation maps are compiled, the map will then be inserted into HAZUS (a FEMA software). HAZUS produces loss estimates on types of structures (residential, commercial, etc.) and critical facilities. The data from HAZUS will be presented at the next meeting.

  Repetitive Loss Structures were defined and it was noted that they are tracked by FEMA and the NFIP.

- **HAZARD EVENT PROFILES**
  Nicole discusses the hazards that Terrebonne Parish will be profiling in the 2015 Update. The focus tends to be more on flooding and wind because those hazards create the most damage in South Louisiana, but Nicole stressed that the plan will also profile every other natural hazard that Terrebonne Parish can possibly have damages from and receive mitigation funds. The other hazards include drought, hailstorms, tornadoes, winter storms, land subsidence, sea level rise, coastal erosion, saltwater erosion, and sinkholes.

  Mitigation Goals were discussed and explained that they are generic enough to be a "catch all" for any type of hazard mitigation project.

  Nicole explained that the Project List is organized by source so there may be projects that are listed multiple times. She discussed how we want to include any project that will reduce or eliminate any type of hazards that have been discussed. She stressed that we do not want to focus on HMGP eligibility; various grants will be able to fund projects within a parish approved plan (ex. CDBG). The plan will go to council and will have to be approved as part of the FEMA requirements. Some projects that were discussed are as follows:
    - Two water treatment plants (Schriever/Houma) need shutters
    - Drinking water structures on Bayou Black that Waterworks operates that fall in the Morganza alignment. The project to be added would elevate the structure.
    - Gibson/Bayou Black (levee map) – Gibson alignment to be added

Pat Gordon with Terrebonne Parish Consolidated Government (TPCG) discussed that these projects are not 100% funded and it is normally a 25% match.

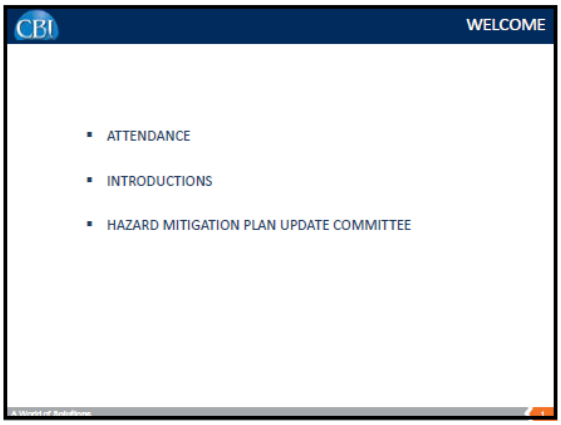
Jennifer Gerbasi with TPCG discussed that generators are now a stand-alone project.

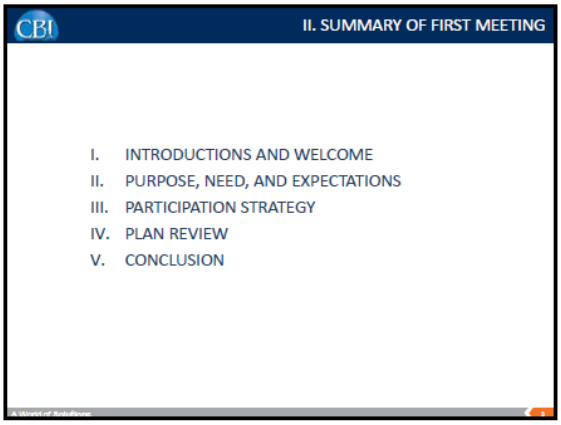
A concern was raised that the Parish should analyze the HMGP funding process. For example, one expects the project to be $600,000.00 and it turns into a $1M job through GOHSEP/FEMA review.

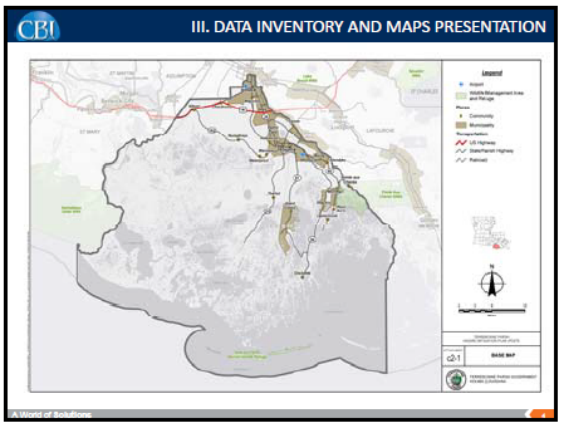
Nicole discussed that they should look at the project list as a "wish list" and provide all projects that need to be completed that can lessen the effects from natural hazards so that all projects needing funding can be in a parish approved plan.

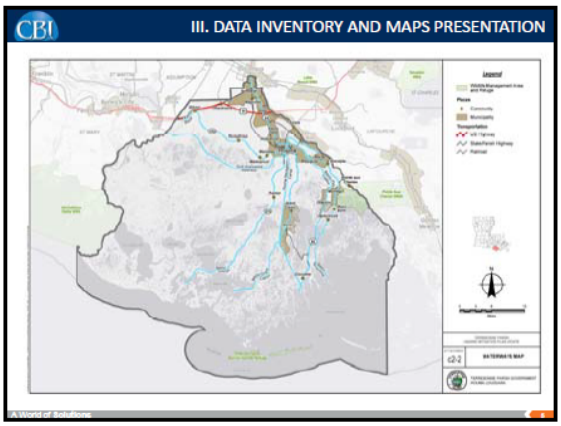
- **DETERMINE MITIGATION STRATEGIES**
  Nicole explains that once all projects are identified, they will be prioritized in the next meeting. FEMA requires that we keep the STAPLEE criteria in mind while prioritizing.
    - Social – Is the mitigation strategy socially acceptable?
    - Technical – Is the proposed action technically feasible and cost effective? Does it provide the appropriate level of protection?
    - Administrative – Does the parish have the capability to implement the action? Is the lead agency capable of carrying out oversight of the project?
    - Political – Is the mitigation action politically acceptable?
    - Legal – Does the parish have the authority to implement the proposed measure?
    - Economic – Does the economic base, protected growth and opportunity costs justify the mitigation project?
    - Environmental – Does the proposed action meet statutory considerations and public desire for sustainable and environmentally healthy communities?
- **CONCLUSION**
  Next meeting will:
    - Review Updated Maps
    - Review Risk Assessment
    - Prioritize Project List

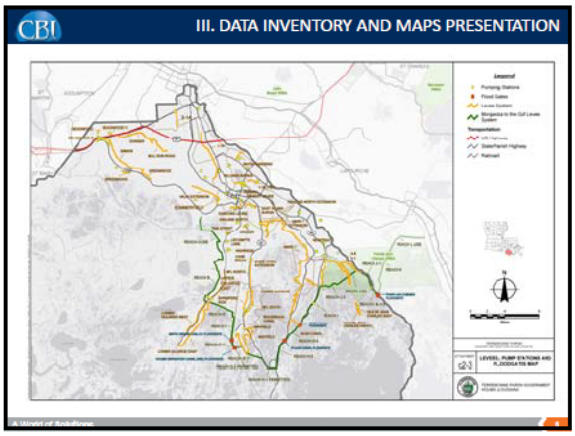
Attachment c1-3.2D
Meeting 2—Power Point Presentation Slides











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III. DATA INVENTORY AND MAPS PRESENTATION

A World of Solutions

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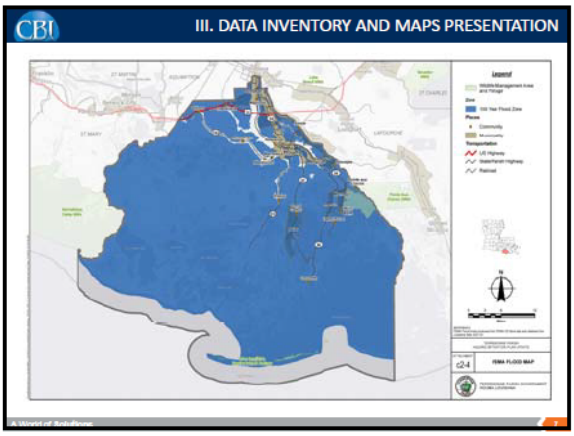

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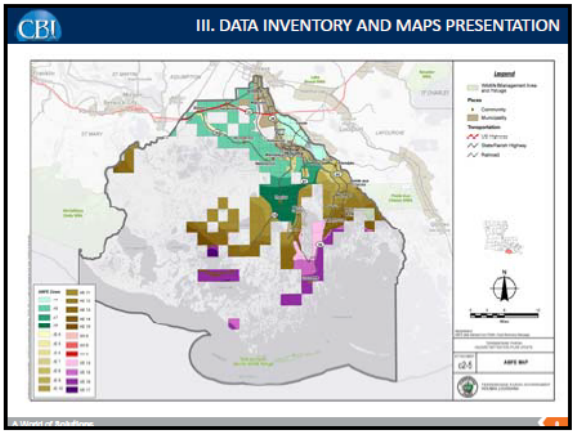

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III. DATA INVENTORY AND MAPS PRESENTATION

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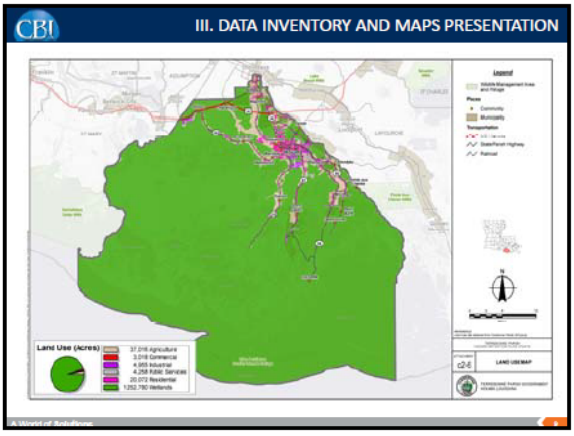

CBI

III. DATA INVENTORY AND MAPS PRESENTATION

Land Use (Acres)

🟫	37,016 Agriculture
🟥	3,018 Commercial
🟪	4,955 Industrial
⬜	4,258 Public Services
🟪	20,072 Residential
🟩	1,252,780 Wetlands

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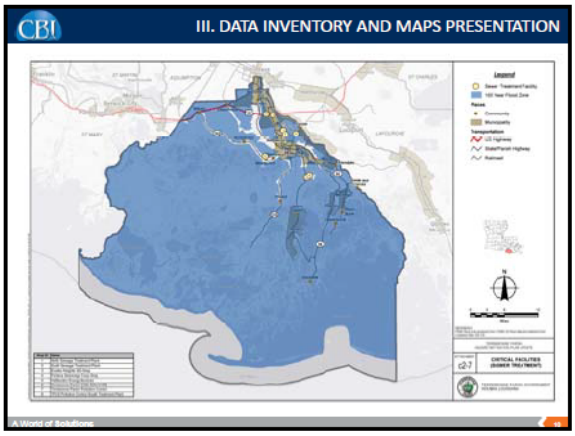

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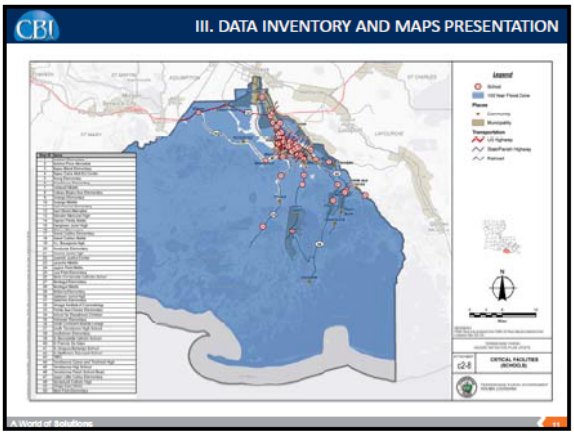

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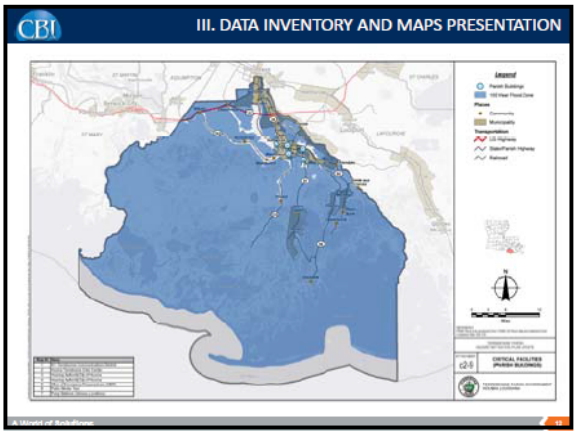

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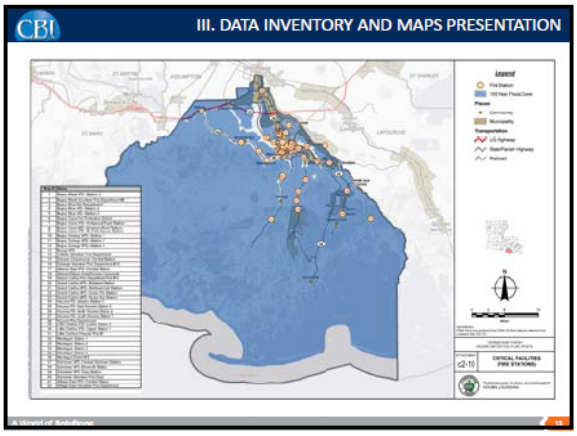

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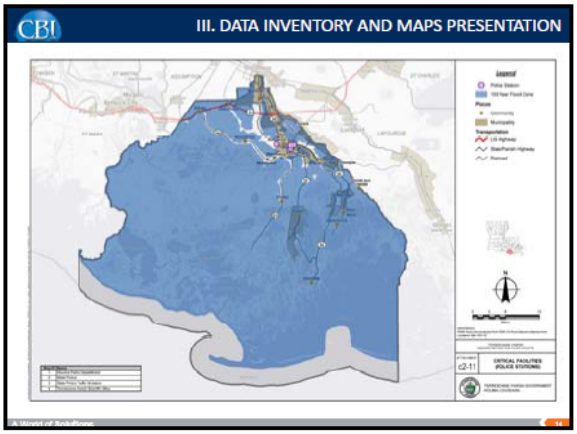

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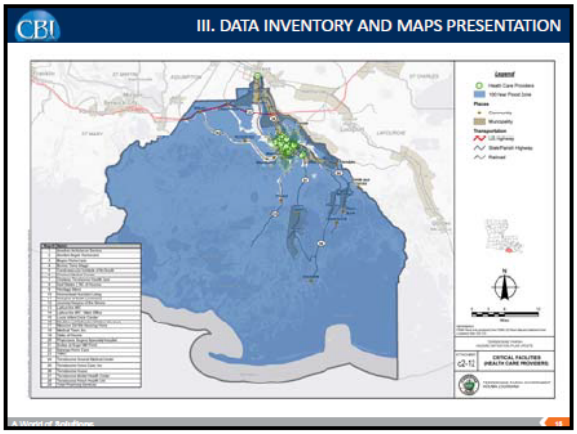

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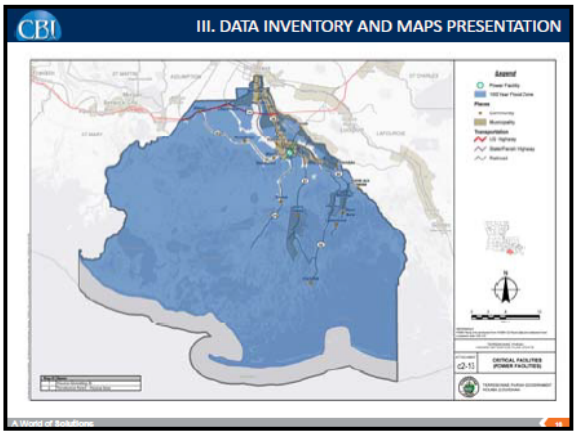

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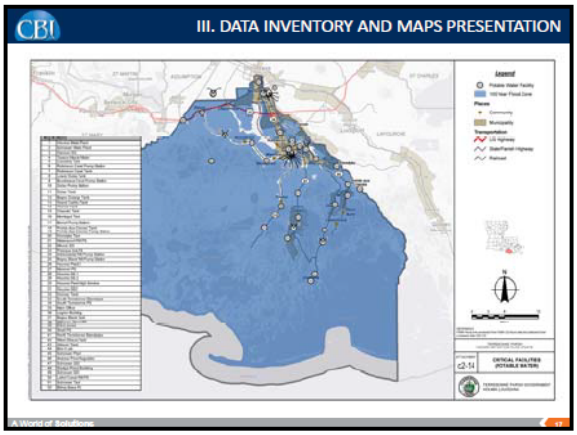

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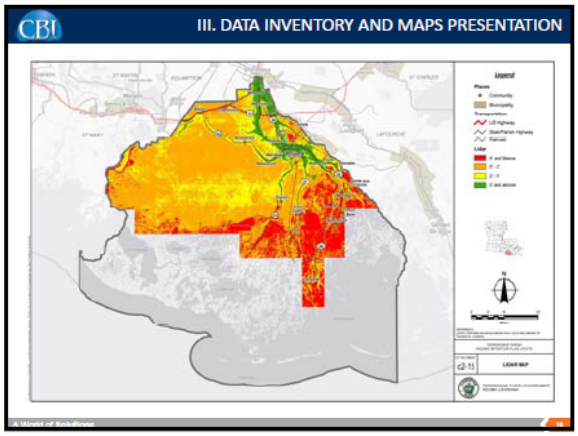

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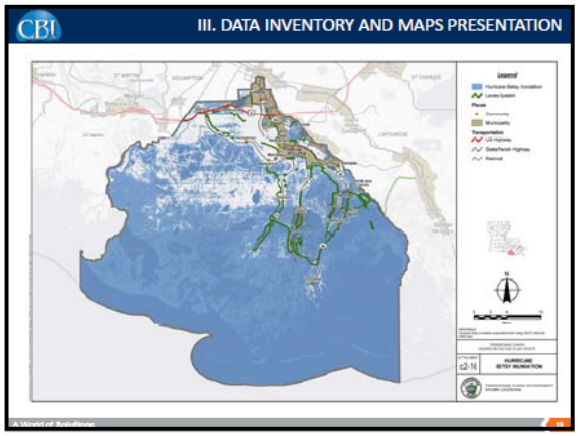

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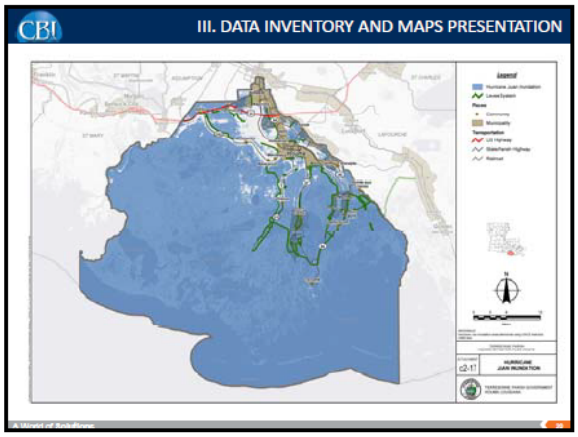

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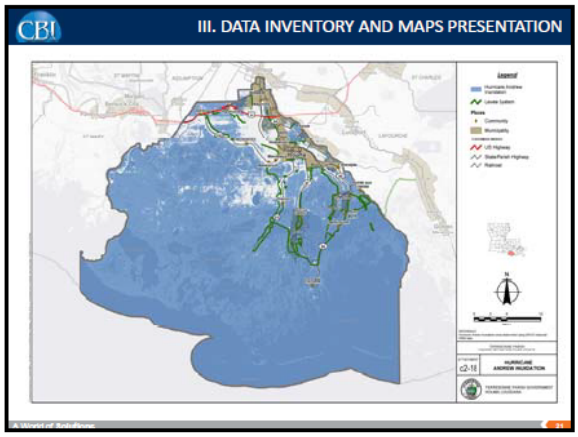

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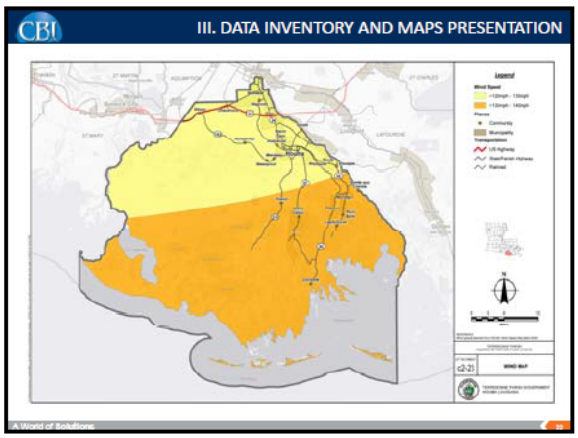

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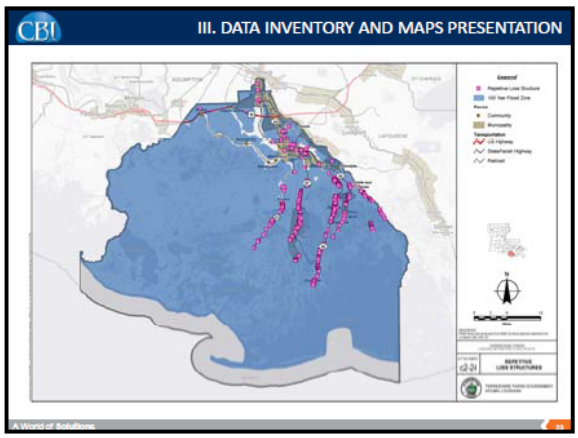


III. DATA INVENTORY AND MAPS PRESENTATION

A World of Solutions

- **Hurricane Gustav**
- Mandatory Evacuation of 2,300 residents
- 100% of Parish experienced loss of electrical service
- Drinking water system damaged and required a boil water advisory, affected the opening of two major hospital systems within Terrebonne Parish
- Parish experienced Category 2 hurricane force winds
- Major structural damage widespread throughout Terrebonne Parish
- Jail flooded
- Hospital parking lot flooded (couldn't get to Chabert)

- **Hurricane Ike**
- Major storm surge flooding throughout Terrebonne Parish, mostly south of the Intracoastal Waterway. Storm surge flooding also noted in western end of Parish.
- Storm surge was approximately 7 to 8 feet.
- Levee breached and overtopped from storm surges
- Damage to drainage pump stations.
- Shelters opened to house residents affected by storm surge flooding.

- **Flood of May 2011 (Atchafalaya High Water Event)**
  - No flooding
- Prepped pumps
- Levees built in time to prevent damages
- Tiger Tubes, Sheetpile, Hesco baskets Placed
- If barge in Bayou Chene hadn't been successful, new levees wouldn't have held

- **Flood of July 18, 2011**
- Street flooding
- Catch basin clogging
- Debris blocking drains
- Clearing culverts & trash screens

- **Tropical Storm Lee**
- North shore of Lake Boudreaux Lost material /Rock Dike $1.2MM
- Bellaire Lift Station Flooded
- Not as severe as other listed storms

- **Hurricane Isaac**
- Debris due to wind damage
- Signs/ bridges/ traffic lights needed repair
- Island Road shoulder damage
- Damage to the South treatment plant oxidation pond

III. DATA INVENTORY AND MAPS PRESENTATION

- **October Flooding (2013)/May Flooding (2014)**
  - REMOVE?

IV. RISK ASSESSMENT

Discussion of FEMA Worksheet #3A—Inventory Assets

	Number of Structures			Value of Structures			Number of People		
	# in Community	# in Hazard Area	% in Hazard Area	$ in Community	$ in Hazard Area	% in Hazard Area	#in Community	# in Hazard Area	% in Hazard Area
Total	60,186	31,778	53%	$810,603,788	$275,653,193	45%	104,603	57,038	55%

IV. RISK ASSESSMENT

Repetitive Loss Structures

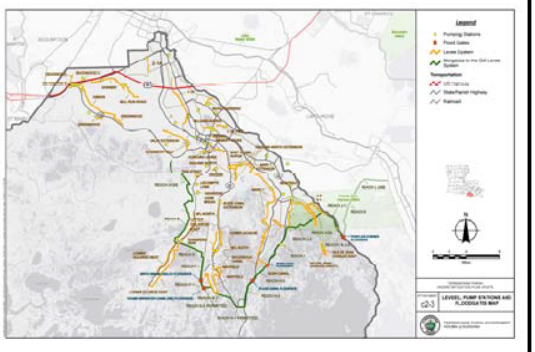
- 514 structures identified
- Total amount of claims by these structures = $50 Million
- Average claim amount = $36,500

V. HAZARD EVENT PROFILES

Levee Failure

- Review and discuss responsibilities (federal, parish, city, etc.)

V. HAZARD EVENT PROFILES



V. HAZARD EVENT PROFILES

Flooding

- Atchafalaya Flooding of 2011
- July 18, 2011 Flooding

Hurricanes and Coastal Storms

- Hurricane Gustav
- Hurricane Ike
- Tropical Storm Lee
- Hurricane Isaac

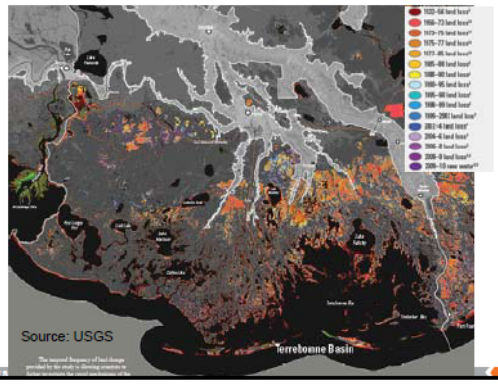
V. HAZARD EVENT PROFILES

- Drought
  - Can adversely effect every jurisdiction in Louisiana
  - No fatalities, no injuries, no property damage in last 25 years
  - 6 occurrences in last 56 years (1957-2013) with damages totaling $4.4 million
- Hailstorm
  - 20 major hail storm instances reported by NCDC in last 56 years
  - $0 losses according to NCDC
- Tornadoes
  - 30 tornadoes reported by NCDC
  - Losses total $13 million
- Winter Storms
  - 7 cold/winter storm events reported by NCDC in last 56 years
  - $100,000 total damages

V. HAZARD EVENT PROFILES

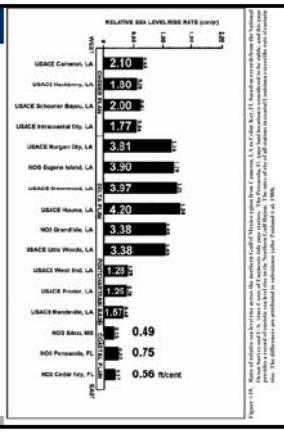
- Non-NCDC Reported Hazard Events:
  - Land Subsidence
    - Worsened by Levee Construction and Pumping Stations that inhibit alluvial sedimentary deposits along ridges and wetlands in a deltaic region
  - Sea Level Rise
    - Combined with subsidence, sea level rise will cause the Louisiana Coastline to disappear into the gulf
    - USGS ranks Terrebonne Parish at a "very high" risk to land loss due to sea level rise
  - Coastal Erosion
    - Worsened by Hurricane Events
    - Terrebonne Parish and the State of Louisiana has comprehensive list of coastal restoration and protection projects

Coastal Land Loss

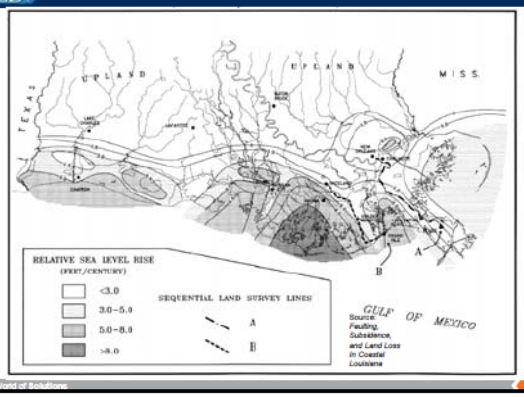


Sea Level Rise

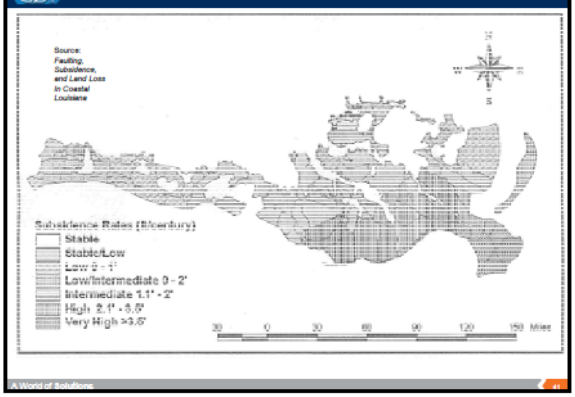
Source: *Faulting, Subsidence, and Land Loss In Coastal Louisiana*



Sea Level Rise



Subsidence



V. HAZARD EVENT PROFILES

- Non-NCDC Reported Hazard Events:
  - Saltwater Intrusion
    - Alternative backup water intakes
  - Sinkholes
    - The sinkhole in Bayou Corne, Assumption Parish brought to light the significance of this hazard.

Source: USGS

VI. DETERMINE MITIGATION STRATEGIES

Mitigation Goals and Objectives

1. Identify and pursue preventative measures that will reduce future damages from hazards.
2. Enhance public awareness and understanding of disaster preparedness.
3. Reduce repetitive flood losses in the parish.
4. Facilitate sound development in the parish to reduce or eliminate the potential impact of hazards.

VI. DETERMINE MITIGATION STRATEGIES

Preliminary Project List (handout)

Discussion of New or Additional Projects

VI. DETERMINE MITIGATION STRATEGIES

Current Plans

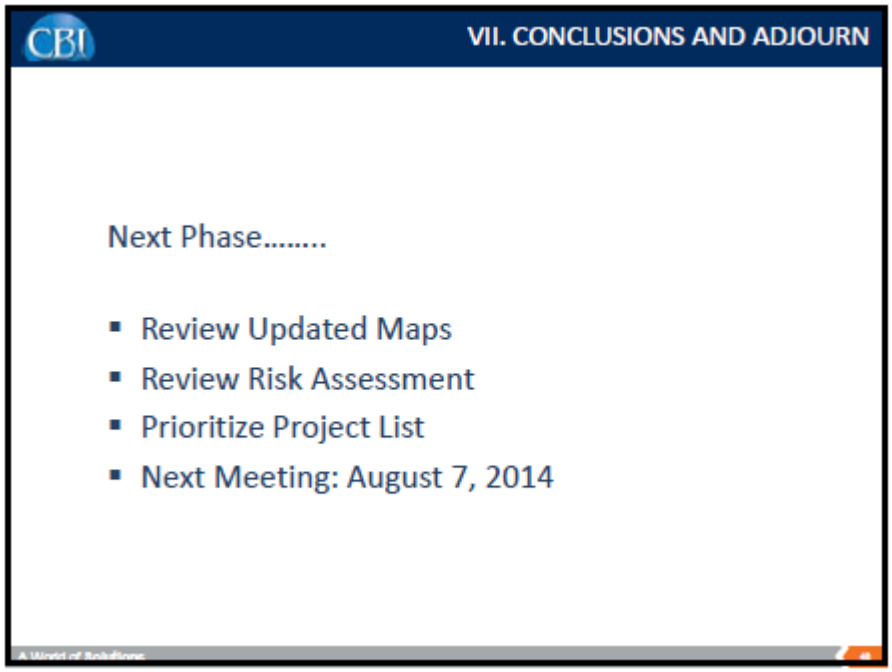
- Louisiana State Hazard Mitigation Plan
- Coastal Wetlands Planning Protection & Restoration Act
- Coastal Impact Assistance Program
- Louisiana Comprehensive Master Plan for a Sustainable Coast
- Coastal Protection and Restoration Authority
- ESF 14
- Terrebonne Parish Feasibility Study for Levee Embankment Projects
- Terrebonne Parish Comprehensive Master Plan

VI. DETERMINE MITIGATION STRATEGIES

- Identify and Prioritize Mitigation Measures
  - Determine evaluation criteria
    - Social – Is the mitigation strategy socially acceptable?
    - Technical – Is the proposed action technically feasible and cost effective? Does it provide the appropriate level of protection?
    - Administrative – Does the parish have the capability to implement the action? Is the lead agency capable of carrying out oversight of the project?
    - Political – Is the mitigation action politically acceptable?
    - Legal – Does the parish have the authority to implement the proposed measure?
    - Economic – Does the economic base, protected growth and opportunity costs justify the mitigation project?
    - Environmental – Does the proposed action meet statutory considerations and public desire for sustainable and environmentally healthy communities?
  - Implementation Strategy
    - Identify who will implement the mitigation measures
    - Identify mitigation funding
    - Identify when the mitigation measures should be completed

VI. DETERMINE MITIGATION STRATEGIES

- Capability Assessment
  - What plans reduce long-term vulnerability?
  - What capabilities could be used to implement mitigation and reduce vulnerability in the future?
  - Strengths/Opportunities for Improvement?
    - Planning and Regulatory
    - Administrative and Technical
    - Financial
    - Education and Outreach
- Discussion Questions:
  - What community capabilities can be identified?
  - What limits to community capabilities can be identified?
  - What improvements can be suggested?


VII. CONCLUSIONS AND ADJOURN
Next Phase.....
Review Updated Maps
Review Risk Assessment
Prioritize Project List
Next Meeting: August 7, 2014

Attachment c1-3.3A
Meeting 3—Advertisement

Public Notice
Meeting Announcement
Terrebonne Parish Hazard Mitigation Plan Update 2014

The Terrebonne Parish Consolidated Government is updating the parish's Hazard Mitigation Plan. The purpose of the plan update is to identify and pursue preventative measures that will reduce future damages from natural hazards. To continue the plan update, the Terrebonne Parish Hazard Mitigation Committee will discuss project prioritization, review the risk assessment, and review updated maps. Any concerns with the scope of the risk assessment or types of projects proposed should be raised at this meeting. The next meeting will be the review of the draft plan. The public is encouraged to attend this meeting.

Thursday, August 7th, 2014 at 10:00 am
Bayou Terrebonne Waterlife Museum
7910 W Park Ave
Houma, Louisiana 70360

Please direct questions about the meeting to Nicole Cutforth, CB&I, at (985) 858-3983.

Attachment c1-3.3B
Meeting 3—Sign-in Sheets

Louisiana's Bayou Country
TERREBONNE PARISH

Terrebonne Parish Hazard Mitigation Plan Update 2015
Thursday, August 7, 2014 10 AM Waterlife Museum
7910 W Park Ave, Houma, Louisiana
Meeting topic: review updated maps, review risk assessment, and prioritize project list

TERREBONNE PARISH

	SIGN IN	Last Name	First Name	Organization	Title	Comments
1		Adams	Phillip	TPCG Assessor's Office	Commercial Bldgs	21
2		Allemand	Gwen			
3		Alford	Tony	Terrebonne Levee & Conservation District	President TLCD Board	
4		Arnette	Jane	South Central Industrial Association	Executive Director	
5		Babin	Danny	President of the Regulatory Planning Commission	Chairman	
6		Benoit	Eric	Lafourche Parish	Asst. OEP	
7		Belanger	Wanda	Southeast LA HBA		
8		Boudreaux	Chris	Lafourche Parish	OEP Director	
9		Boudreaux	John	Assumption Parish	OEP Director	
10		Boucvalt	Jobe	St. John	OEP Director	
11		Bourg	Doug	Terrebonne Parish Consolidated Government	Pairsh President Assistant	
12		Bourg	Tom	Terrebonne Parish Consolidated Government	Utility Director	45
13		Bray	Jeanne	DPW	Engineer	
14		Bush	Gregory	Terrebonne Parish Consolidated Government	Public Works Director	31
15		Carlos	Suzanne	Houma-Terrebonne Chamber of Commerce		#34
16		Case	Peggy	Terrebonne Readiness and Assistance Coalition	Executive Director	
17		Cehan	Connie	Terrebonne Parish School District		
18		Claudet	Michel	Terrebonne Parish Consolidated Government	Pairsh President	
19		Cloutier	Budd	Planning Commission	Chair	
20		Crispino	Steve	South Louisiana Bank	Vice President	

Terrebonne Parish Hazard Mitigation Plan Update 2015
Thursday, August 7, 2014 2 PM Waterlife Museum
7910 W Park Ave, Houma, Louisiana

Meeting topic: review updated maps, review risk assessment, and prioritize project list

	SIGN IN	Last Name	First Name	Organization	Title	Comments
21	Melissa Daigle	Daigle	Melissa	LSU LA SeaGrants	Legal Coordinator	13
22	Bobby Billiot	Dardar	Thomas	United Houma Nation	Principal Chief	24
23		Dardar	Shirell	Biloxi-Chitamacha Confederation of Miskogees	Deputy Chief	
24		DeFraites	Arthur	Gulf South Engineering	President	
25		Deroche	Eric	St. James Parish	OEP Director	
26		Drury	David	TPCG	TPCG Facilities Manager	
27	Todd Dufrene	Dufrene	Chief	Houma Fire Department	Fire Chief	43
28		Duplantis	Duffy	TPCG	GIS	
29		Duplantis	Todd	TPCG	Houma Police Chief	
30		Dupre	Reggie	TLCD	Executive Director	
31		English	Nicolette	GOHSEP	Planner	
32		Eues	Earl	OEP-Terrebonne	Director	
33		Falgout	Julie	LA. SeaGant	Seafood Industry Liaison	
34		Gauthe	David	BISCO		
35		Gerbasi	Jennifer	Terrebonne Parish Consolidated Government	Division Manager/Recovery Planner	#8
36		Gordon	Patrick	Planning and Zoning	Director	#1
37		Grabert	Loney	TPCG	Assessor	
38		Graham	Ken	NOAA	Meteorologist-in-Charge	
39		**Gueniot-Biegler**	Mary	Bayou Grace	Executive Director	
40		Hymel	Francis	St. James Parish	Asst. OEP	

Terrebonne Parish Hazard Mitigation Plan Update 2015
Thursday, August 7, 2014 10 AM Waterlife Museum
7910 W Park Ave, Houma, Louisiana

Meeting topic: review updated maps, review risk assessment, and prioritize project list

	SIGN IN	Last Name	First Name	Organization	Title	Comments
41		Jofferson	Batron	LSU AG Center	County Agent	
42		Landry	Kayte	Assumption Parish	Asst. OEP	
43		Large	Geoff	Terrebonne Parish Consolidated Government	Chief Building Official	
44	Major Michael Dean #11	Larpenter	Jerry	Terrebonne Parish Sheriff's Office	Sheriff	
45		LeBlanc	Kathy	Louisiana Department of Health & Human Services	Sanitarian	
46		Ledet	Brad	LaDay Construction		
47	Lisa Ledet	Ledet	Lisa	Terrebonne Parish Consolidated Government	Floodplain Manager	# 33
48		Levron	Al	Terrebonne Parish Consolidated Government	Capital Projects Admin.	
49		Liner	Michelle	Terrebonne Readiness and Assistance Coalition	Adminstrative Assistance	
50		Lombardo	John	Restore or Retreat	Outreach Coordinator	
51	Simone Maloz	Maloz	Simone	South Central Industrial Association	Representative	#32
52		Marmande	Mitch	Terrebonne Levee and Conservation District	Program Manager	
53		Martin	Philip	Terrebonne Parish School District	Superintendent	
54		Matherne	Alan	LSU Ag Center	Area Agent	
55		Matherne	Nicolas	Terrebonne Parish	Coastal	
56		Milford, III	Gene	Gene Milford and Associates	Professional Engineer	
57	Jack Moore	Moore	Jack	Terrebonne Parish School District	Risk Management	#4
58		Mullarkey	Christine	Red Cross	Resource Manager	

Terrebonne Parish Hazard Mitigation Plan Update 2015
Thursday, August 7, 2014 10 AM Waterlife Museum
7910 W Park Ave, Houma, Louisiana
Meeting topic: review updated maps, review risk assessment, and prioritize project list

	SIGN IN	Last Name	First Name	Organization	Title	Comments
59		Nail	Shirin	REMAX		
60		Naquin	Albert	Biloxi-Chitamacha Island Road Band	Chief	
61		O'Neal	Cindy	DOTD	State Floodplain Manager	
62		Pellegrin	Cynthia	ReMax Good Earth	Real Estate Broker	
63		Pena	Oscar	CB&I	Senior Vice President	
64		Peoples	Phyllis	Terrebonne General Medical Center	CEO	
65		Perry	Ron	St. Charles Parish	OEP Director	
66		Peterson	Kris	UNO-CHART		
67		Poche	Charlette	Terrebonne Parish Council	Council Clerk	
68		Pulaski	Chris	Terrebonne Parish Consolidated Government	Senior Planner - Plan/Zoning	#2
69		Riley	Mark	GOHSEP	Deputy Director, GOHSEP	
70		Rivette	Frank	NOAA	Meteorologist	
71		Rutter	Lea			
72		Schexnayder	Phil	Gulf South Engineering Associates, Inc.	Tech. Engineer	
73		Smith	Kenneth	T. Baker Smith	President/CEO	
74		Sobert	Michael	Consolidated Waterworks District	General Manager	Michael Sobert #22
75		Tastet	Jason	St. Charles Parish	OEP	

Terrebonne Parish Hazard Mitigation Plan Update 2015
Thursday, August 7, 2014 10 AM Waterlife Museum
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	SIGN IN	Last Name	First Name	Organization	Title	Comments
76		Underwood	Jason	South Central Industrial Association		
77	42	Waire	Darrel	TPCG	Director-Housing	
78		Waitz	David	David Waitz Engineering	Professional Engineer	
79		Wilson	Lex	Courier		
80		Zeringue	Jerome	CPRA	CPRA Chair	
81	Aaron Hebert	Hebert	Aaron	TPSO	asst. Uniform Commander	4 /
82	RONNIE SNOW	Snow	RONNIE	R_SNOW@RJSNOW.NET		#3
	Beryl Amedee	Amedee	Beryl	Terrebonne Parish Council	Councilwoman, Dist. 4	address #23

Attachment c1-3.3C
Meeting 3—Meeting Agenda and Summary Meeting Notes

AGENDA & NOTES
FOR
TERREBONNE
HAZARD MITIGATION PLAN UPDATE
8/7/2014
@ 10:00 A.M
Bayou Terrebonne Waterlife Museum
7910 W Park Ave
Houma, Louisiana 70360

I. WELCOME AND INTRODUCTIONS

The Terrebonne Parish Hazard Mitigation Plan Update Committee held their third open to the public meeting at the Bayou Terrebonne Waterlife Museum in Houma, Louisiana, on Thursday, August 7, 2014. The purpose of the meeting was to provide an opportunity to review the updated maps, review Worksheet #3A and Worksheet #4, and allow attendees to provide input on project prioritization.

Nicole Cutforth from CB&I introduced herself and asked attendees to introduce themselves, provide what agency they represent, and also provide one statement about why they are attending the third Hazard Mitigation Update Meeting.

II. SUMMARY OF SECOND MEETING

Nicole reviewed the second meeting agenda and discussed what would be reviewed at meeting three. Nicole informed the attendees that it is very important to have all projects sent in by our final meeting held on September 12, 2014 in order for the projects to be listed in the updated Hazard Mitigation Plan.

III. MODELING DATA GAP

Nicole discussed the modeling grant that Terrebonne Parish has and ideas that committee members have for the use of the grant money. One idea that is listed is modeling of drainage/sub-drainage areas within the northern part of the parish. Ronnie Shaw explained that he would like grant funds to be used to model Corporate Drive where it is currently listed as a +2 and is subsiding quickly. Pat Gordon with Terrebonne Parish explained that the parish has already had numerous modeling projects that were completed by FTN and Gulf South and that Ronnie's concerns may have been covered in those. Pat suggested that the modeling grants be projected more to areas that haven't been modeled yet. Ronnie also discussed that the Gray/Schriever area has inadequate drainage and there will be more developments coming to that area in the future.

I. REVIEW RISK ASSESSMENT

Nicole explained the flood composite risk assessment to the committee and how CB&I came up with the inundation information that was provided on the map. CB&I uses a FEMA program called HAZUS that comes up with loss estimates.

Nicole discussed FEMA worksheet #3A which is the inventory assets of Terrebonne Parish that is based off of Census Block Data within HAZUS.

Repetitive Loss Structures were defined and it was noted that they are tracked by FEMA and the NFIP. The definition of Repetitive Loss properties has changed since the last update.

Nicole explained FEMA Worksheet #4 and that HAZUS is also used for this worksheet. HAZUS uses the critical facilities in Terrebonne Parish, places them on the composite risk map and creates an inundation level (in feet) and provides replacement value. The inundation level is applied to percentage values assigned by FEMA to generate the total risk values.

II. DETERMINE MITIGATION STRATEGIES

Nicole discussed that the project list is a wish list but also a list that shows the suggestions of top priority projects in Terrebonne Parish. Chief Dufrene discussed that he would like to add a Safe House to the project list. He would like this Safe House to hold 30 to 40 people and would like it located on 2101 East Houma Drive behind the training facility. Chief would like this to house firemen and policemen in the city in case of an emergency. Jennifer Gerbasi with Terrebonne Parish explained that since there was already going to be a Safe House built to house 200 that Chief Dufrene would need to explain why he would like his Safe House to house be funded.

Chris Pulaski with Terrebonne Parish questioned where major retail outlets such as Home Depot, Lowes, etc. would fit in on the Critical Facilities list. Nicole explained that the critical facilities list is typically just Government Buildings but all major retail outlets can be listed if locations are provided along with a replacement value, contents value, and a value of how much it would cost a day that each store is out of commission.

It was noted that the CNG Station located at 550 South Van Ave. should be listed as a priority on the project list.

Nicole discusses mitigation strategies and what Terrebonne Parish has already completed or is in the process of completing. Pat explained that Terrebonne Parish had eleven recommendations from an Engineering group from Baton Rouge for flood plain management that Terrebonne Parish has addressed such as prohibiting hazardous waste facilities and freeboard built-in for mobile homes which leaves nine other recommendations. Terrebonne Parish has decided they will move forward with some recommendations but not with others. Pat discussed

that Terrebonne Parish is and needs to continue to prohibit issuing building permits in special flood areas deemed as environmentally sensitive.

Each attendee received a remote to vote which project ranks highest priority to them. The results are as follows:

Question 1 – What type of project do you consider the highest priority?

1. Residential Elevations – 30%
2. Commercial Elevations – 5%
3. Elevations of Critical Facilities – 65%

Question 2 – What type of project do you consider the highest priority?

1. Generators for Schools – 5%
2. Generators for Sewer Lift Stations – 10%
3. Generators for Potable Water Facilities – 15%
4. Generators for First Responders – 30%
5. Generators for Drainage Pump Stations – 40%

Question 3 – What type of drainage improvements do you think should be the highest priority?

1. Existing Culvert or Ditch Upgrades – 35%
2. Pump Station Upgrade – 59%
3. Installation of new Drainage Ditches/Culverts where none currently exists – 6%

Question 4 – What type of critical facility elevation do you think should be the top priority?

1. Elevation of utilities (water/sewer) – 0%
2. Elevation of First Responder structures – 38%
3. Elevation of evacuation routes with flood history – 46%
4. Elevation of pump station controls – 15%

Question 5 – What type of wind hardening project do you think should be the top priority?

1. Schools – 12%
2. First Responders – 35%
3. Utilities – 18%
4. Evacuation Shelters – 35%
5. Other Government Structures – 0%

Question 6 – What type of project would be of the highest priority to prevent coastal erosion?

1. Inform community of risk – 0%
2. Acquire and demolish structures in at risk area – 18%
3. Stabilization of rebuilding of barrier island – 82%

Question 7 – What type of project do you think would be of the highest priority to combat sea level rise?

1. Study to investigate baseline risk – 21%
2. Zoning/Subdivision Regulations – 7%
3. Locate Utilities outside high risk areas – 7%
4. Additional Freeboard Requirements – 7%
5. Natural Buffer Restoration – 57%

Question 8 – What type of project do you think would be the highest priority to combat subsidence?

1. Study to Identify Baseline Risk – 24%
2. Zoning/Subdivision Regulations – 12%
3. Strengthen Building codes to resist subsidence loads – 65%

Nicole explained to the attendees that most Federal Grants have a 75% federal/ 25% local match and responsible entity had to come up with the local portion.

Nicole discussed the new FEMA requirement that requires a write for the projects that have been implemented in the new plan update.

Jack Moore with Terrebonne School Board noted that West Park Elementary will no longer be a shelter and to remove from Project List.

Nicole discussed with the attendees about the Capability Assessment and that all previous meeting notes, presentations, agendas, maps, and previous plan can be accessed online.

A few attendees discussed different types of funding such as HMGP and how the funding flows.

IV. REVIEW UPDATED MAPS

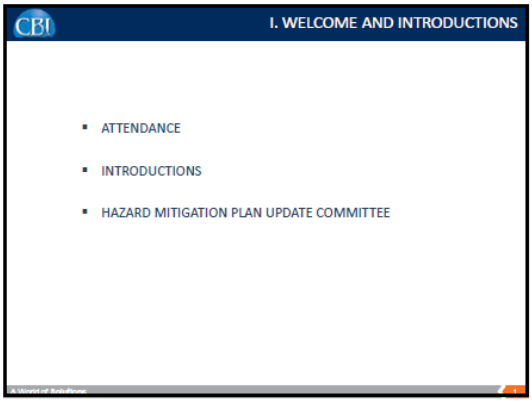
Nicole broadly discussed the updated maps for the Hazard Mitigation Plan and explained the Composite Risk areas and 100-year flood plain. Nicole noted that the latest inundation incorporated into the Composite Risk was Hurricane Ike.

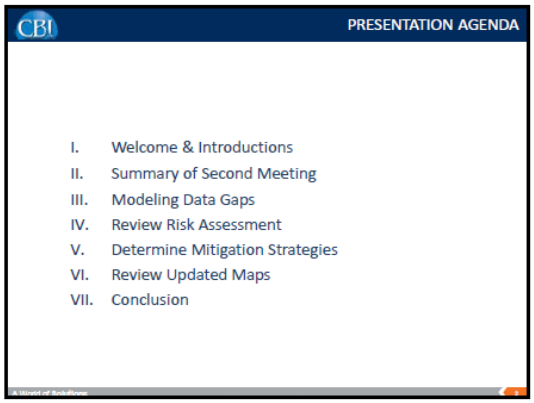
V. CONCLUSION

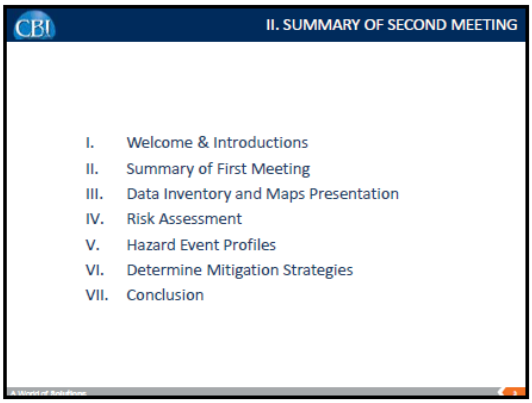
A. Next Phase

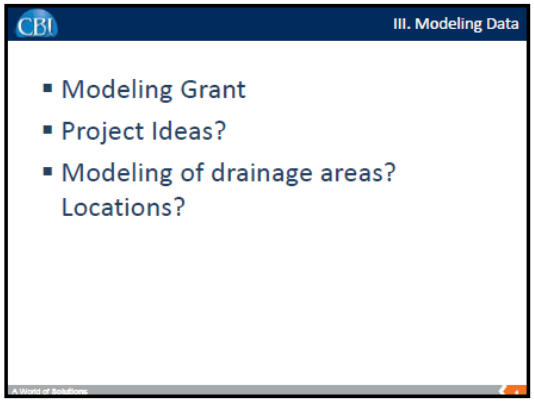
1. Review Plan Update – will be posted online a week ahead of the meeting
2. Next Meeting: September 12, 2014

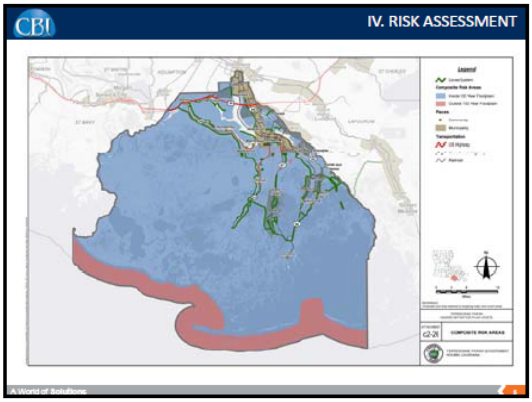
Attachment c1-3.3D
Meeting 3—PowerPoint Presentation Slides











CBI IV. RISK ASSESSMENT

Discussion of FEMA Worksheet #3A—Inventory Assets

	Number of Structures			Value of Structures			Number of People		
	# in Community	# in Hazard Area	% in Hazard Area	$ in Community	$ in Hazard Area	% in Hazard Area	#in Community	# in Hazard Area	% in Hazard Area
Total	42,680	26,373	62%	$7,276,677,000	$4,407,016,000	61%	104,503	84,961	82%

CBI IV. RISK ASSESSMENT

Repetitive Loss Structures

- 514 structures identified
- Total amount of claims by these structures = $50 Million
- Average claim amount = $36,500

CBI IV. RISK ASSESSMENT

Discussion – FEMA Worksheet 4

- Replacement Value of Critical Facilities
  - $1.3 Billion
- Contents Value
  - $1.7 Billion
- Composite Risk Loss Estimate
  - $1.8 Billion

CBI IV. DETERMINE MITIGATION STRATEGIES

Preliminary Project List (handout)

Discussion of New or Additional Projects?

CBI V. DETERMINE MITIGATION STRATEGIES

Existing Plans and Preventative Activities:

- Comprehensive Plan
- Building Code
- Zoning Ordinance
- Floodplain Management Regulations
- Subdivision Ordinance
- Stormwater Management Regulations

1. How tools can reduce losses
2. Current community standards
3. Additional plans/regulations?

CBI V. DETERMINE MITIGATION STRATEGIES

Mitigation Goals and Objectives

1. Identify and pursue preventative measures that will reduce future damages from hazards.
2. Enhance public awareness and understanding of disaster preparedness.
3. Reduce repetitive flood losses in the parish.
4. Facilitate sound development in the parish to reduce or eliminate the potential impact of hazards.

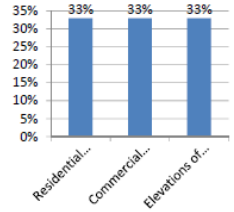
V. DETERMINE MITIGATION STRATEGIES

- Identify and Prioritize Mitigation Measures
  - Determine evaluation criteria
    - Social – Is the mitigation strategy socially acceptable?
    - Technical – Is the proposed action technically feasible and cost effective? Does it provide the appropriate level of protection?
    - Administrative – Does the parish have the capability to implement the action? Is the lead agency capable of carrying out oversight of the project?
    - Political – Is the mitigation action politically acceptable?
    - Legal – Does the parish have the authority to implement the proposed measure?
    - Economic – Does the economic base, protected growth and opportunity costs justify the mitigation project?
    - Environmental – Does the proposed action meet statutory considerations and public desire for sustainable and environmentally healthy communities?
  - Implementation Strategy
    - Identify who will implement the mitigation measures
    - Identify mitigation funding
    - Identify when the mitigation measures should be completed

Question 1

Which type of project do you consider the highest priority?

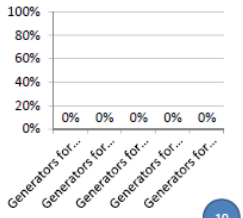
1. Residential Elevations
2. Commercial Elevations
3. Elevations of Critical Facilities



Question 2

Which type of project do you consider the highest priority?

1. Generators for Schools
2. Generators for Sewer Lift Stations
3. Generators for Potable Water Facilities
4. Generators for First Responders
5. Generators for Drainage Pump Stations



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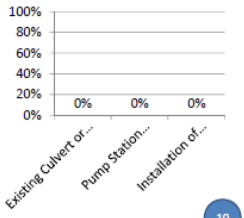
Question 3

What type of drainage improvement do you think should be the highest priority?

1. Existing Culvert or Ditch Upgrades
2. Pump Station Upgrades
3. Installation of new Drainage Ditches/Culverts where none currently exists



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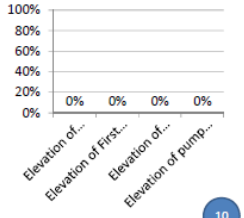
Question 4

What type of critical facility elevation do you think should be the top priority?

1. Elevation of utilities (water/sewer)
2. Elevation of First Responder structures
3. Elevation of evacuation routes with flood history
4. Elevation of pump station controls



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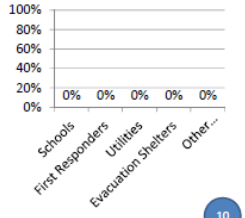
Question 5

What type of wind hardening project do you think should be the top priority?

1. Schools
2. First Responders
3. Utilities
4. Evacuation Shelters
5. Other Government Structures



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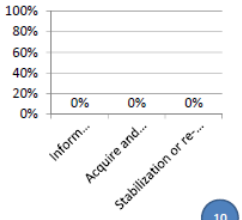
Question 6

What type of project would be of the highest priority to prevent coastal erosion?

1. Inform community of risks
2. Acquire and demolish structures in at risk area
3. Stabilization or re-building of barrier islands



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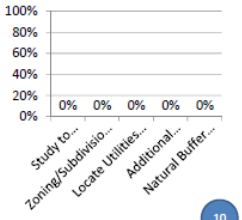
Question 7

What type of project do you think would be of the highest priority to combat sea level rise?

1. Study to investigate baseline risk
2. Zoning/Subdivision Regulations
3. Locate Utilities outside high risk areas
4. Additional Freeboard Requirement
5. Natural Buffer Restoration



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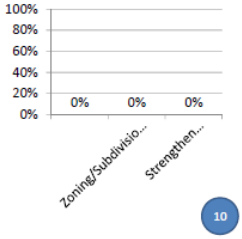
Question 8

What type of project do you think would be the highest priority to combat subsidence?

1. Study to Identify Baseline Risk
2. Zoning/Subdivision Regulations
3. Strengthen Building codes to resist subsidence loads



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V. DETERMINE MITIGATION STRATEGIES

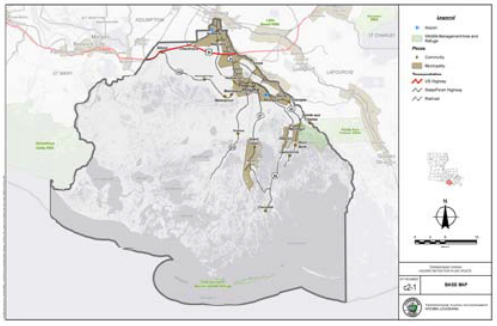
Discussion Points:

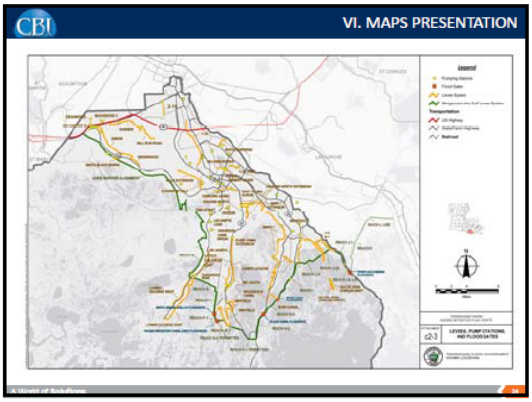
- Capability of community to fund and implement activity
- Discussion of implementation of current projects and achievement of expectations

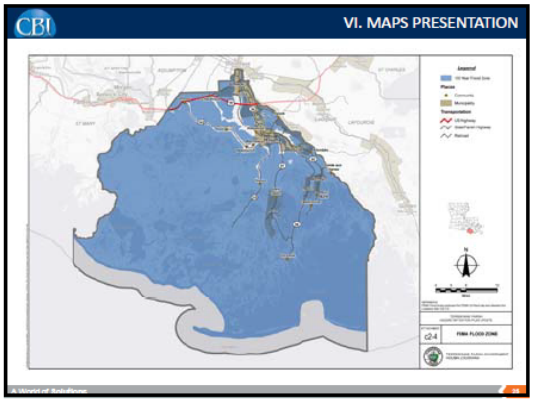
V. DETERMINE MITIGATION STRATEGIES

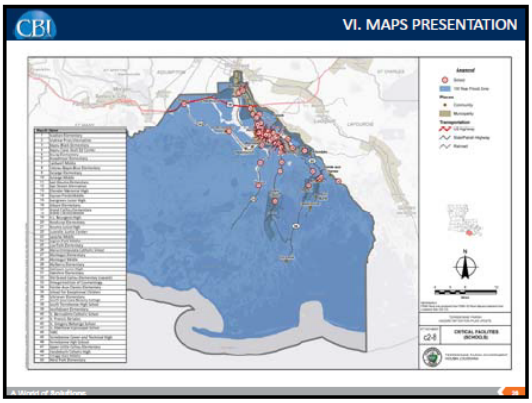
- Capability Assessment
  - What plans reduce long-term vulnerability?
  - What capabilities could be used to implement mitigation and reduce vulnerability in the future?
  - Strengths/Opportunities for Improvement?
    - Planning and Regulatory
    - Administrative and Technical
    - Financial
    - Education and Outreach
- Discussion Questions:
  - What community capabilities can be identified?
  - What limits to community capabilities can be identified?
  - What improvements can be suggested?

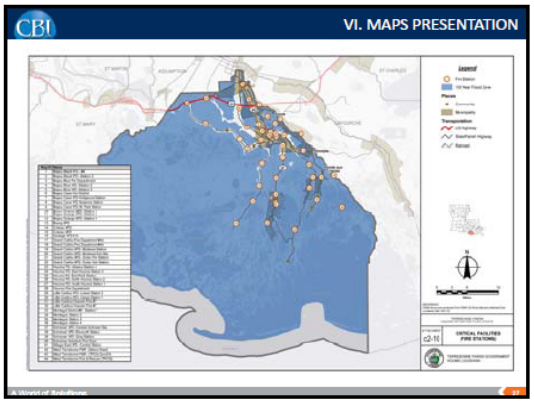
VI. MAPS PRESENTATION

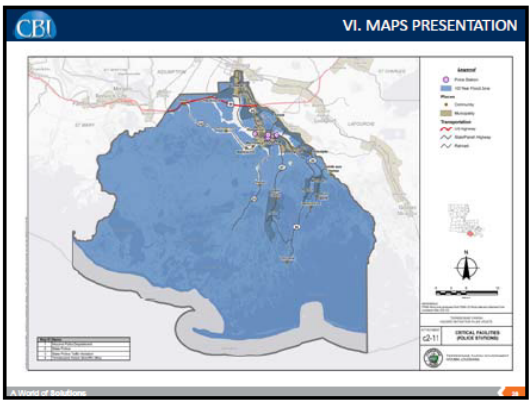


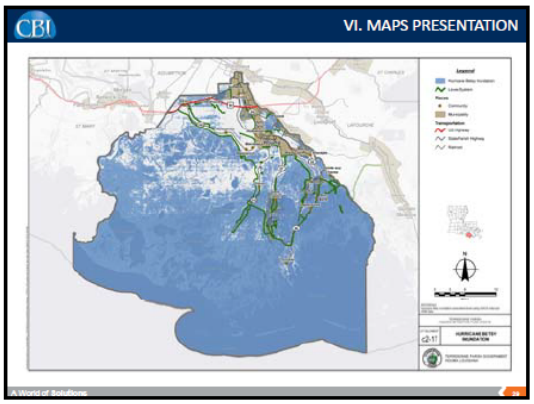

CBI
VI. MAPS PRESENTATION
Legend
c2-3
LEVEES, PUMP STATIONS, AND FLOOD GATES
TERREBONNE PARISH GOVERNMENT HOUMA, LOUISIANA
A World of Solutions
34

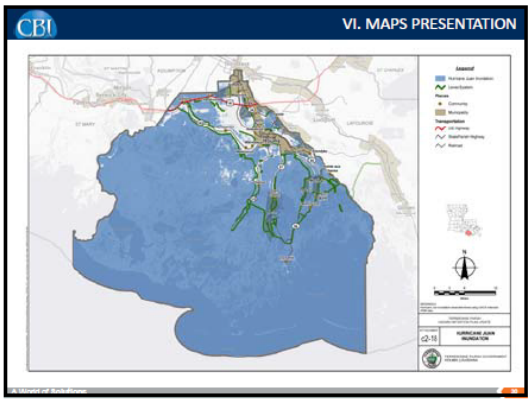

CBI
VI. MAPS PRESENTATION
Legend
c2-4
FEMA FLOOD ZONE
A World of Solutions
35


CBI
VI. MAPS PRESENTATION
Legend
CRITICAL FACILITIES (SCHOOLS)
A World of Solutions
36


CBI
VI. MAPS PRESENTATION
Legend
c2-10
CRITICAL FACILITIES (FIRE STATIONS)
TERREBONNE PARISH GOVERNMENT HOUMA, LOUISIANA
A World of Solutions
37


CBI
VI. MAPS PRESENTATION
Legend
CRITICAL FACILITIES (POLICE STATIONS)
A World of Solutions
38


CBI
VI. MAPS PRESENTATION
Legend
HURRICANE BETSY INUNDATION
TERREBONNE PARISH GOVERNMENT HOUMA, LOUISIANA
A World of Solutions
39



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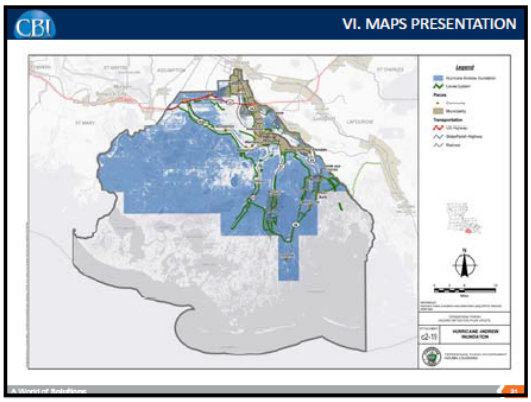

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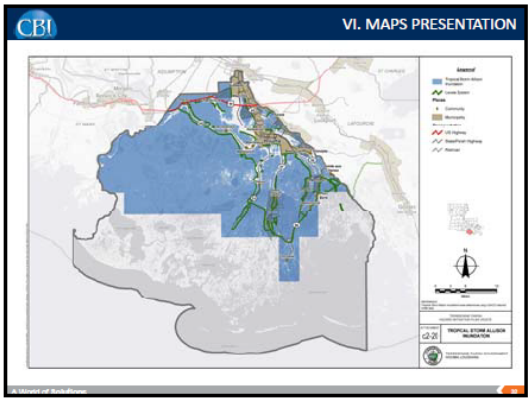

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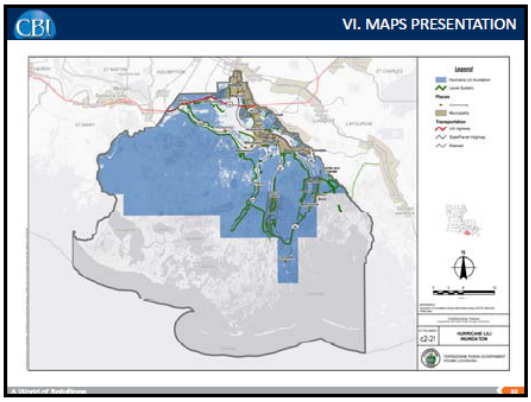

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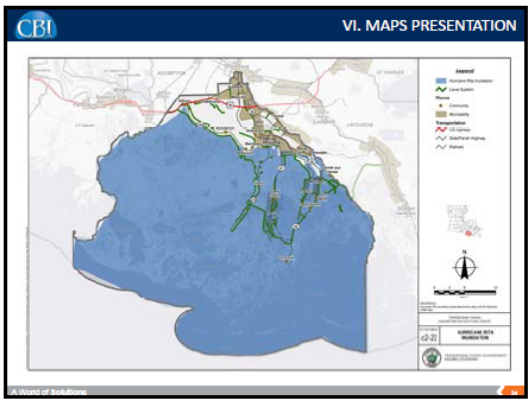

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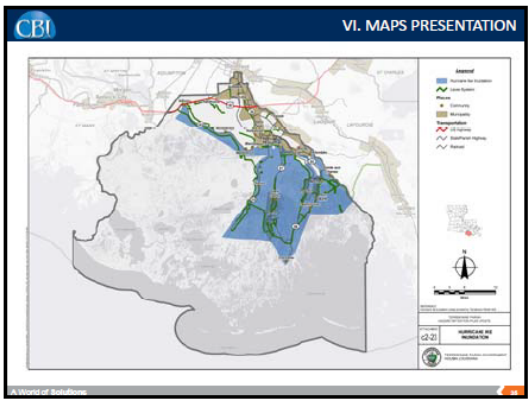

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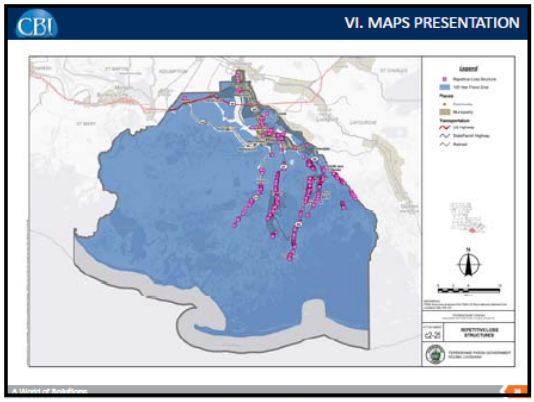
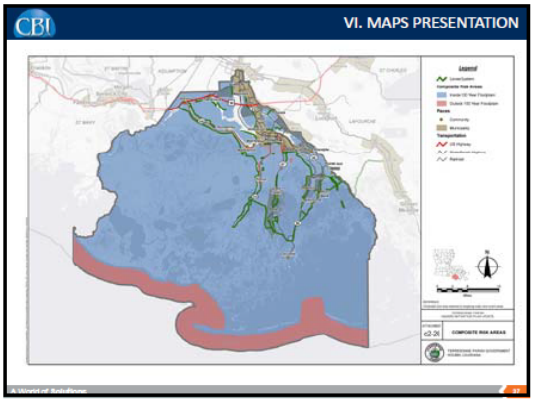


VI. MAPS PRESENTATION

A World of Solutions



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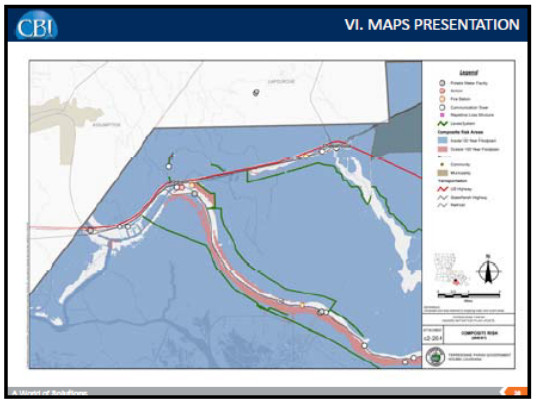
A World of Solutions



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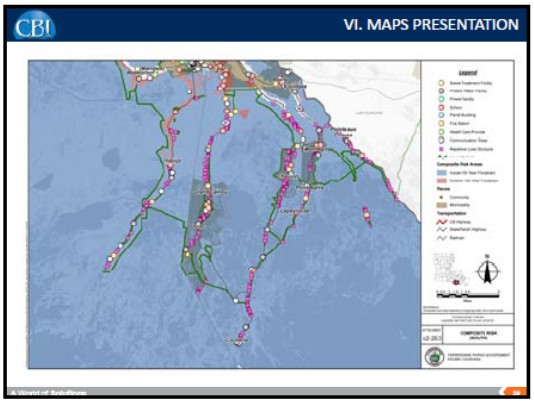
A World of Solutions



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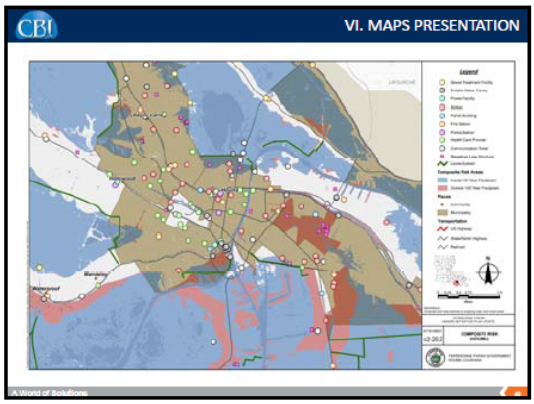
A World of Solutions



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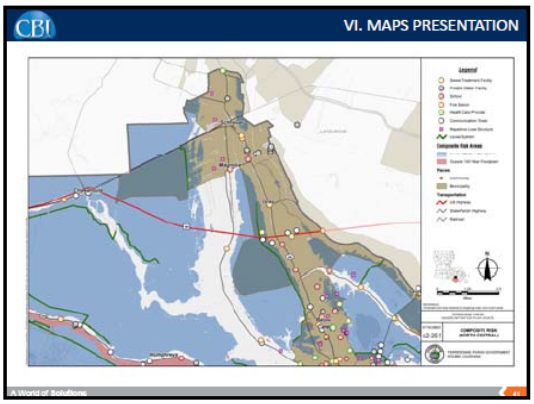
A World of Solutions



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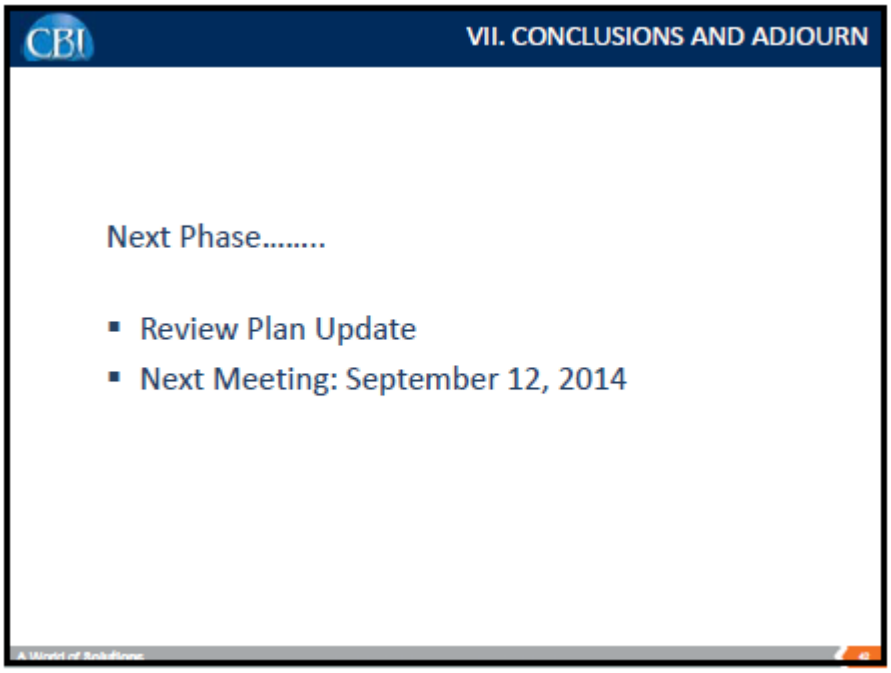
A World of Solutions


VII. CONCLUSIONS AND ADJOURN
Next Phase.....
Review Plan Update
Next Meeting: September 12, 2014

Attachment c1-3.4A
Meeting 4—Advertisement

Attachment c1-3.4B
Meeting 4—Sign-in Sheets

Terrebonne Parish Hazard Mitigation Plan Update 2015
Friday, September 12, 2014 2 PM Waterlife Museum
7910 W. Park Ave, Houma, Louisiana
Meeting topic: Draft Plan Review

	SIGN IN	Last Name	First Name	Organization	Title	Comments
1		Adams	Phillip	TPCG Assessor's Office	Commercial Bldgs	
2		Allemand	Gwen			
3		Alford	Tony	Terrebonne Levee & Conservation District	President TLCD Board	
		Amedee'	Beryl	Terrebonne Parish Council	Concil Woman, District 4	
4		Arnette	Jane	South Central Industrial Association	Executive Director	
5		Babin	Danny	President of the Regulatory Planning Commission	Chairman	
6		Benoit	Eric	Lafourche Parish	Asst. OEP	
7		Belanger	Wanda	Southeast LA HBA		
8		Boudreaux	Chris	Lafourche Parish	OEP Director	
9		Boudreaux	John	Assumption Parish	OEP Director	
10		Boucvalt	Jobe	St. John	OEP Director	
11		Bourg	Doug	Terrebonne Parish Consolidated Government	Pairsh President Assistant	
12		Bourg	Tom	Terrebonne Parish Consolidated Government	Utility Director	
13		Bray	Jeanne	DPW	Engineer	
14		Bush	Gregory	Terrebonne Parish Consolidated Government	Public Works Director	
15		Carlos	Suzanne	Houma-Terrebonne Chamber of Commerce		
16		Case	Peggy	Terrebonne Readiness and Assistance Coalition	Executive Director	cancel
17		Cehan	Connie	Terrebonne Parish School District		
18		Claudet	Michel	Terrebonne Parish Consolidated Government	Pairsh President	con Rich
19		Cloutier	Budd	Planning Commission	Chair	
20		Crispino	Steve	South Louisiana Bank	Vice President	

Terrebonne Parish Hazard Mitigation Plan Update 2015
Friday, September 12, 2014 2 PM Waterlife Museum
7910 W. Park Ave, Houma, Louisiana
Meeting topic: Draft Plan Review

	SIGN IN	Last Name	First Name	Organization	Title	Comments
21		Daigle	Melissa	LSU LA SeaGrants	Legal Coordinator	
22		Dardar	Thomas	United Houma Nation	Principal Chief	
23		Dardar	Shirell	Biloxi-Chitamacha Confederation of Miskogees	Deputy Chief	
24		DeFraites	Arthur	Gulf South Engineering	President	
25		Deroche	Eric	St. James Parish	OEP Director	
26		Drury	David	TPCG	TPCG Facilities Manager	
27		Dufrene	Chief	Houma Fire Department	Fire Chief	
28		Duplantis	Duffy	TPCG	GIS	
29		Duplantis	Todd	TPCG	Houma Police Chief	
30		Dupre	Reggie	TLCD	Executive Director	
31		English	Nicolette	GOHSEP	Planner	
32		Eues	Earl	OEP-Terrebonne	Director	
33		Falgout	Julie	LA. SeaGant	Seafood Industry Liaison	
34		Gauthe	David	BISCO		
35		Gerbasi	Jennifer	Terrebonne Parish Consolidated Government	Division Manager/Recovery Planner	
36		Gordon	Patrick	Planning and Zoning	Director	conflict
37		Grabert	Loney	TPCG	Assessor	
38		Graham	Ken	NOAA	Meteorologist-in-Charge	
39		**Gueniot-Biegler**	Mary	Bayou Grace	Executive Director	
40		Hebert	Aaron	TPSO	Asst. Uniform Commander	
40		Hymel	Francis	St. James Parish	Asst. OEP	

Terrebonne Parish Hazard Mitigation Plan Update 2015
Friday, September 12, 2014 2 PM Waterlife Museum
7910 W. Park Ave, Houma, Louisiana
Meeting topic: Draft Plan Review

	SIGN IN	Last Name	First Name	Organization	Title	Comments
41		Jofferson	Batron	LSU AG Center	County Agent	
42		Landry	Kayte	Assumption Parish	Asst. OEP	
43		Large	Geoff	Terrebonne Parish Consolidated Government	Chief Building Official	
44		Larpenter	Jerry	Terrebonne Parish Sheriff's Office	Sheriff	
45		LeBlanc	Kathy	Louisiana Department of Health & Human Services	Sanitarian	
46		Ledet	Brad	LaDay Construction		
47		Ledet	Lisa	Terrebonne Parish Consolidated Government	Floodplain Manager	
48		Levron	Al	Terrebonne Parish Consolidated Government	Capital Projects Admin.	
49		Liner	Michelle	Terrebonne Readiness and Assistance Coalition	Adminstrative Assistance	cancel
50		Lombardo	John	Restore or Retreat	Outreach Coordinator	
51		Maloz	Simone	South Central Industrial Association	Representative	
52		Marmande	Mitch	Terrebonne Levee and Conservation District	Program Manager	
53		Martin	Philip	Terrebonne Parish School District	Superintendent	
54		Matherne	Alan	LSU Ag Center	Area Agent	
55		Matherne	Nicolas	Terrebonne Parish	Coastal	
56		Milford, III	Gene	Gene Milford and Associates	Professional Engineer	
57		Moore	Jack	Terrebonne Parish School District	Risk Management	
58		Mullarkey	Christine	Red Cross	Resource Manager	

Terrebonne Parish Hazard Mitigation Plan Update 2015
Friday, September 12, 2014 2 PM Waterlife Museum
7910 W. Park Ave, Houma, Louisiana
Meeting topic: Draft Plan Review

	SIGN IN	Last Name	First Name	Organization	Title	Comments
59		Nail	Shirin	REMAX		
60		Naquin	Albert	Biloxi-Chitamacha Island Road Band	Chief	
61		O'Neal	Cindy	DOTD	State Floodplain Manager	
62		Pellegrin	Cynthia	ReMax Good Earth	Real Estate Broker	
63		Pena	Oscar	CB&I	Senior Vice President	
64		Peoples	Phyllis	Terrebonne General Medical Center	CEO	
65		Perry	Ron	St. Charles Parish	OEP Director	
66		Peterson	Kris	UNO-CHART		
67		Poche	Charlette	Terrebonne Parish Council	Council Clerk	
68		Pulaski	Chris	Terrebonne Parish Consolidated Government	Senior Planner - Plan/Zoning	
69		Riley	Mark	GOHSEP	Deputy Director, GOHSEP	
70		Rivette	Frank	NOAA	Meteorologist	
71		Rutter	Lea			
72		Schexnayder	Phil	Gulf South Engineering Associates, Inc.	Tech. Engineer	
		Shaw	Ronnie			
73		Smith	Kenneth	T. Baker Smith	President/CEO	
74		Sobert	Michael	Consolidated Waterworks District	General Manager	
75		Tastet	Jason	St. Charles Parish	OEP	

Terrebonne Parish Hazard Mitigation Plan Update 2015
Friday, September 12, 2014 2 PM Waterlife Museum
7910 W. Park Ave, Houma, Louisiana
Meeting topic: Draft Plan Review

	SIGN IN	Last Name	First Name	Organization	Title	Comments
76		Underwood	Jason	South Central Industrial Association		
77		Waire	Darrel	TPCG	Director-Housing	
78		Waitz	David	David Waitz Engineering	Professional Engineer	
79		Wilson	Lex	Courier		
80		Zeringue	Jerome	CPRA	CPRA Chair	
81						
82						

Attachment c1-3.4C
Meeting 4—Notes

AGENDA & NOTES
FOR
TERREBONNE
HAZARD MITIGATION PLAN UPDATE
9/12/2014
@ 2:00 P.M
Bayou Terrebonne Waterlife Museum
7910 W. Park Ave
Houma, Louisiana 70360

VI. WELCOME AND INTRODUCTIONS

Jennifer Gerbasi with Terrebonne Parish Consolidated Government (TPCG) opened the meeting with slides titled "Discussion Points." Jennifer reviewed stormwater regulations and floodplain management principles including discussions from meetings past. The developers suggested that joint public/private stormwater areas be created. Projects that were added include the following:

- Develop flood mitigation areas (ex. retention ponds) jointly (public/private) as a community wide flood reduction system
- Public Outreach – support efforts to educate realtor, mortgage, and appraisal groups at the local, state and national levels through our associations to capture both flood safety and flood risk in appraisals using the base flood elevation as a proxy for safety or risk.
- Public Document Availability – The group supported the permit office recording of substantial damage letters to inform the assessor's office, appraisers, title researchers, and buyers of the status.
- Flood disclosure – some conversation ensued regarding the ordinance amendment proposal to require disclosure of flood damages paid prior to the sale of a structure. The limited information the Parish can share from the repetitive loss data due to privacy concerns left a vacuum of information only available from the seller. This supported the conversation regarding the ability for the assessor/appraisers to include risk in the valuation of structures.
- Public Outreach – distribute adult education cards on hazard mitigation and disaster preparedness in English and Spanish (statewide initiative)
- Public Outreach – provide education in regards to levee safety including the allowable activities on levees.

No further input was provided in regards to ordinances that could be updated or edited to provide additional protection from hazards. It was noted that as previously noted, each department head should provide cost estimates for their respective projects and a better idea of the priorities of each department individually.

VII. SUMMARY OF THIRD MEETING

Nicole Cutforth with CB&I provided a short summary on the third committee meeting held on August 7, 2014. In meeting three the committee discussed the revised maps, the revised risk assessment, additional mitigation projects, and prioritized the mitigation projects by category.

VIII. DATA REVIEW

Nicole reviewed the maps, risk assessment, and repetitive loss inventory with the committee. It was noted that the zoom-in maps of the composite risk area should be removed due to the Privacy Act of 1974.

IX. MITIGATION PROJECT REVIEW

Nicole reviewed the mitigation project list and provided an opportunity for other projects to be added. No new projects were discussed. Geoffery Large and Nick Matherne with TPCG discussed the cost benefit difficulties in coastal restoration projects.

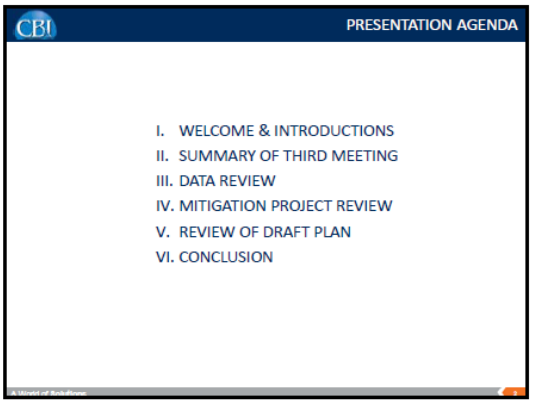
X. REVIEW OF DRAFT PLAN – CD'S

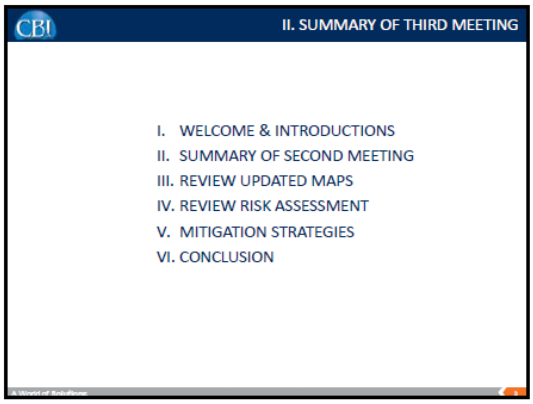
CD's of the draft plan were provided to all attendees and a copy was placed on the Parish Website. Nicole requested that the committee review the draft plan and provide comments in the next few weeks so that FEMA and GOHSEP can begin reviewing the draft mid-October.

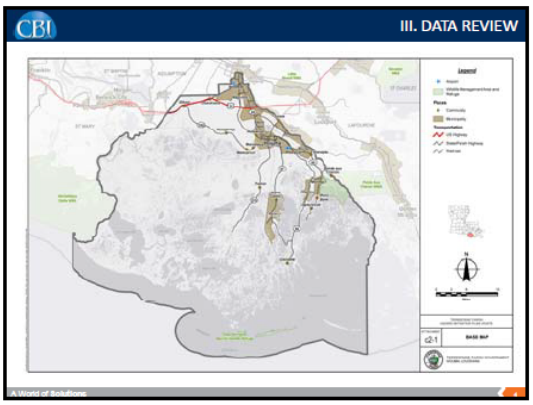
XI. CONCLUSION

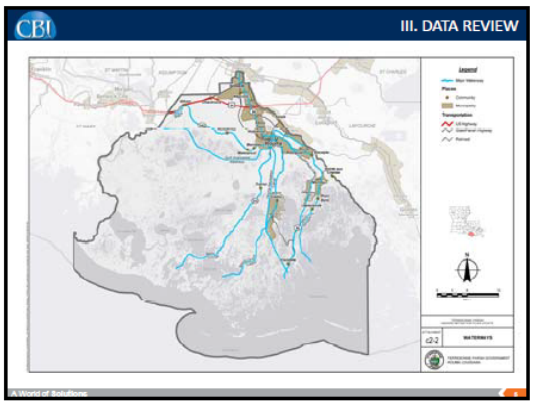
Once pertinent comments are incorporated, the draft plan will be submitted to GOHSEP and FEMA. Once approved by GOHSEP and FEMA, a resolution will be placed on the TPCG Council agenda for review and adoption. It is estimated that this will occur in February or March of 2015.

Attachment c1-3.4D
Meeting 4—PowerPoint Presentation Slides

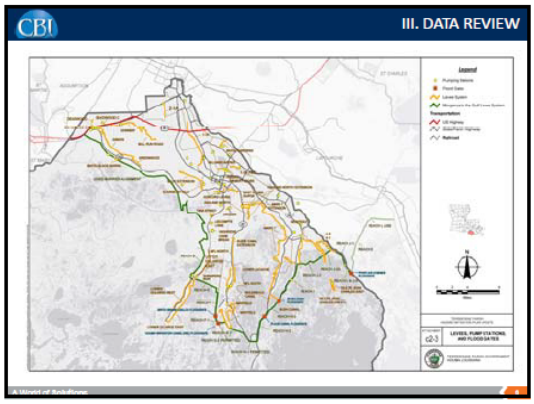








III. DATA REVIEW



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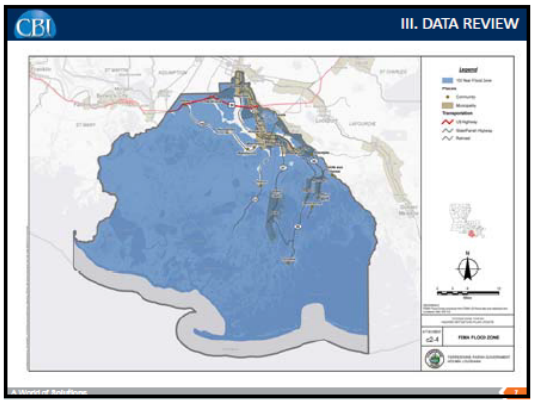

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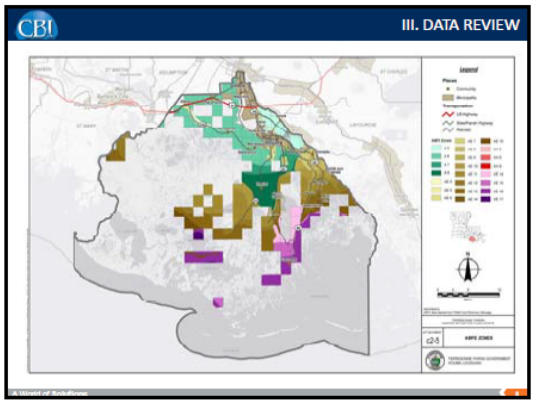

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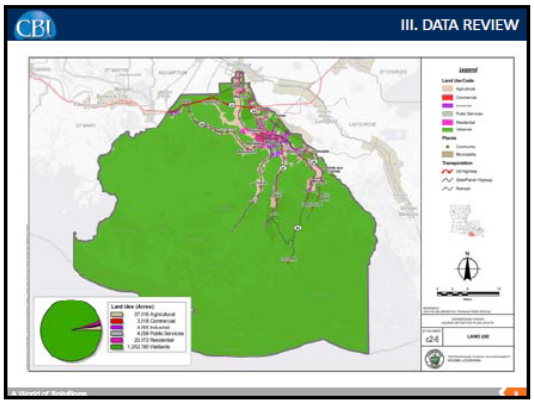
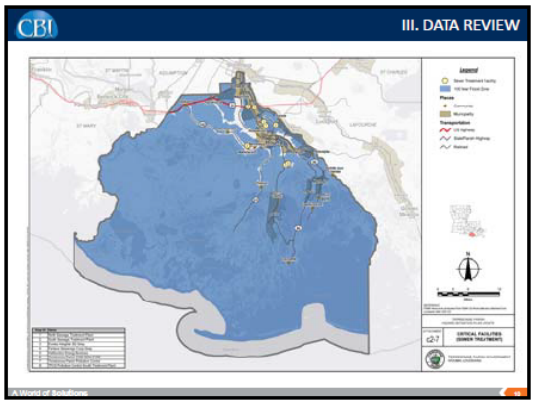


Land Use (Acres)

37,316	Agricultural
3,016	Commercial
4,958	Industrial
4,258	Public Services
20,372	Residential
1,252,780	Wetlands

III. DATA REVIEW



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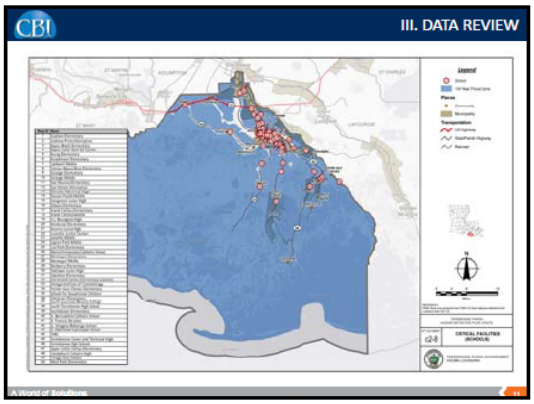
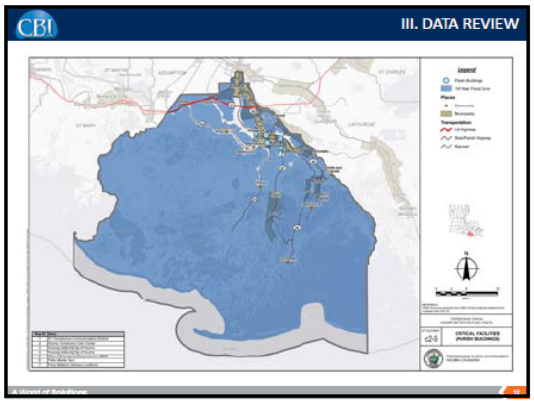
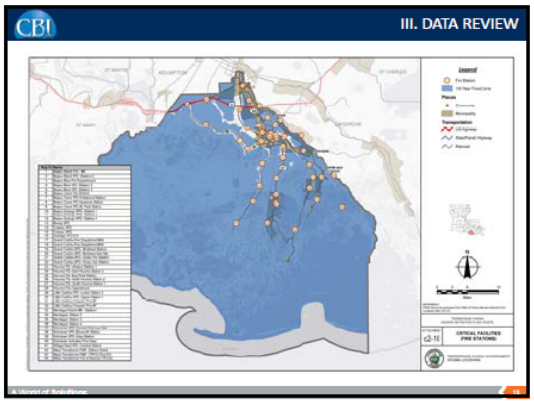




III. DATA REVIEW

A World of Solutions



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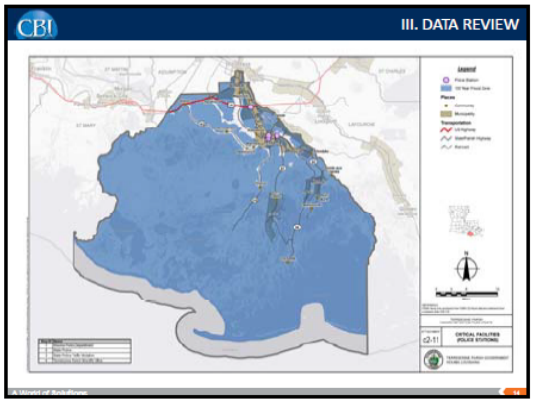

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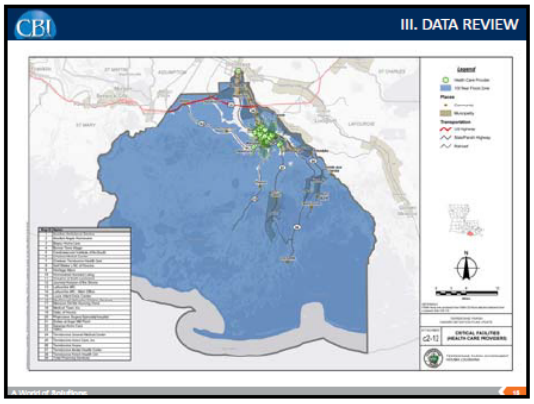

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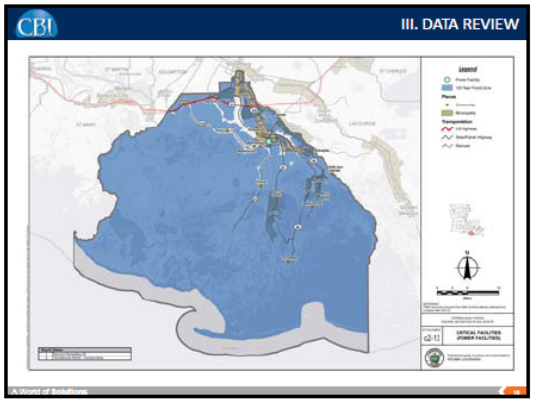

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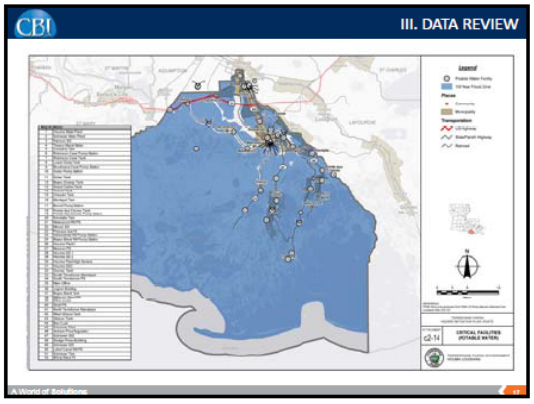

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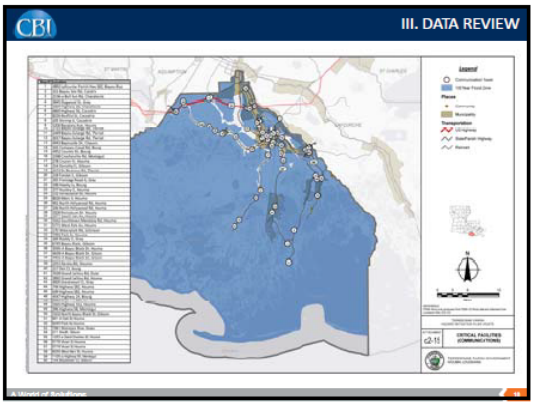
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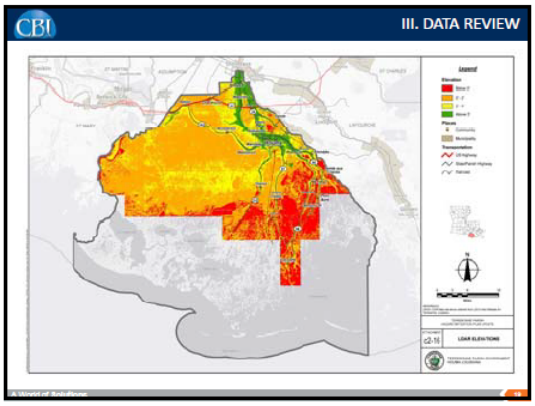
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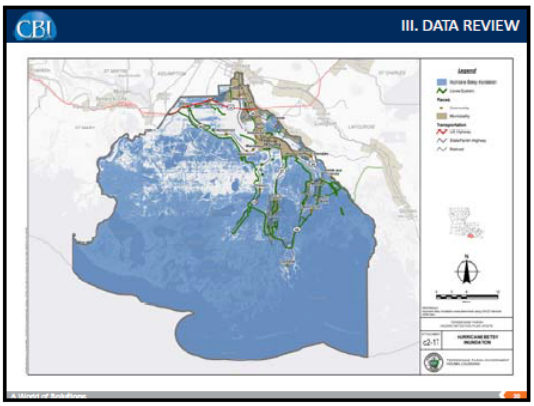
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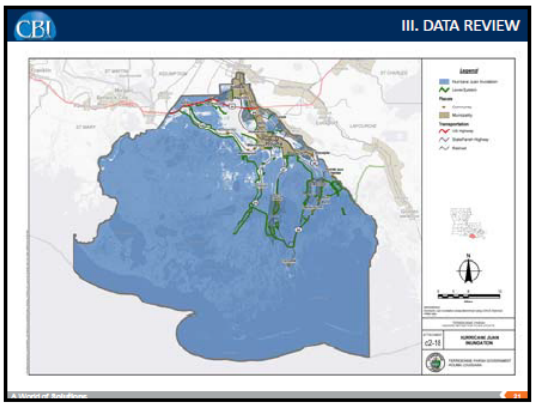
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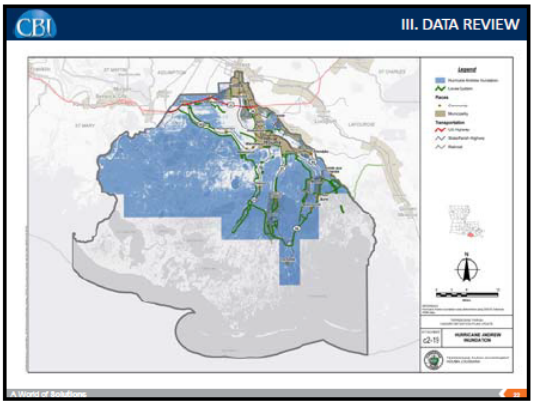
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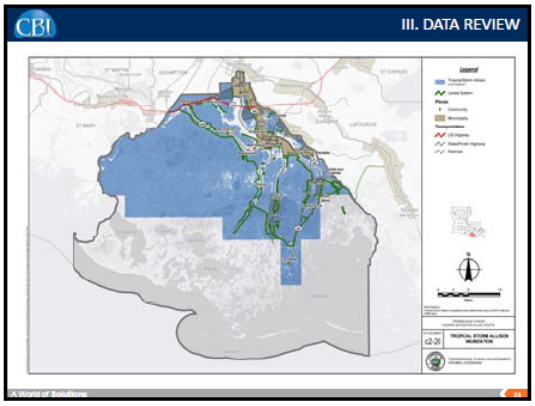
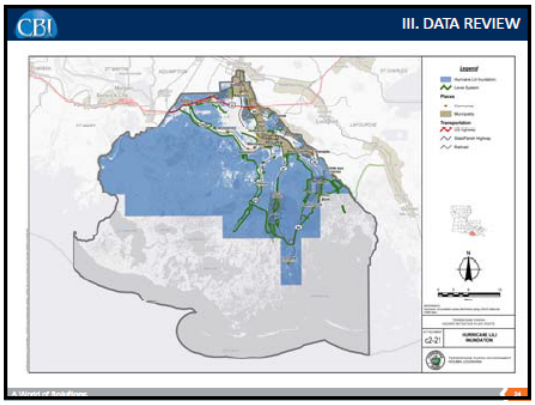
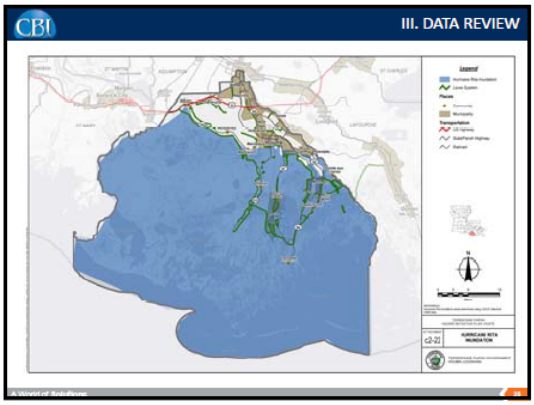

III. DATA REVIEW



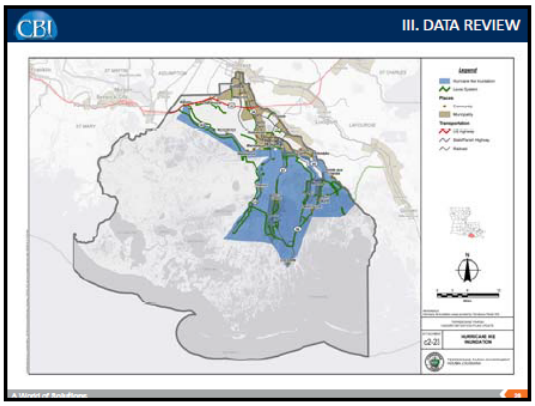
III. DATA REVIEW

A World of Solutions



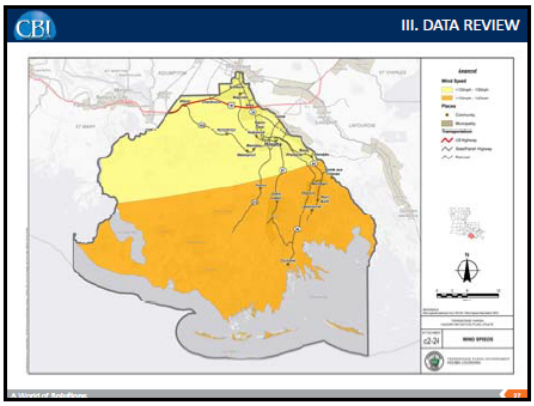
III. DATA REVIEW

A World of Solutions



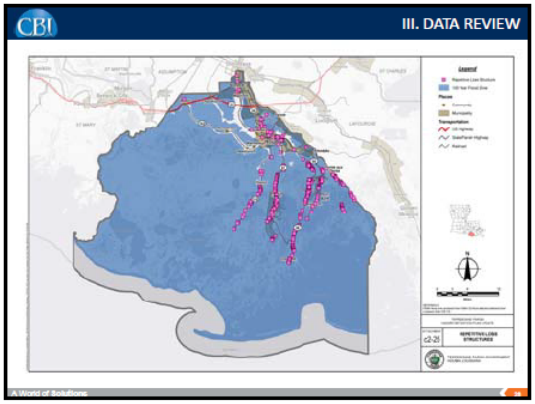
III. DATA REVIEW

A World of Solutions



III. DATA REVIEW

A World of Solutions



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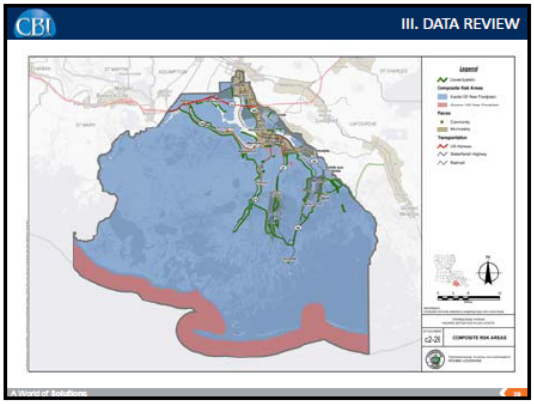
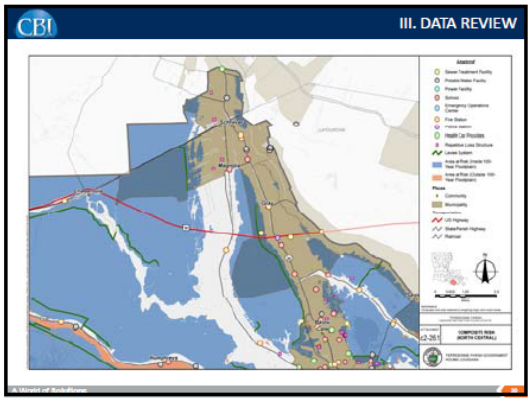
A World of Solutions



III. DATA REVIEW

A World of Solutions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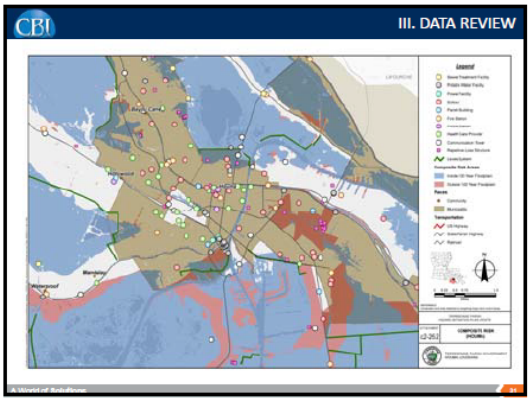
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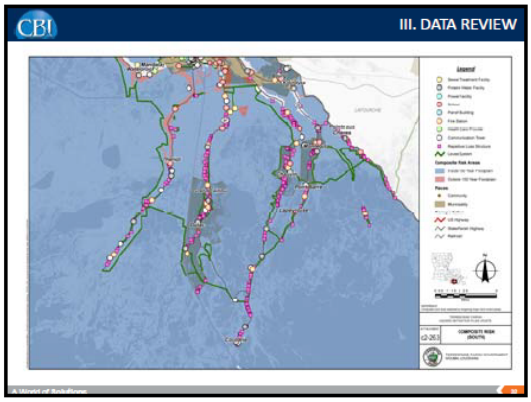
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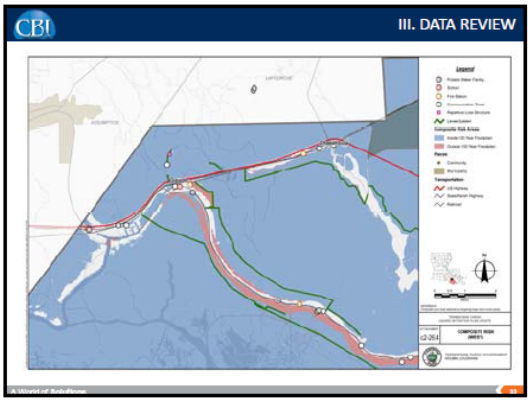
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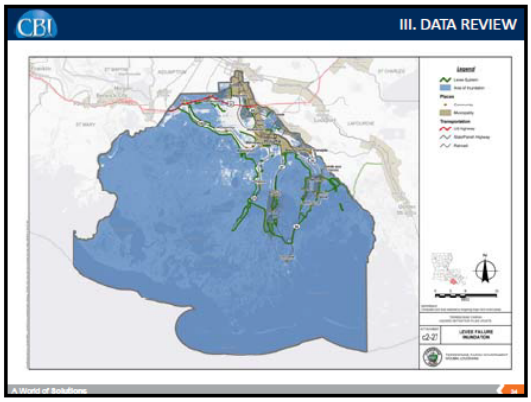
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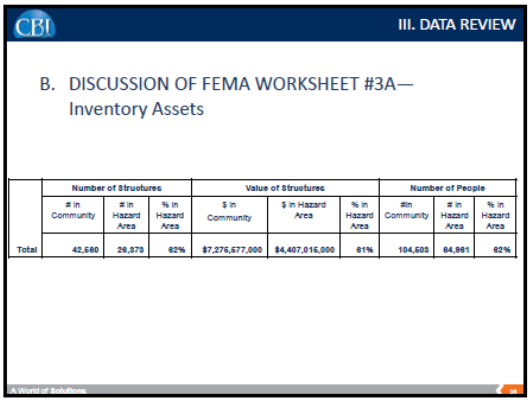
CBI
III. DATA REVIEW
B. DISCUSSION OF FEMA WORKSHEET #3A—
Inventory Assets
Number of Structures
Value of Structures
Number of People
in Community
in Hazard Area
% in Hazard Area
$ in Community
$ in Hazard Area
% in Hazard Area
#in Community
in Hazard Area
% in Hazard Area
Total
42,660
26,573
62%
$7,276,677,000
$4,407,016,000
61%
104,503
64,961
62%

III. DATA REVIEW

Discussion – FEMA Worksheet 4

- Replacement Value of Critical Facilities
  - $1.3 Billion
- Contents Value
  - $1.7 Billion
- Composite Risk Loss Estimate
  - $1.8 Billion

III. DATA REVIEW

D. REPETITVE LOSS STRUCTURES

- 514 structures identified
- Total amount of claims by these structures = $50 Million
- Average claim amount = $36,500

IV. PROJECT SCOPING

A. MITIGATION GOALS AND OBJECTIVES

B. PROJECT LIST (HANDOUT)

V. REVIEW OF DRAFT PLAN

VI. CONCLUSION

A. Next Phase
   1. Receive Comments by September 19, 2014
   2. Incorporate Comments
   3. Submit Final Plan to GOSHEP, FEMA, FEMA Region
   4. Receive Approval Pending Adoption Letter
   5. Put Resolution on Council Agenda

B. Adjourn

Discussion Points

Proposed for September 12, 2014

Achievements and Adjustments

- Go over the project types (from last HMPU)
- See attachment for 2010 Goals and Activities

Examples of potential future projects if needed

- Pump station elevation
- Residential elevation
- Levees
- Generators
- Communication improvements
- Warning system
- Demolition
- Etc.

Discussion to be Captured in Plan

- For each activity, there must be a discussion of why the activity is or is not appropriate for the community and its flood problems.
- For an activity that is determined to be appropriate,
  - Community's capacity to fund & implement the activity.
  - If an activity is currently being implemented, is it achieving expectations and, if not, should it be modified.
  - If the plan is an update of a previously credited plan, each activity recommended by the previous plan must be discussed, along with the status of implementation.

Preventive Activities

a. To what extent are zoning, stormwater management regulations, building codes, subdivision ordinances, and preservation of open space, and the effectiveness of current regulatory and preventive standards and programs sufficient to reach the desired level of flood protection?

- The discussion must review
- o How these tools can reduce future flood losses,
- o The current standards in the community's plans and regulations, and
- o Whether the community should adopt or revise such plans and regulations in light of the Step 5 problem assessment and the goals set in Step 6.

Current Parish Law and Guidance

- o Comprehensive or land use plan,
- o Building code,
- o Zoning ordinance,
- o Floodplain management regulations,
- o Subdivision ordinance, and
- o Stormwater management regulations.

Planning

- (b) review whether the community's floodplain management regulatory standards are sufficient for current and future conditions, as discussed under Steps 4(c) and 5(f).

Planning

- (c) review property protection activities, such as acquisition, retrofitting, and flood insurance;

Coastal

- (d) review activities to protect the natural and beneficial functions of the floodplain, such as wetlands protection;

Engineering and OEP

- (e) review emergency services activities, such as warning and sandbagging;

Levee Board

- (f) 5 points, if the plan reviews structural projects, such as levees, reservoirs, and channel modifications; and

Planning

- (g) review public information activities, such as outreach projects and environmental education programs.

Attachment c1-3.5A
Meeting 5—Advertisement

X000376194, Publication 09/30/2014
Public Notice
Meeting Announcement
Terrebonne Parish Hazard Mitigation
Plan Update

Come and comment on the Hazard Mitigation Plan! The Terrebonne Parish Consolidated Government is updating the parish's Hazard Mitigation Plan. The purpose of the plan update is to identify and prioritize future efforts to reduce our risk of damages from natural hazards like floods and wind events. The draft plan will be available for review October 3rd. Parish staff will be available to answer questions or take comments at a public meeting October 6th from 5:30 – 7:30. The public comment period will be open for two weeks. The public is encouraged to attend to provide feedback. All previous meeting presentations and drafts are available at www.tpcg.org/hmpu.

Monday, October 6th, 2014 at 5:30 pm
Bayou Terrebonne Waterlife Museum
7910 Park Ave.
Houma, LA 70360

Please direct questions about the meeting to Jennifer Gerbasi, at (985) 873-6565.

Attachment c1-3.5B
Meeting 5—Sign-in Sheets

Terrebonne Parish Consolidated Government
HMPU Steering Committee Preliminary Draft Review
Folklife Culture Center

Meeting date: *September 22, 2014, 1:30-3:00*

Name	Agency/Department	Phone #
Pam Roussel	GOHSEP	225-439-2047
Phil Adams	Assessor Office	985-876-6620
Julie Falgout	LA Sea Grant	985 856 2477
Lisa Cedet	TPCG	873-6567
Jack Moore	TPSB	876-7400
Geoff [illegible]	TPCG	876-6567
Mary Theriot Bigler	Bayou Grace	985-594-5350
Todd DuFrene	Houma Fire	985-873-6391
Patrick Gordon	Planning Dept.	985-873-6569
David Waitz	David Waitz Eng & Surv	985 447 4017
Carl Elves	[illegible]	985-873-635
Chris Pulaski	TPCG	985-873-6568
Chris LeBlanc	Houma Courier	337-263-4778
[illegible]	LA Sea Grant/LSU AgC.	985-677-0368
Michelle [illegible]	TPIAC	985 851 2950
[illegible]	ROR	985-859-8933

Terrebonne Parish Consolidated Government

HMPU Steering Committee Preliminary Draft Review

Folklife Culture Center

Meeting date: *September 22, 2014, 1:30-3:00*

Name	Agency/Department	Phone #
Tom Bourg	Utilities	
Jennifer Lebeau	Planning	

Attachment c1-3.5C
Meeting 5—Summary Meeting Notes

AGENDA & NOTES

FOR

TERREBONNE
HAZARD MITIGATION PLAN UPDATE

10/6/2014

@ 5:30 PM

Bayou Terrebonne Waterlife Museum
7910 W Park Ave
Houma, Louisiana 70360

I. WELCOME AND INTRODUCTIONS

The Terrebonne Parish Hazard Mitigation Plan Update Committee held their fifth open to the public meeting at the Bayou Terrebonne Waterlife Museum in Houma, Louisiana, on Monday October 6, 2014. The purpose of the meeting was to provide an opportunity to review the preliminary draft, and allow attendees to provide input on all aspects of the plan.

Jennifer Gerbasi of Terrebonne Parish introduced herself and asked attendees to introduce themselves and their goals in attending the meeting.

II. SUMMARY OF HMPU PROCESS TO DATE

The previous meeting schedule and public notices and outreach were provided to start the meeting. The documents and studies available for review were listed and by consensus, the meeting moved on to comments on the plan contents or gaps.

III. COMMENTS AND QUESTIONS ON THE PRELIMINARY DRAFT

1. According to the plan, there are 158 pumps in the Parish. Where is the water from a particular destination supposed to go? Education necessary for the public about how the pump systems work would better set expectations. Plan shows the maps, but doesn't show the area that each pump drains.
    a. Response: This information was not available at the meeting. The educational component will be taken into consideration in the plan if there is no current document available.
2. Maintenance of the drainage system needs to be improved. Is there a maintenance plan and a set schedule that ensures that the system will work in an event? An education campaign about litter is needed to protect the drainage system, and at least as important is enforcement by the Sheriff's office.

a. Response: These are important observations. The parish does have a maintenance schedule that is too broad to include in the plan. However, committee members not present at the meeting will respond to the request. On the litter issue, there have been ongoing educational efforts to encourage proper trash disposal. Fines for littering have been increased. Storm drain protection and maintenance have been brought up by community members in offline discussions during the planning process.

In continued discussion, the increased fines were not seen as a strong deterrent since enforcement was not consistent. The storm drains in particular were a concern (grass clippings, etc) as it can create backup and flooding in an event.

3. Chabert has a new levee system and drainage valves. Who is responsible for those valves and their operation? Is there a maintenance or day to day operational plan that is available to the public?

    a. Response. The levee department is participating on the committee, and will respond with the information that is available. If the information is not available, the development of this and other levees will be considered as a project to update public information in the future.

4. Who is responsible for which levees, and is there a maintenance plan for that? Is the same party responsible for enforcement of restrictions on levee use or abuse? Without enforcement, how are people to know the importance of the levee system, how it performs, and what activities are allowed? Is the maintenance proactive?

    a. Response. There are surge levees and drainage levees, and the Levee District and the Parish have responsibility for specific levees. The responsible party was not certain though the sheriff's office may prosecute. This was tabled until further information could be provided. There is a new levee safety video being developed as a result of a grant. Like other videos on topics such as permitting and mitigation options, the video provides an overview of the importance of the levees, appropriate and inappropriate activities, and the need for citizens to report any activity that could weaken the levee and increase risk of failure.

5. The plan doesn't speak to threats from outside the parish. Flooding from the Mississippi and the Atchafalaya is not covered. Is there a plan for a breach in Donaldsonville or elsewhere?

    a. Response: The Steering Committee discussed this topic in light of the potential flooding in 2013 that was averted. Due to the lack of control the Parish felt it had over the upstream dams and levees, the topic was not pursued. Rather, state and federal sources were considered more appropriate to lead these efforts.

6. What protections do we have for the water supply if there is a manmade disaster or act of terrorism. Examples could be an oil spill followed by a hurricane which washes the oil into the bayou system, or contamination within the water system. How secure are the water treatment facilities, and can this be a part of this multithread plan?

    a. Response: The tribes submitted similar concerns about the combination of manmade and natural disasters on recovery and resources. This objective is being considered for inclusion in the plan. The plan does outline various methods for providing potable water in the event that saltwater intrusion affects the water sources for the Parish. These plans for saltwater intrusion are likely to be applicable to other contamination scenarios.

    b. The plan is focused on natural disasters for the most part, and not terrorism. Staff will request any plan related to this threat to the water system be provided.

The summary of the public discussion was that proactive maintenance of the built infrastructure and enforcement of current regulations will be more effective than more new regulations that are not enforced. Likewise, plans or standard operating procedures for maintenance should be developed if they don't exist, but regularly scheduled implementation is just as important.

IV. CONCLUSION

Written or verbal comments were requested for any further comments on projects or the draft content, layout, or process.

Attachment c1-3.5D
Meeting 5—PowerPoint Presentation Slides

Discussion Points

Proposed for October 6, 2014

Achievements and Adjustments

- Go over the project types (from last HMPU)
- See attachment for 2010 Goals and Activities

Examples of potential future projects if needed

- Pump station elevation
- Residential elevation
- Levees
- Generators
- Communication improvements
- Warning system
- Demolition
- Etc.

Agenda: Meeting VI

- Review Project List
  - Discuss sufficiency of current efforts
  - Discuss capacity of Parish to accomplish tasks
  - Add any new projects to the list
  - Add responsible party to each type of project
  - Add cost estimate as possible (range/ballpark)
- Review the Meeting IV Presentation for Maps
- Comments on the current draft
- Assignments and Adjournment

Discussion to be Captured in Plan

- For each activity, there must be a discussion of why the activity is or is not appropriate for the community and its flood problems.
- For an activity that is determined to be appropriate,
  - Community's capacity to fund & implement the activity.
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Current Parish Law and Guidance

- o Comprehensive or land use plan,
- o Building code,
- o Zoning ordinance,
- o Floodplain management regulations,
- o Subdivision ordinance, and
- o Stormwater management regulations.

Planning

- (b) review whether the community's floodplain management regulatory standards are sufficient for current and future conditions, as discussed under Steps 4(c) and 5(f).

Planning

- (c) review property protection activities, such as acquisition, retrofitting, and flood insurance;

Coastal

- (d) review activities to protect the natural and beneficial functions of the floodplain, such as wetlands protection;

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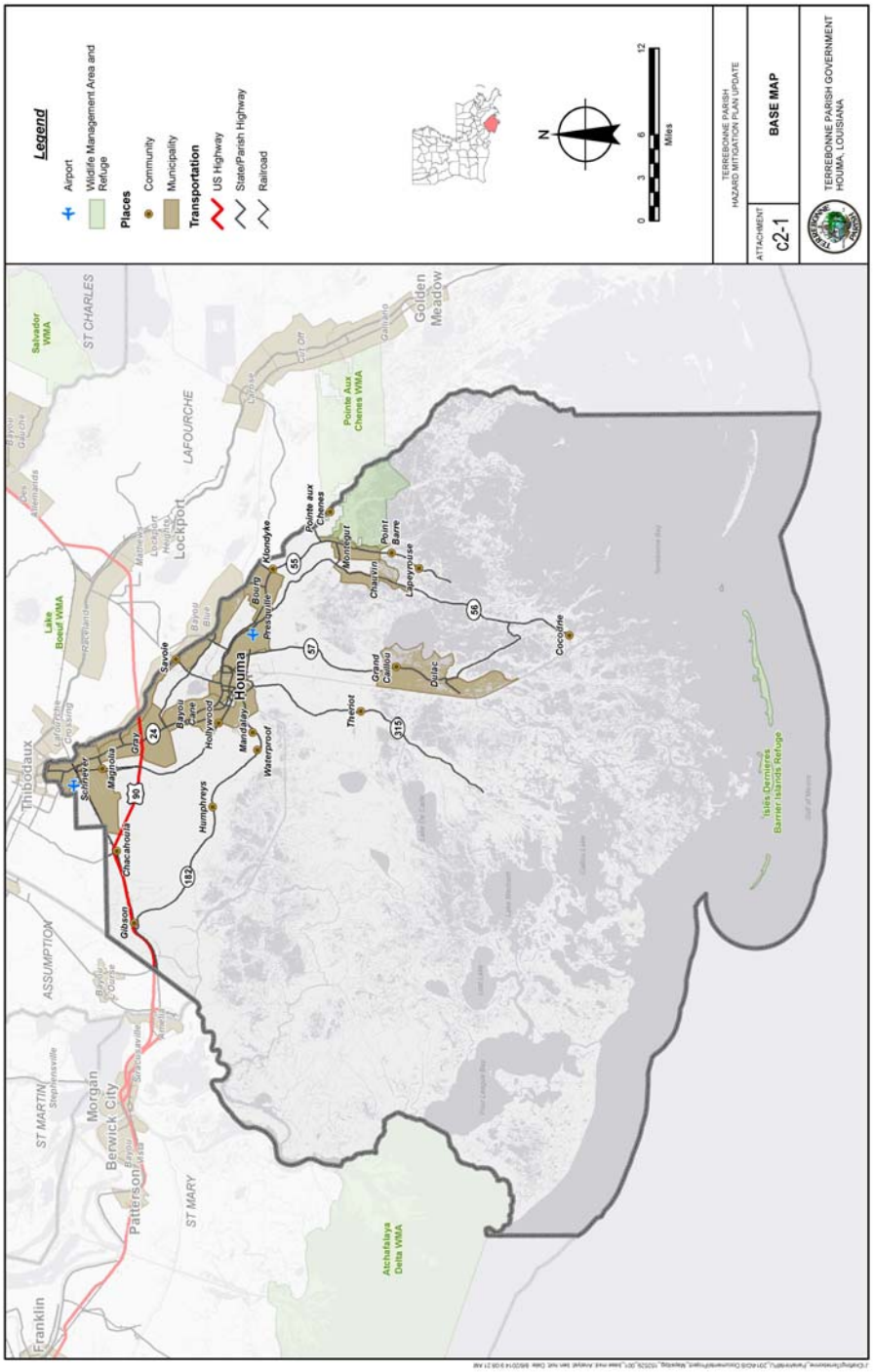
Levee Board

- (f) 5 points, if the plan reviews structural projects, such as levees, reservoirs, and channel modifications; and

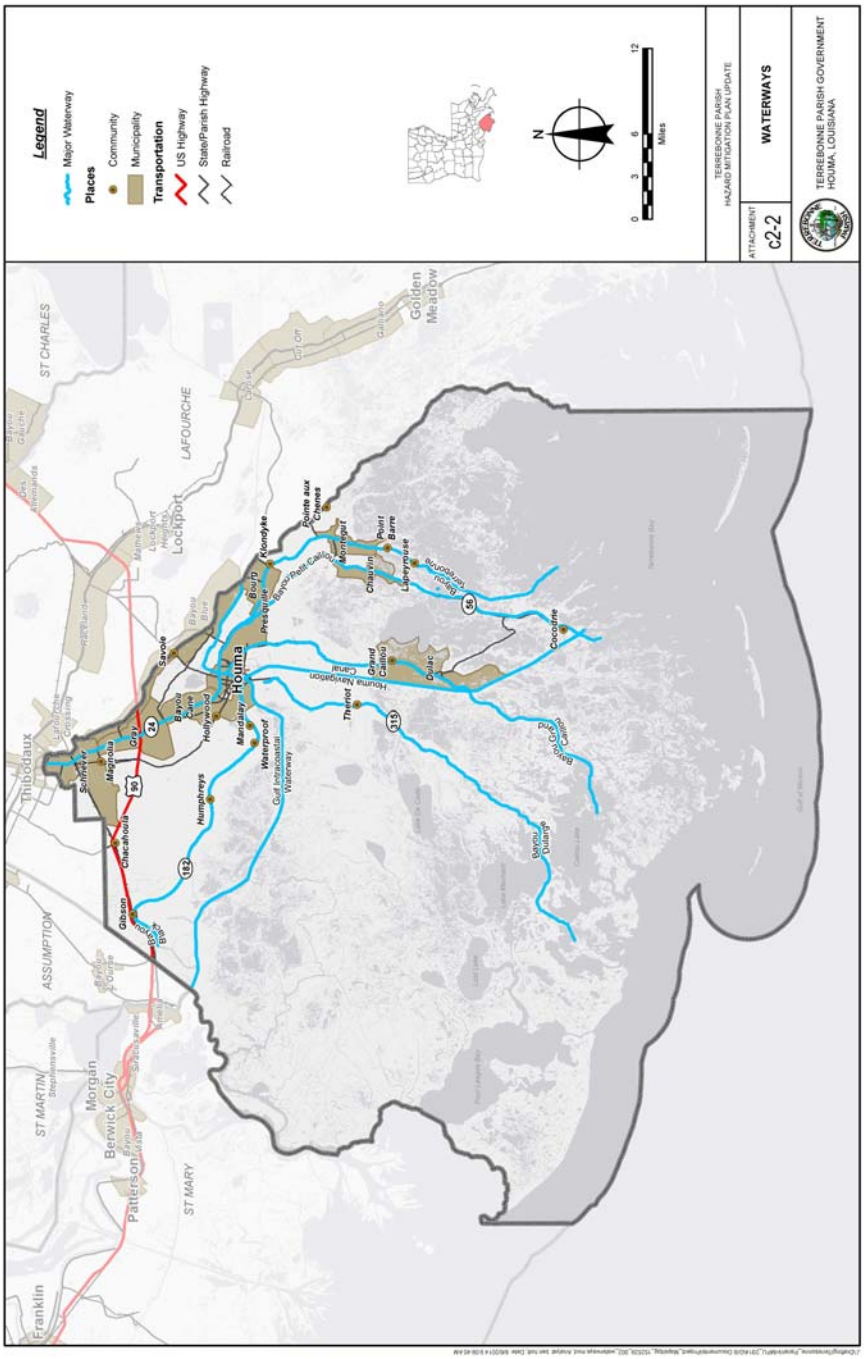
Planning

- (g) review public information activities, such as outreach projects and environmental education programs.

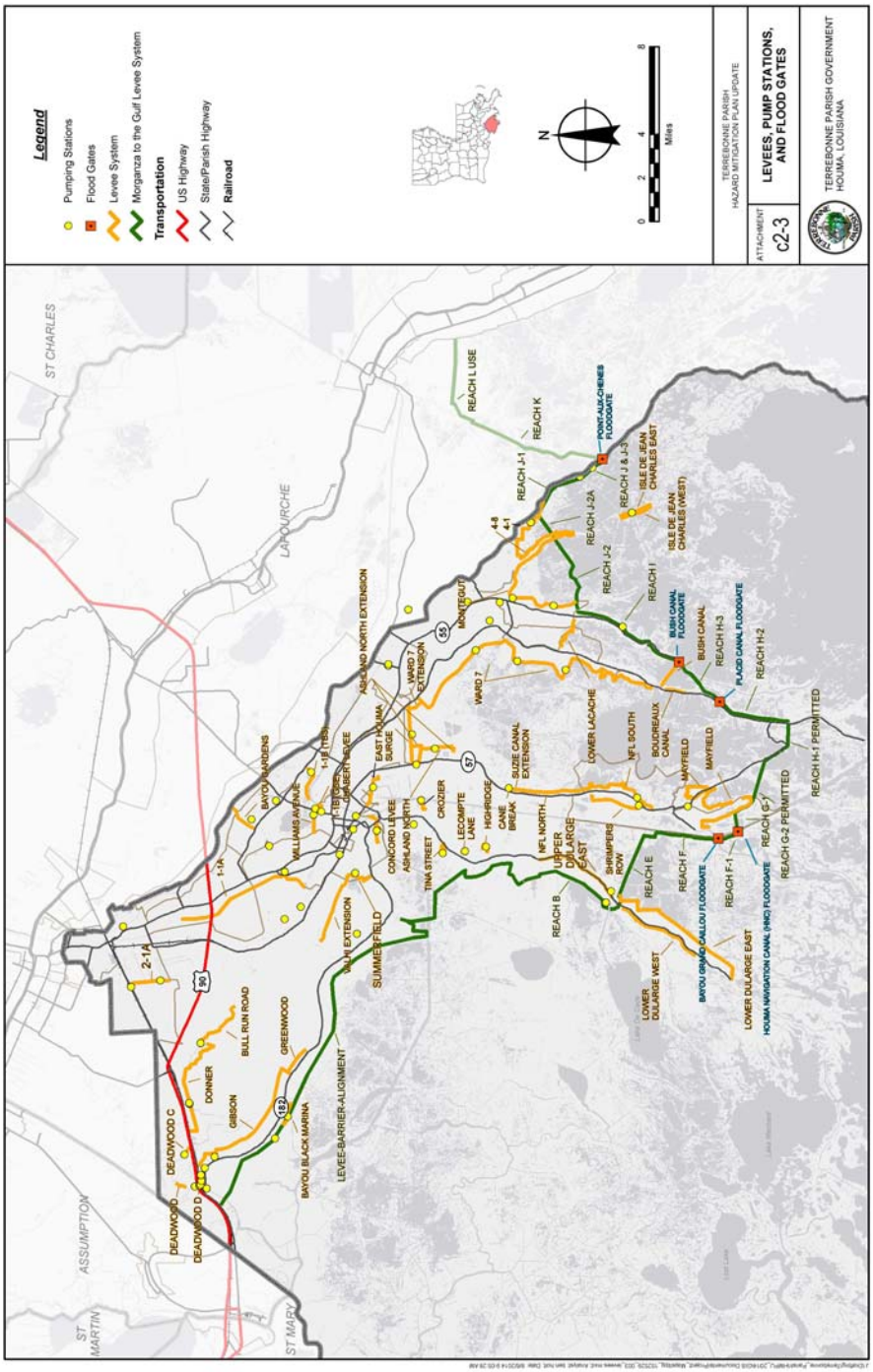
Attachment c2-1
Base Map



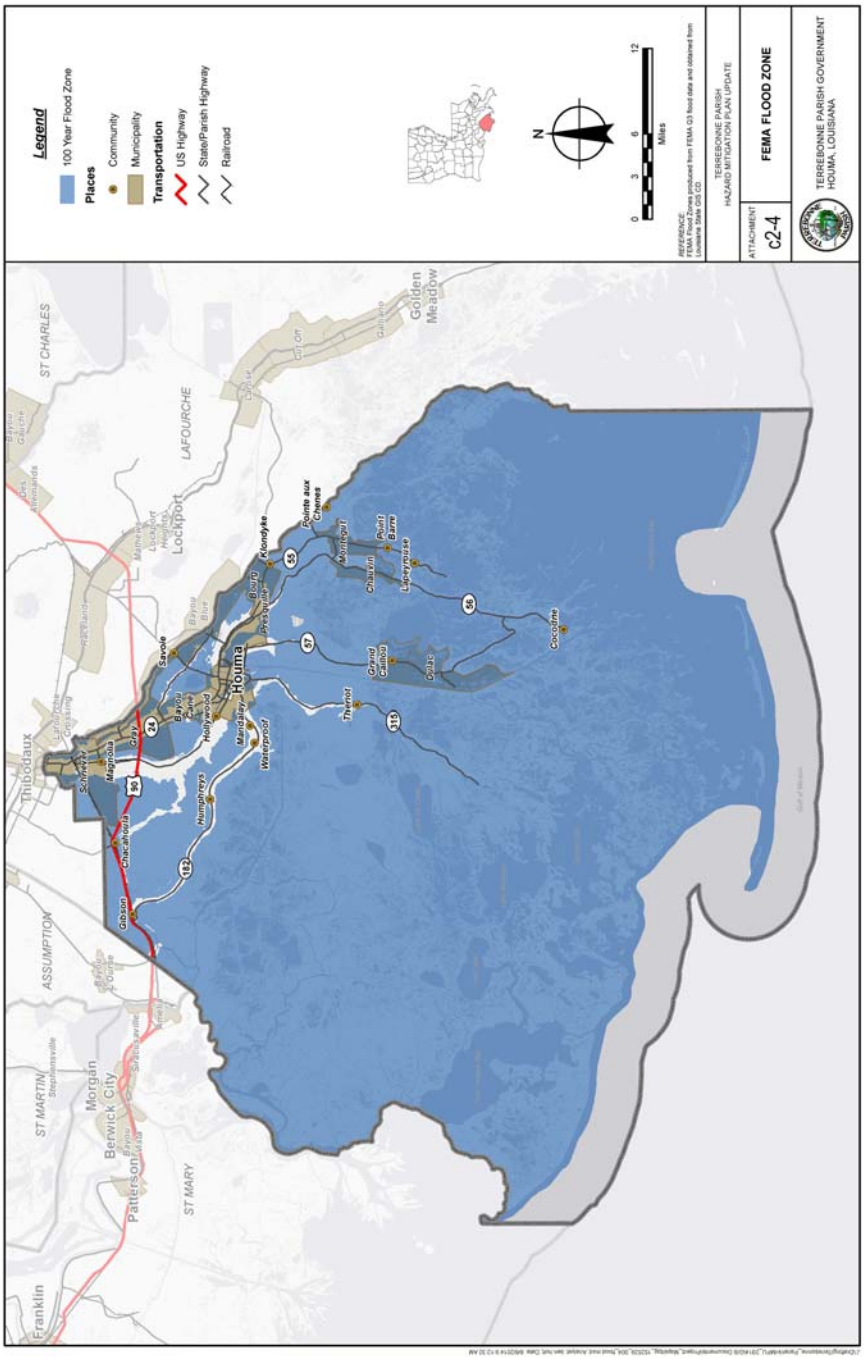
Attachment c2-2
Waterways Map



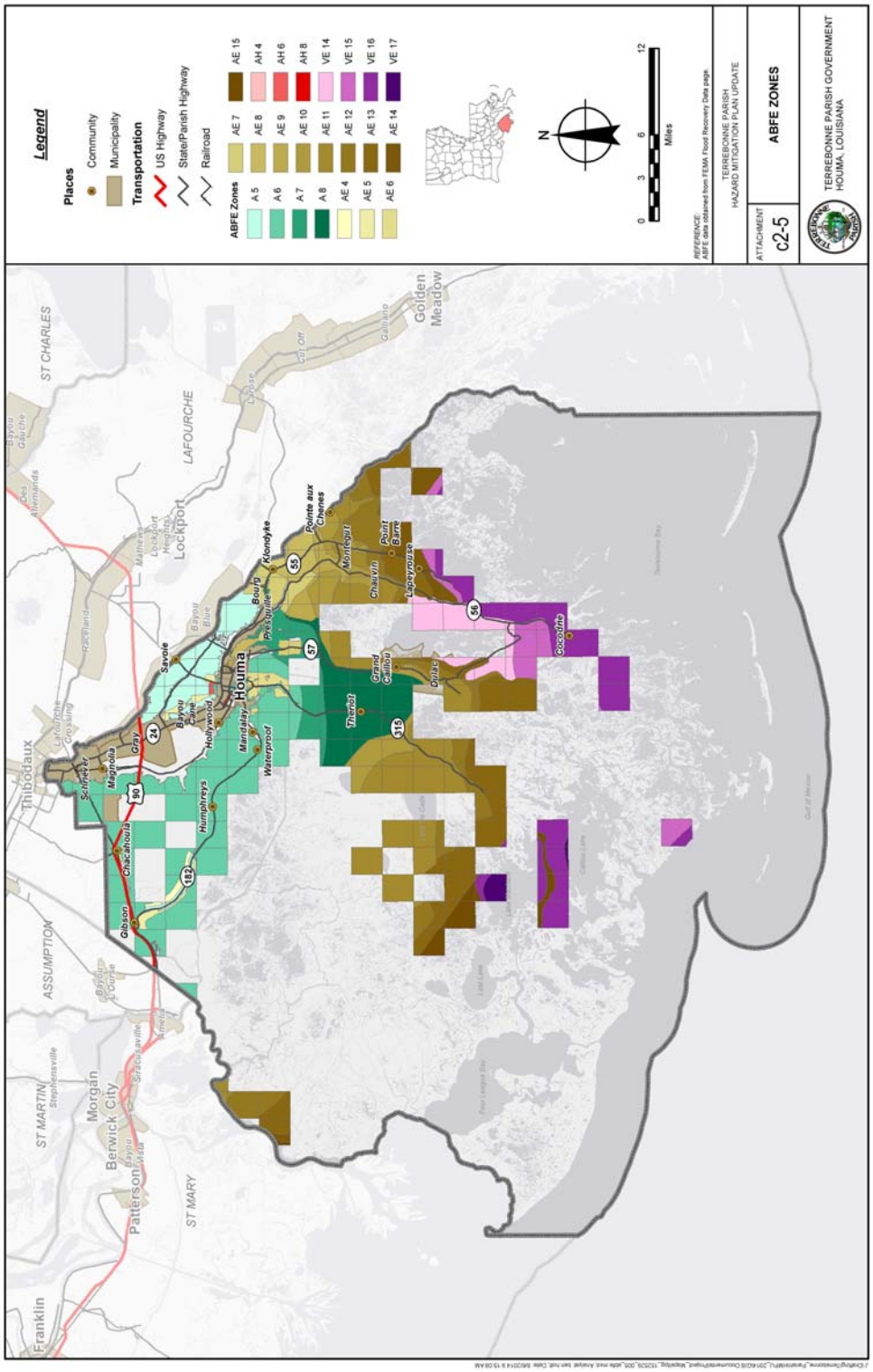
Attachment c2-3
Levees, Pump Stations, and Drainage Districts Map



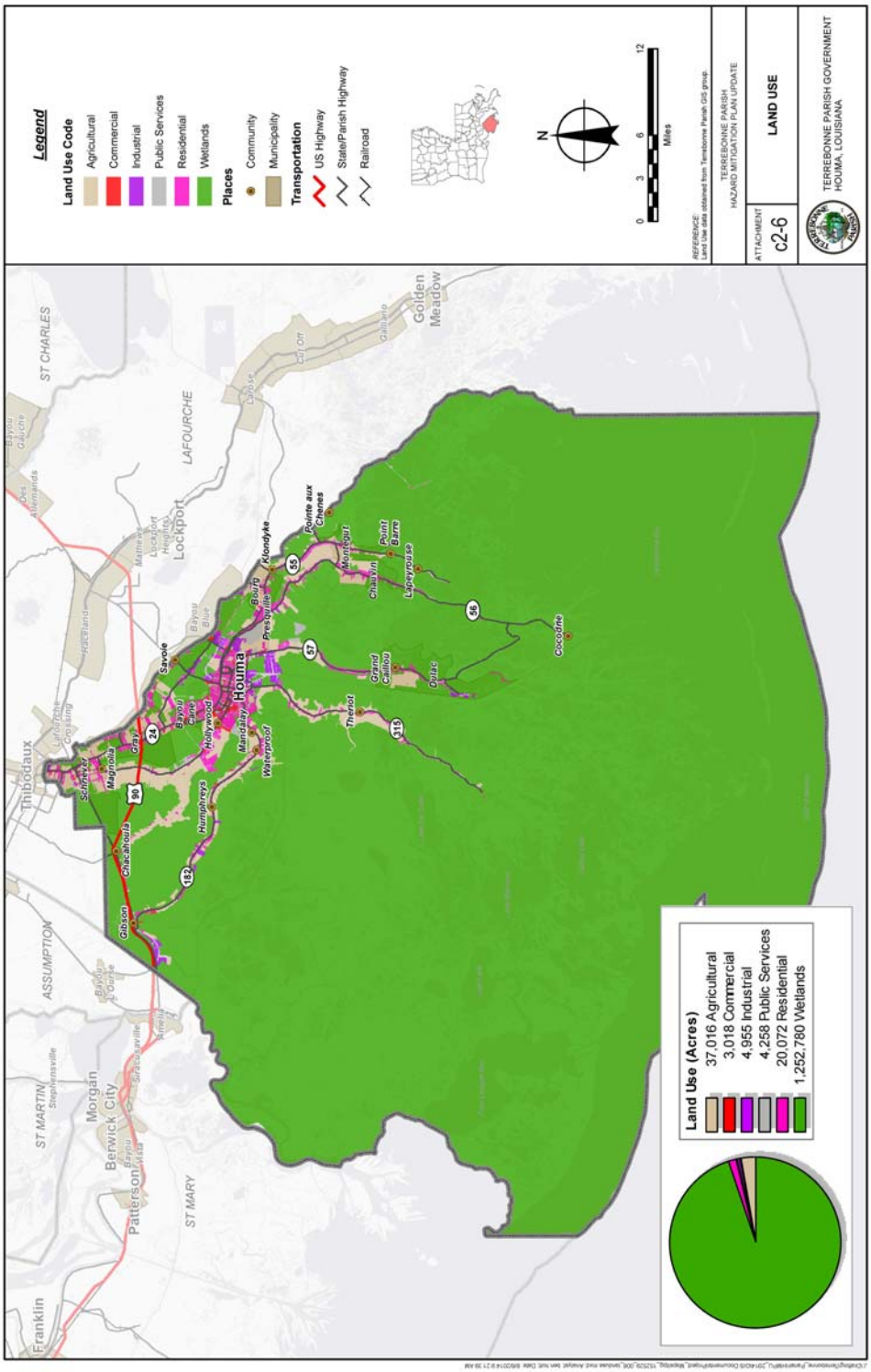
Attachment c2-4
FEMA Flood Map



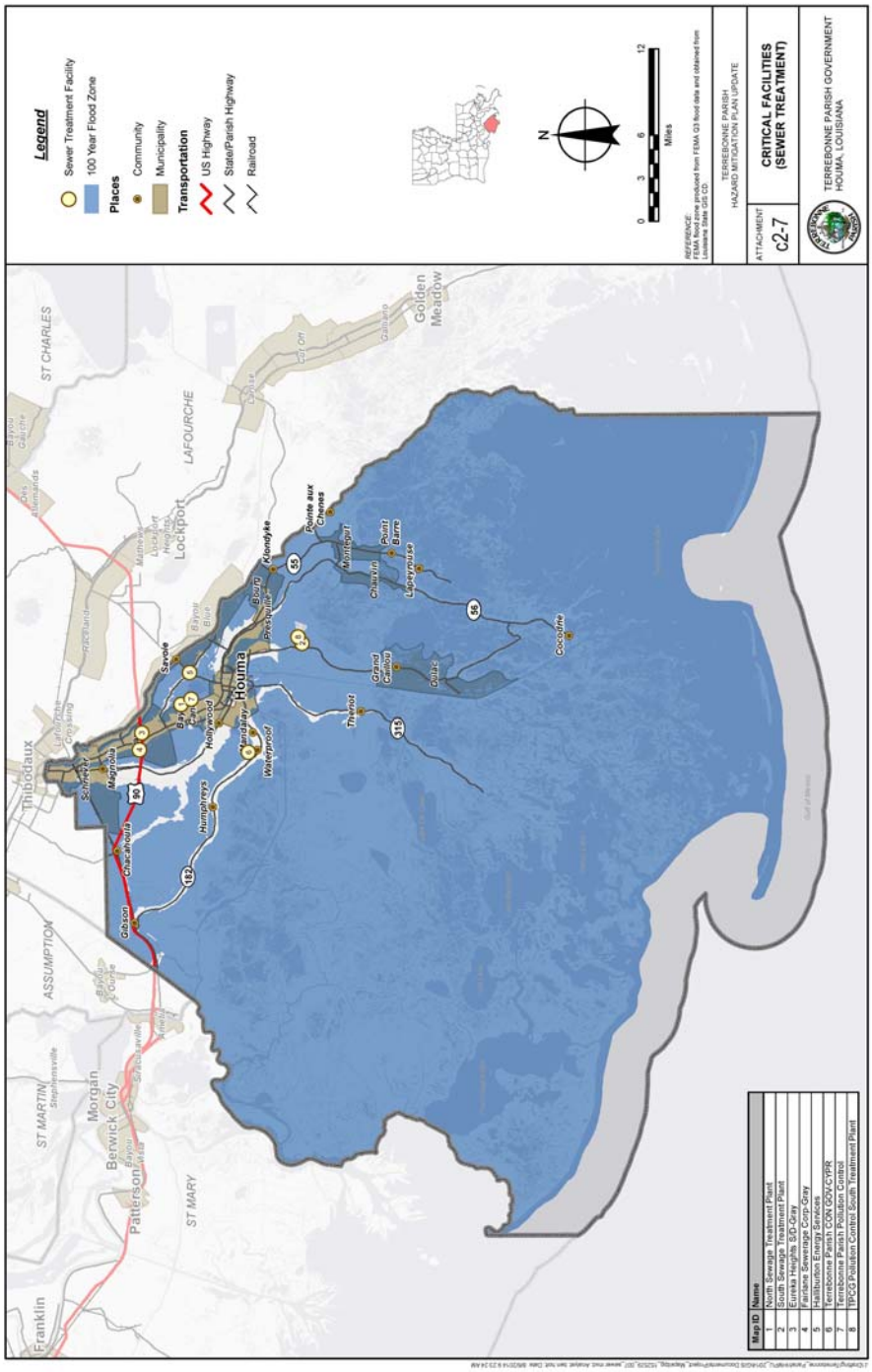
Attachment c2-5
ABFE Map



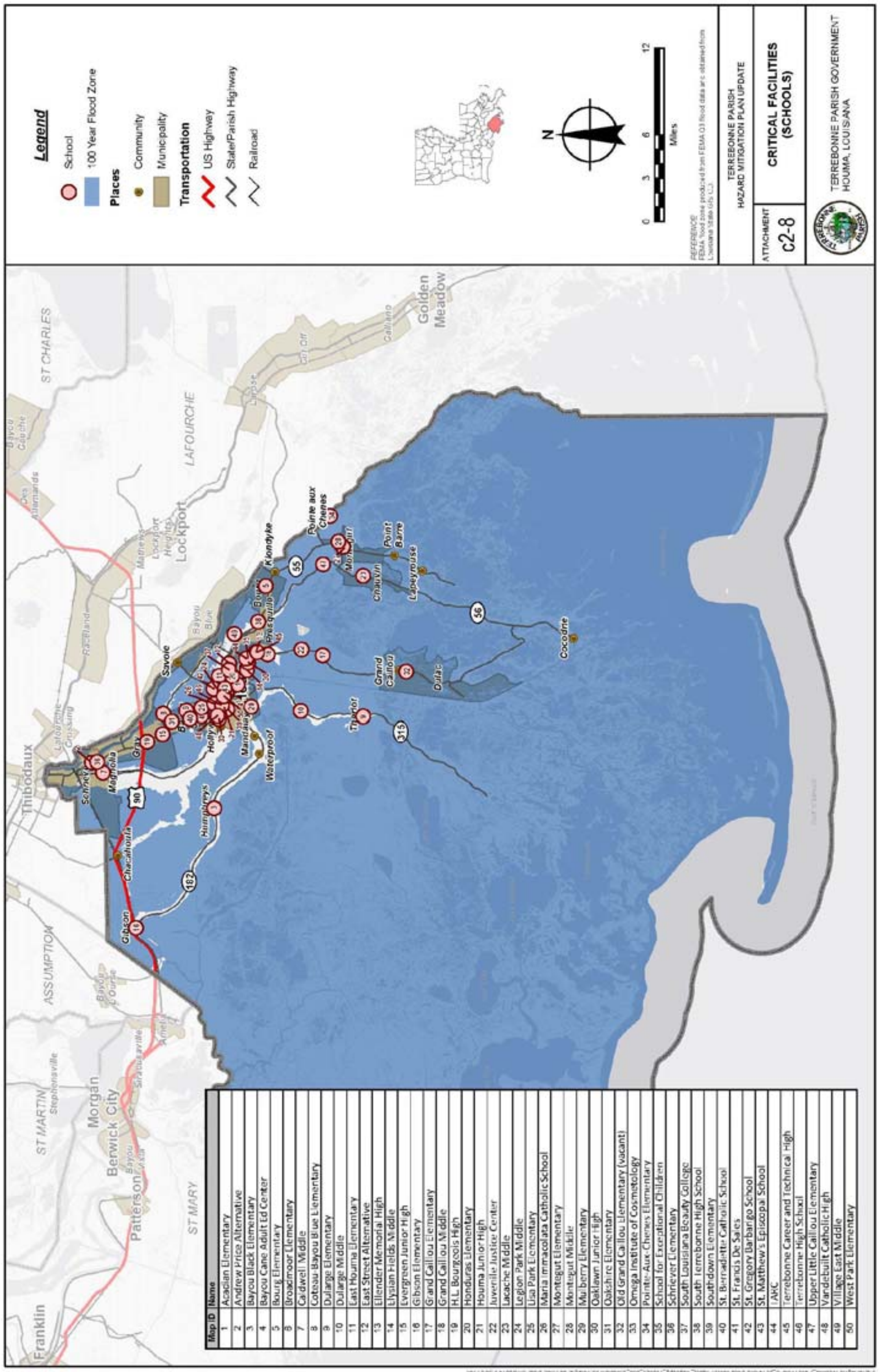
Attachment c2-6
Land Use Map



Attachment c2-7
Critical Facilities—Sewer Treatment

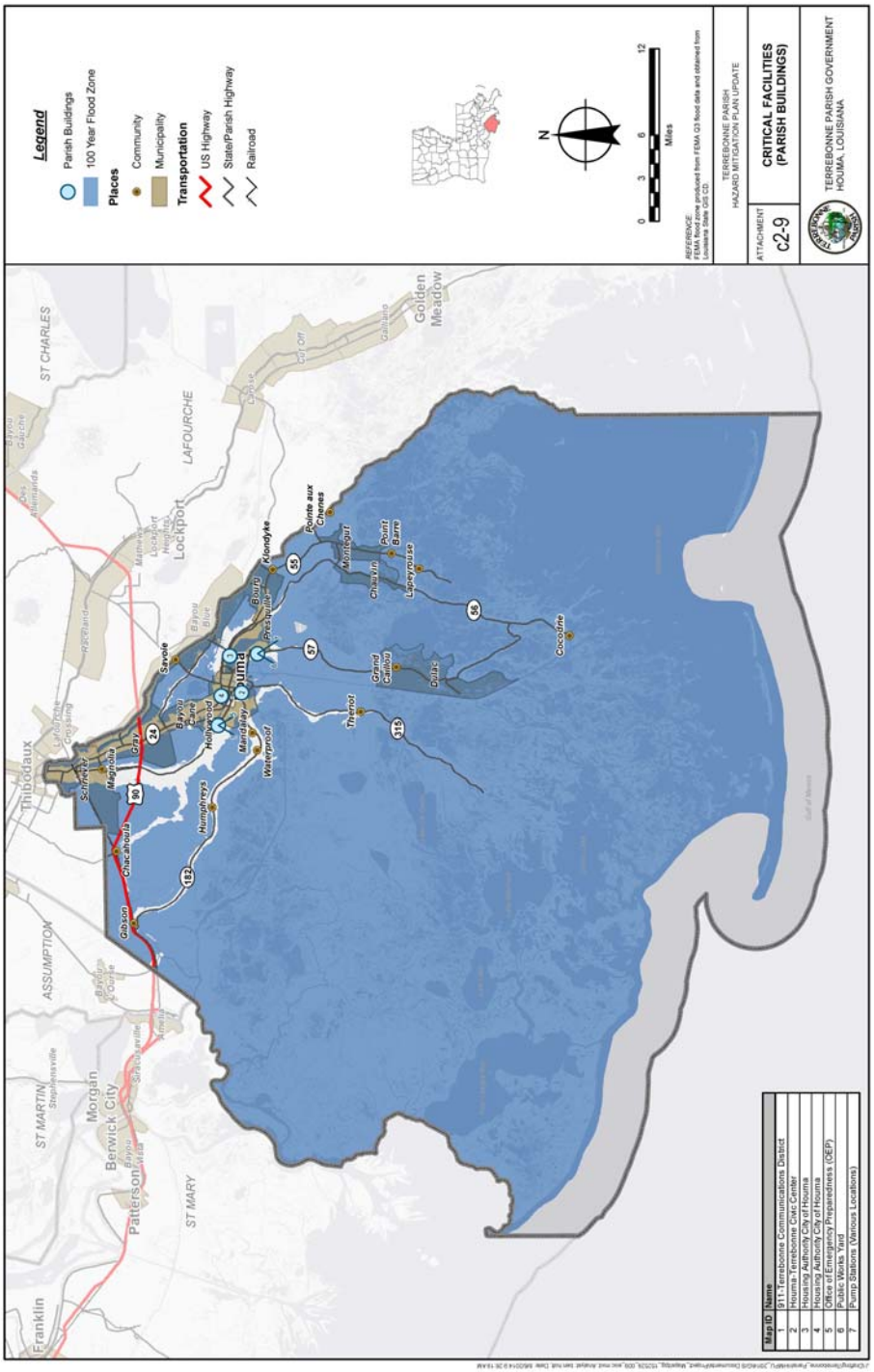


Attachment c2-8
Critical Facilities—Schools

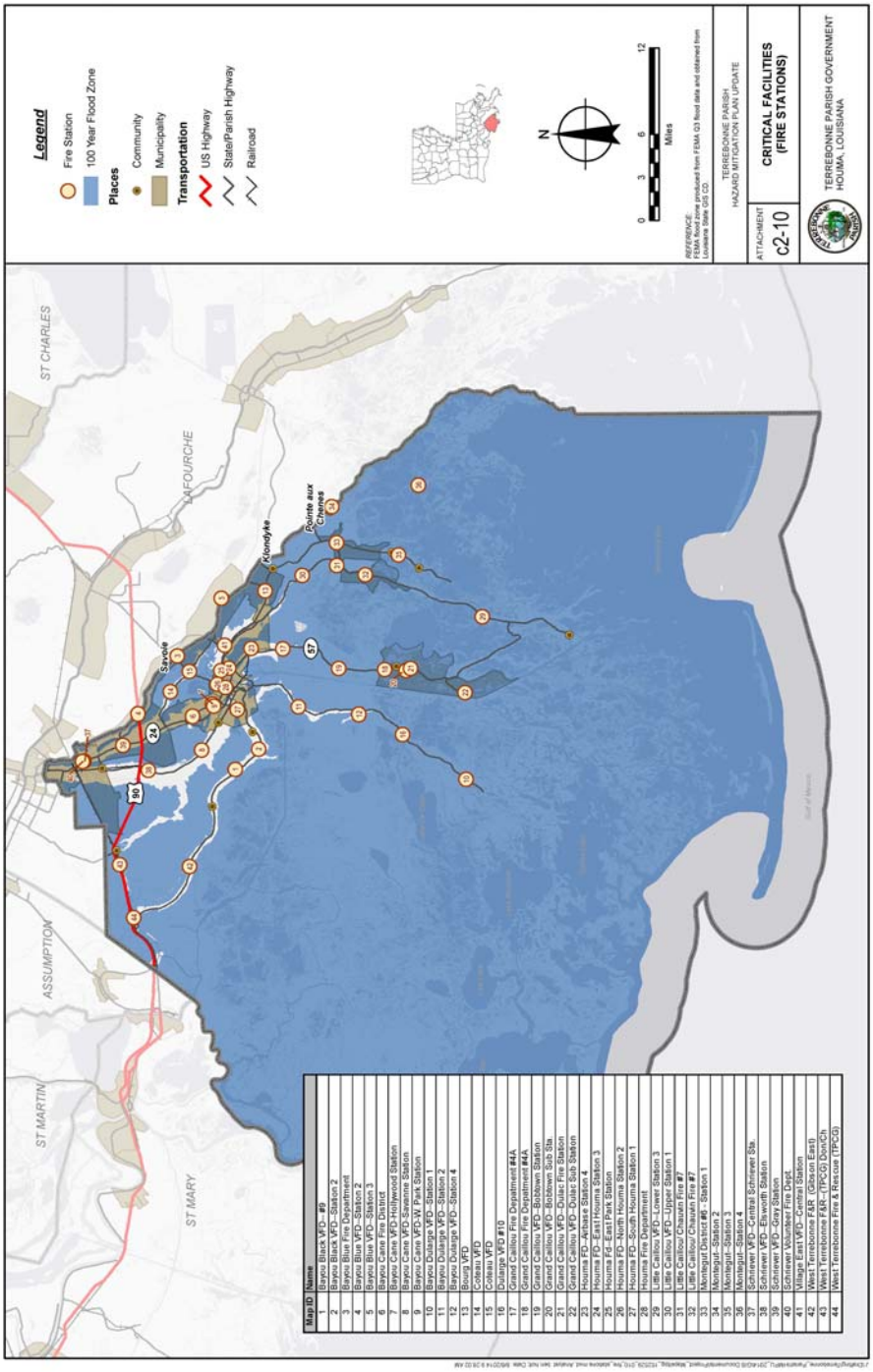


Map ID	Name
1	Acadian Elementary
2	Andrew Price Alternative
3	Bayou Black Elementary
4	Bayou Cane Adult Ed Center
5	Bourg Elementary
6	Broadmoor Elementary
7	Caldwell Middle
8	Coteau-Bayou Blue Elementary
9	Dularge Elementary
10	Dularge Middle
11	East Houma Elementary
12	East Street Alternative
13	Ellender Memorial High
14	Elysian Fields Middle
15	Evergreen Junior High
16	Gibson Elementary
17	Grand Caillou Elementary
18	Grand Caillou Middle
19	H.L. Bourgeois High
20	Honduras Elementary
21	Houma Junior High
22	Juvenile Justice Center
23	Lacache Middle
24	Legion Park Middle
25	Lisa Park Elementary
26	Maria Immacolata Catholic School
27	Montegut Elementary
28	Montegut Middle
29	Mulberry Elementary
30	Oaklawn Junior High
31	Oakshire Elementary
32	Old Grand Caillou Elementary (vacant)
33	Omega Institute of Cosmetology
34	Pointe-Aux-Chenes Elementary
35	School for Exceptional Children
36	Schriever Elementary
37	South Louisiana Beauty College
38	South Terrebonne High School
39	Southdown Elementary
40	St. Bernadette Catholic School
41	St. Francis De Sales
42	St. Gregory Barbarigo School
43	St. Matthew's Episcopal School
44	LARC
45	Terrebonne Career and Technical High
46	Terrebonne High School
47	Upper Little Caillou Elementary
48	Vandebilt Catholic High
49	Village East Middle
50	West Park Elementary

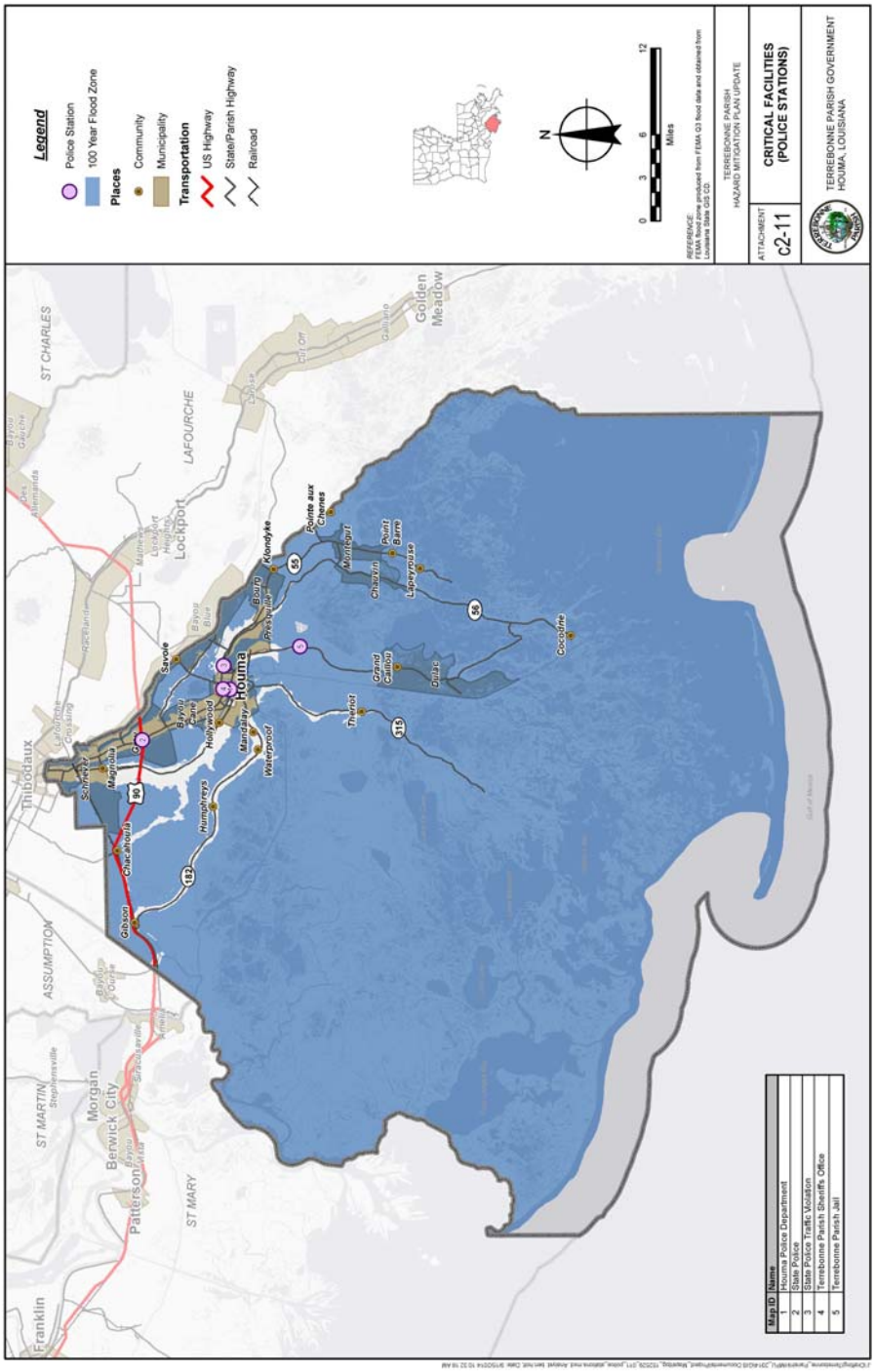
Attachment c2-9
Critical Facilities—Parish Buildings



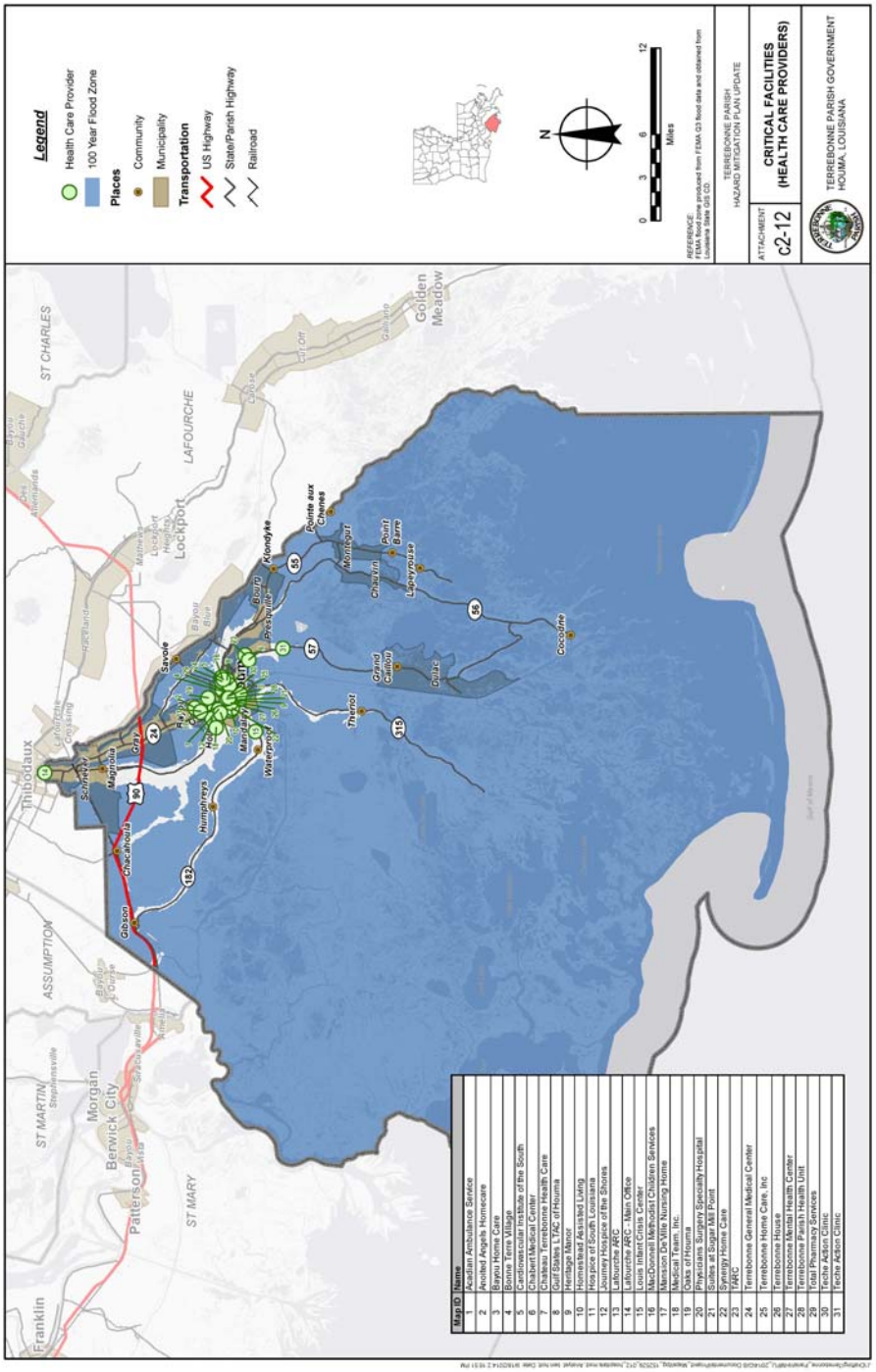
Attachment c2-10
Critical Facilities—Fire Stations



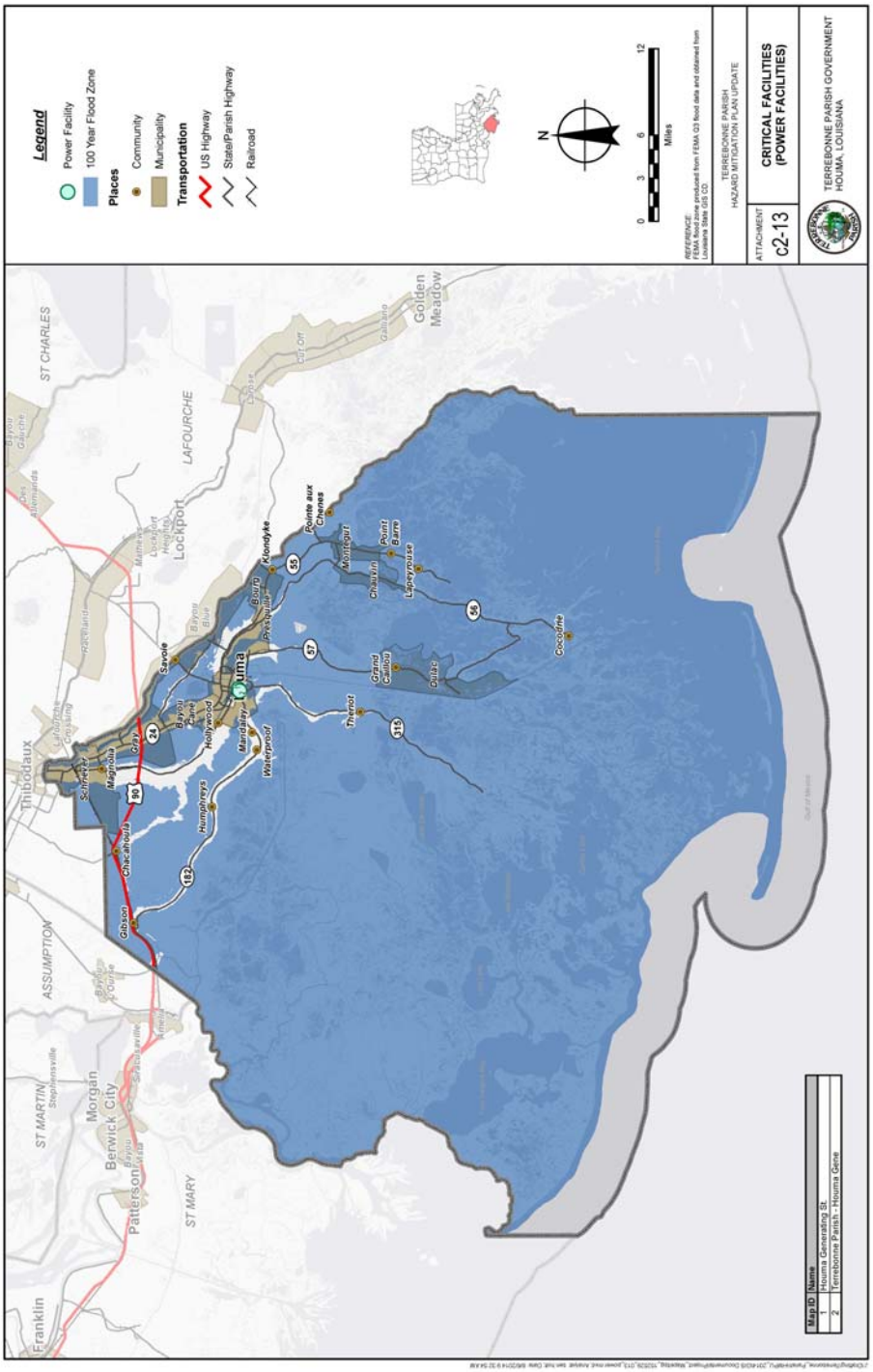
Attachment c2-11
Critical Facilities—Police Stations



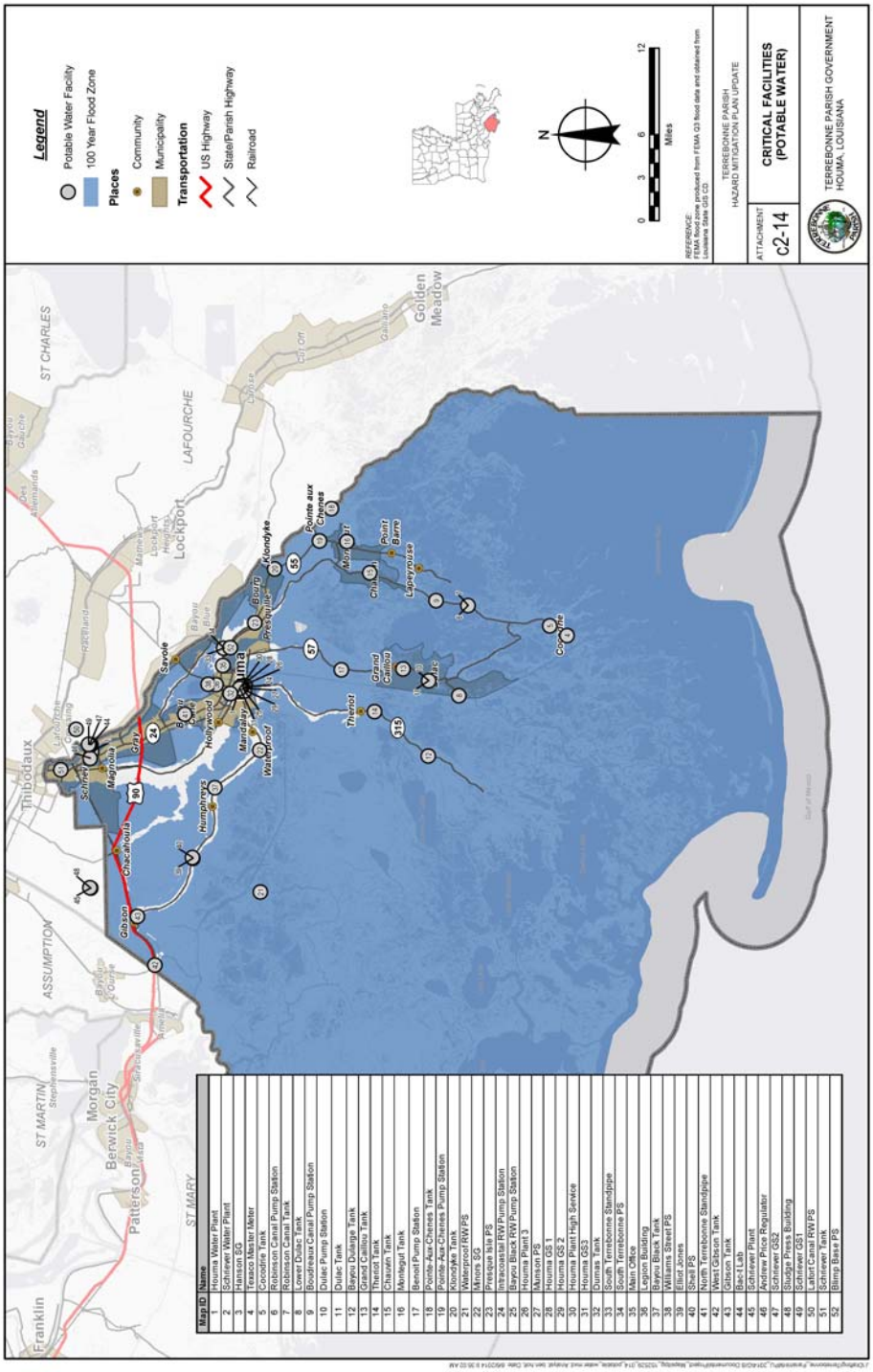
Attachment c2-12
Critical Facilities—Healthcare Providers



Attachment c2-13
Critical Facilities—Power Facilities

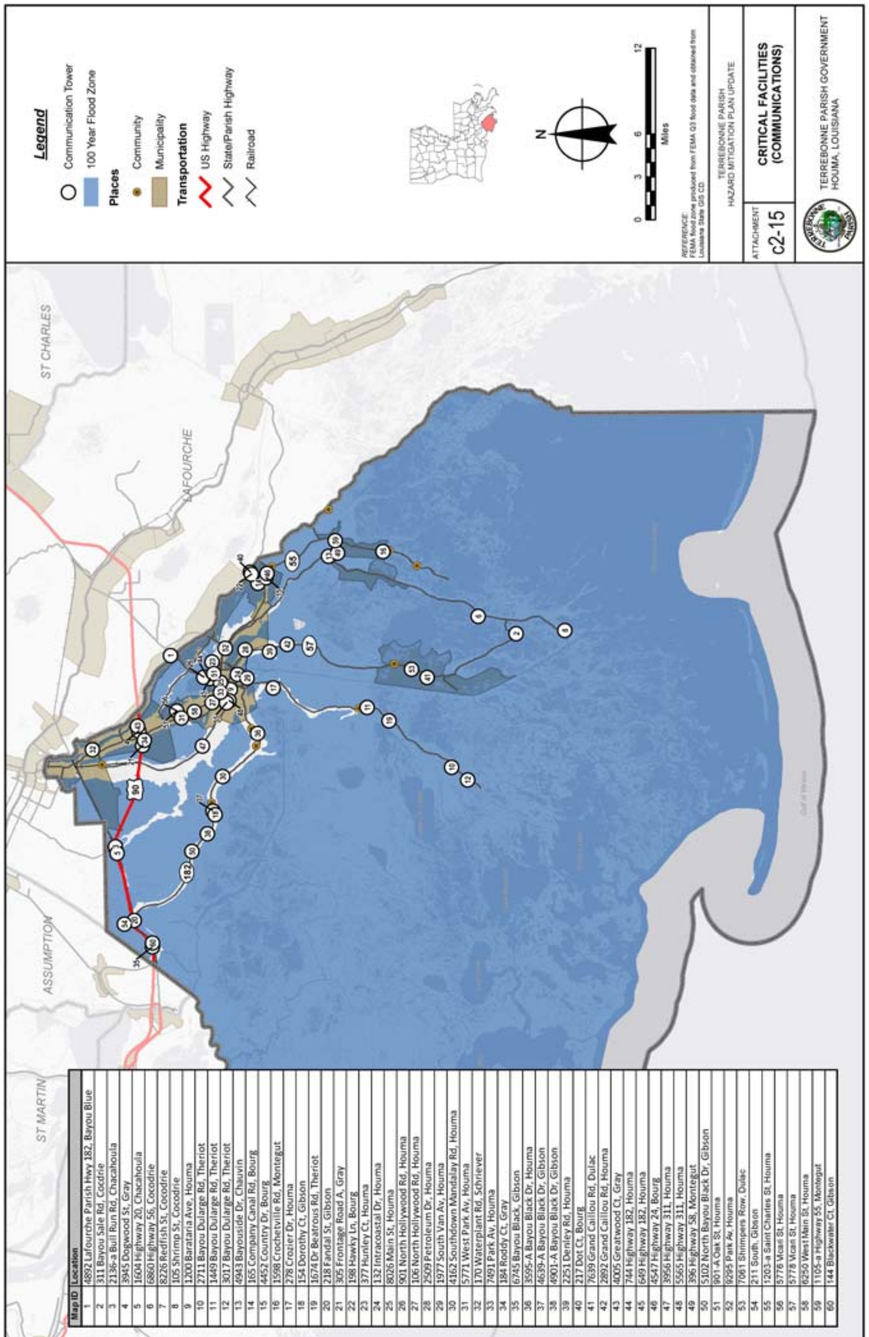


Attachment c2-14
Critical Facilities—Potable Water



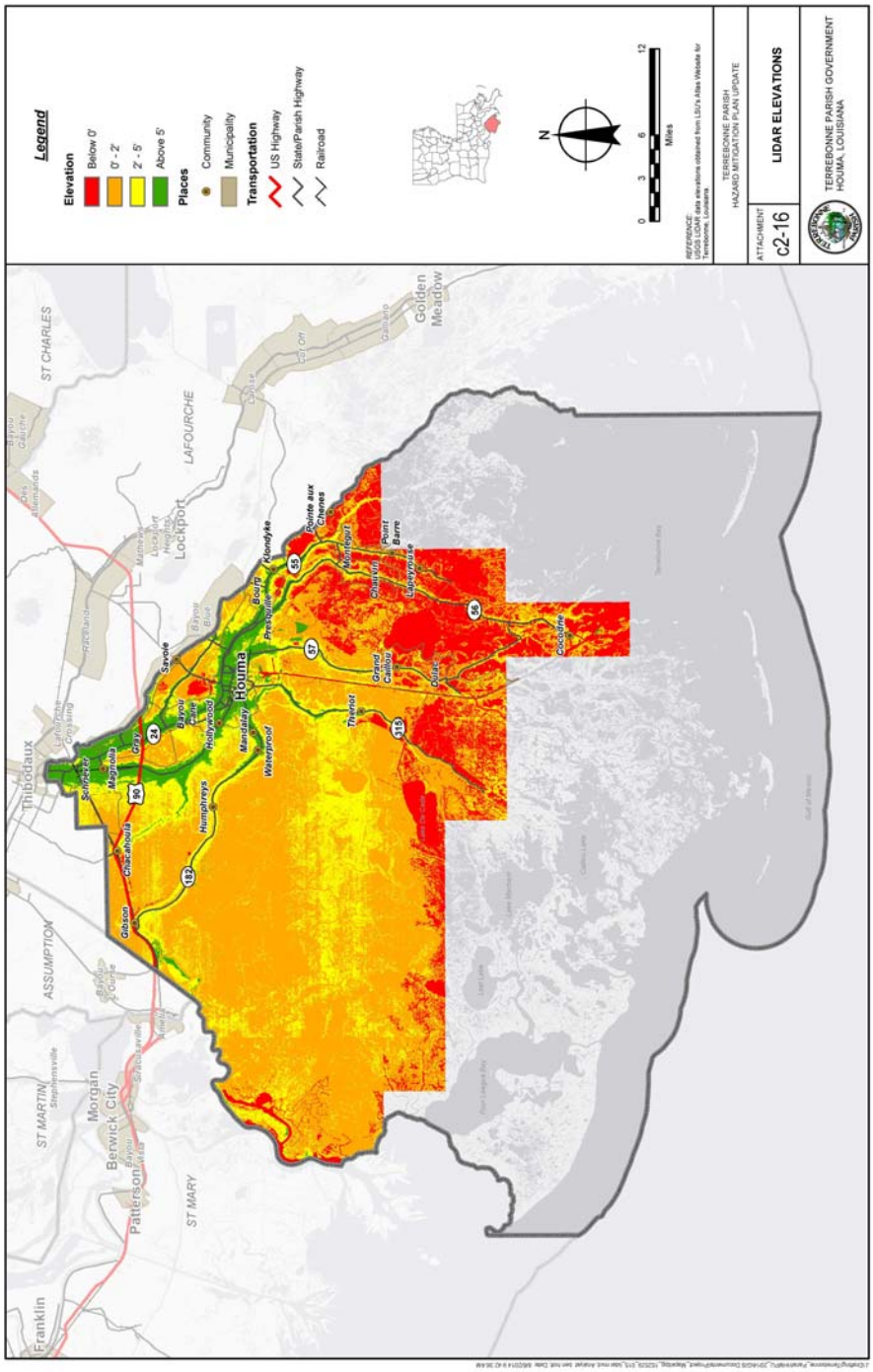
Map ID	Name
1	Houma Water Plant
2	Schriever Water Plant
3	Hanson SG
4	Texaco Master Meter
5	Cocodrie Tank
6	Robinson Canal Pump Station
7	Robinson Canal Tank
8	Lower Dulac Tank
9	Boudreaux Canal Pump Station
10	Dulac Pump Station
11	Dulac Tank
12	Bayou Dularge Tank
13	Grand Caillou Tank
14	Theriot Tank
15	Chauvin Tank
16	Montegut Tank
17	Benoit Pump Station
18	Pointe-Aux-Chenes Tank
19	Pointe-Aux-Chenes Pump Station
20	Klondyke Tank
21	Waterproof RW PS
22	Minors SG
23	Presque Isle PS
24	Intracoastal RW Pump Station
25	Bayou Black RW Pump Station
26	Houma Plant 3
27	Manson PS
28	Houma GS 1
29	Houma GS 2
30	Houma Plant High Service
31	Houma GS3
32	Dumas Tank
33	South Terrebonne Standpipe
34	South Terrebonne PS
35	Main Office
36	Legion Building
37	Bayou Black Tank
38	Williams Street PS
39	Elliot Jones
40	Shell PS
41	North Terrebonne Standpipe
42	West Gibson Tank
43	Gibson Tank
44	Shell Lab
45	Schriever Plant
46	Andrew Price Regulator
47	Schriever GS2
48	Sludge Press Building
49	Schriever GS1
50	Lafort Canal RW PS
51	Schriever Tank
52	Bump Base PS

Attachment c2-15
Critical Facilities—Communications

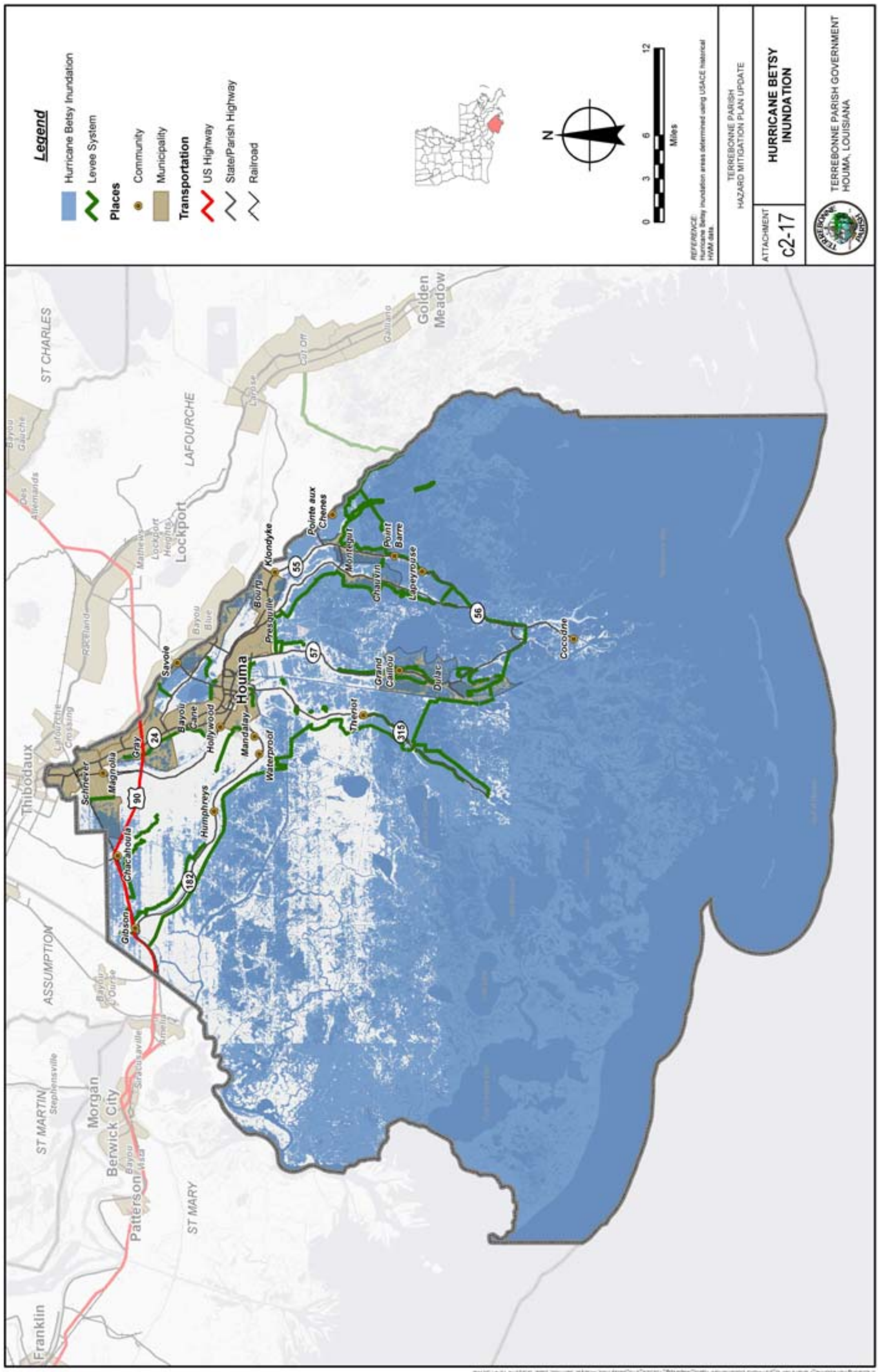


Map ID	Location
1	4892 Lafourche Parish Hwy 182, Bayou Blue
2	311 Bayou Sale Rd, Cocdrie
3	2136-a Bull Run Rd, Chacahoula
4	3945 Dogwood St, Gray
5	1604 Highway 20, Chacahoula
6	6860 Highway 56, Cocodrie
7	8226 Redfish St, Cocodrie
8	105 Shrimp St, Cocodrie
9	1200 Barataria Ave, Houma
10	2711 Bayou Dularge Rd, Theriot
11	1449 Bayou Dularge Rd, Theriot
12	3017 Bayou Dularge Rd, Theriot
13	4943 Bayouside Dr, Chauvin
14	165 Company Canal Rd, Bourg
15	4452 Country Dr, Bourg
16	1598 Crochetville Rd, Montegut
17	278 Crozier Dr, Houma
18	154 Dorothy Ct, Gibson
19	1674 Dr Beatrous Rd, Theriot
20	218 Fandal St, Gibson
21	305 Frontage Road A, Gray
22	198 Hawky Ln, Bourg
23	377 Hunley Ct, Houma
24	132 Intracoastal Dr, Houma
25	8026 Main St, Houma
26	901 North Hollywood Rd, Houma
27	106 North Hollywood Rd, Houma
28	2509 Petroleum Dr, Houma
29	1977 South Van Av, Houma
30	4162 Southdown Mandalay Rd, Houma
31	5771 West Park Av, Houma
32	170 Waterplant Rd, Schriever
33	7491 Park Av, Houma
34	184 Roddy Ct, Gray
35	6745 Bayou Black, Gibson
36	3595-A Bayou Black Dr, Houma
37	4639-A Bayou Black Dr, Gibson
38	4901-A Bayou Black Dr, Gibson
39	2251 Denley Rd, Houma
40	217 Dot Ct, Bourg
41	7639 Grand Caillou Rd, Dulac
42	2892 Grand Caillou Rd, Houma
43	4005 Greatwood Ct, Gray
44	744 Highway 182, Houma
45	649 Highway 182, Houma
46	4547 Highway 24, Bourg
47	3956 Highway 311, Houma
48	5565 Highway 311, Houma
49	396 Highway 58, Montegut
50	5102 North Bayou Black Dr, Gibson
51	901-A Oak St, Houma
52	9295 Park Av, Houma
53	7061 Shrimpers Row, Dulac
54	211 South, Gibson
55	1203-a Saint Charles St, Houma
56	5776 Vicari St, Houma
57	5778 Vicari St, Houma
58	6250 West Main St, Houma
59	1105-a Highway 55, Montegut
60	144 Blackwater Ct, Gibson

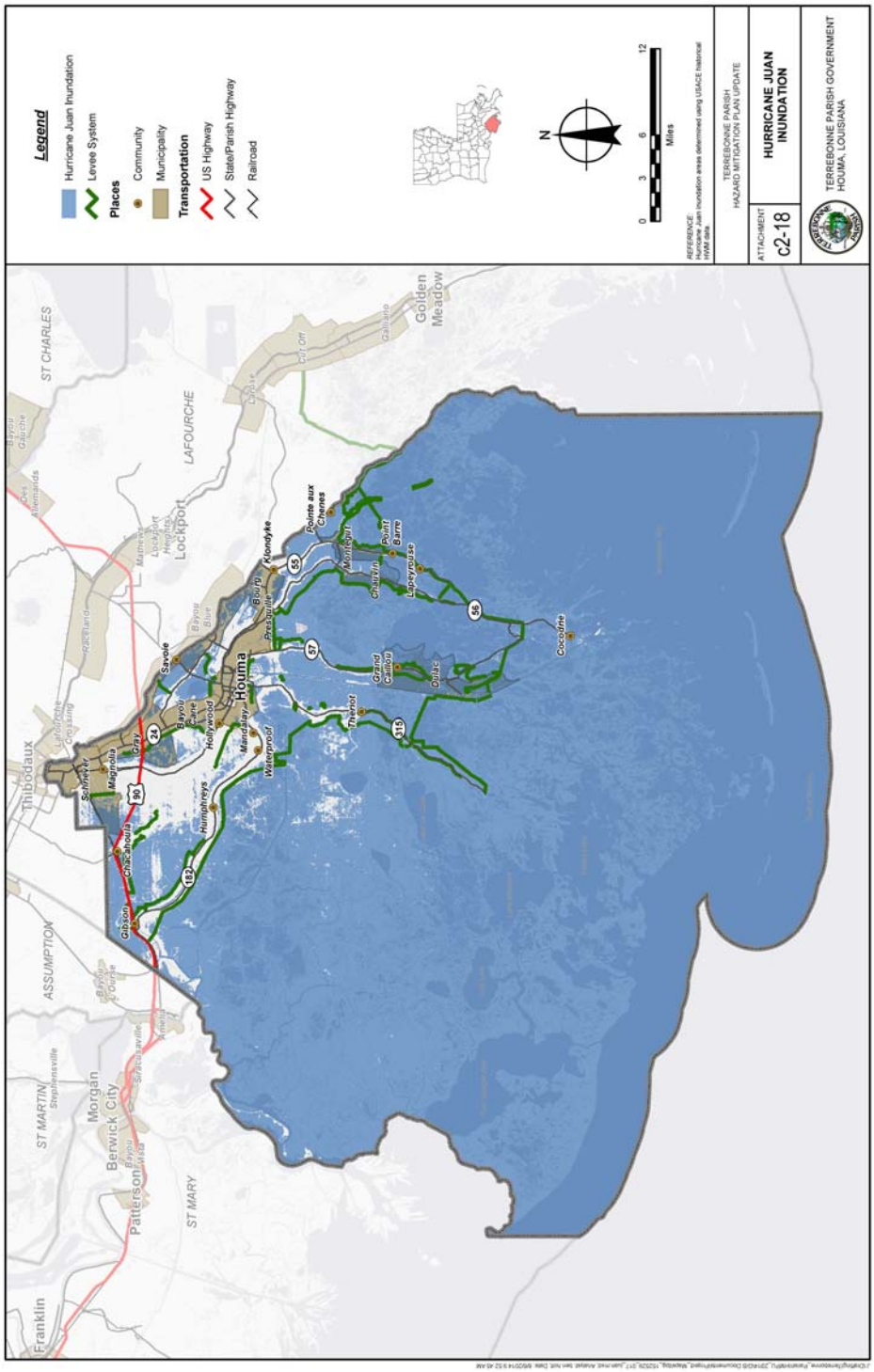
Attachment c2-16
Critical Facilities—LIDAR Elevations



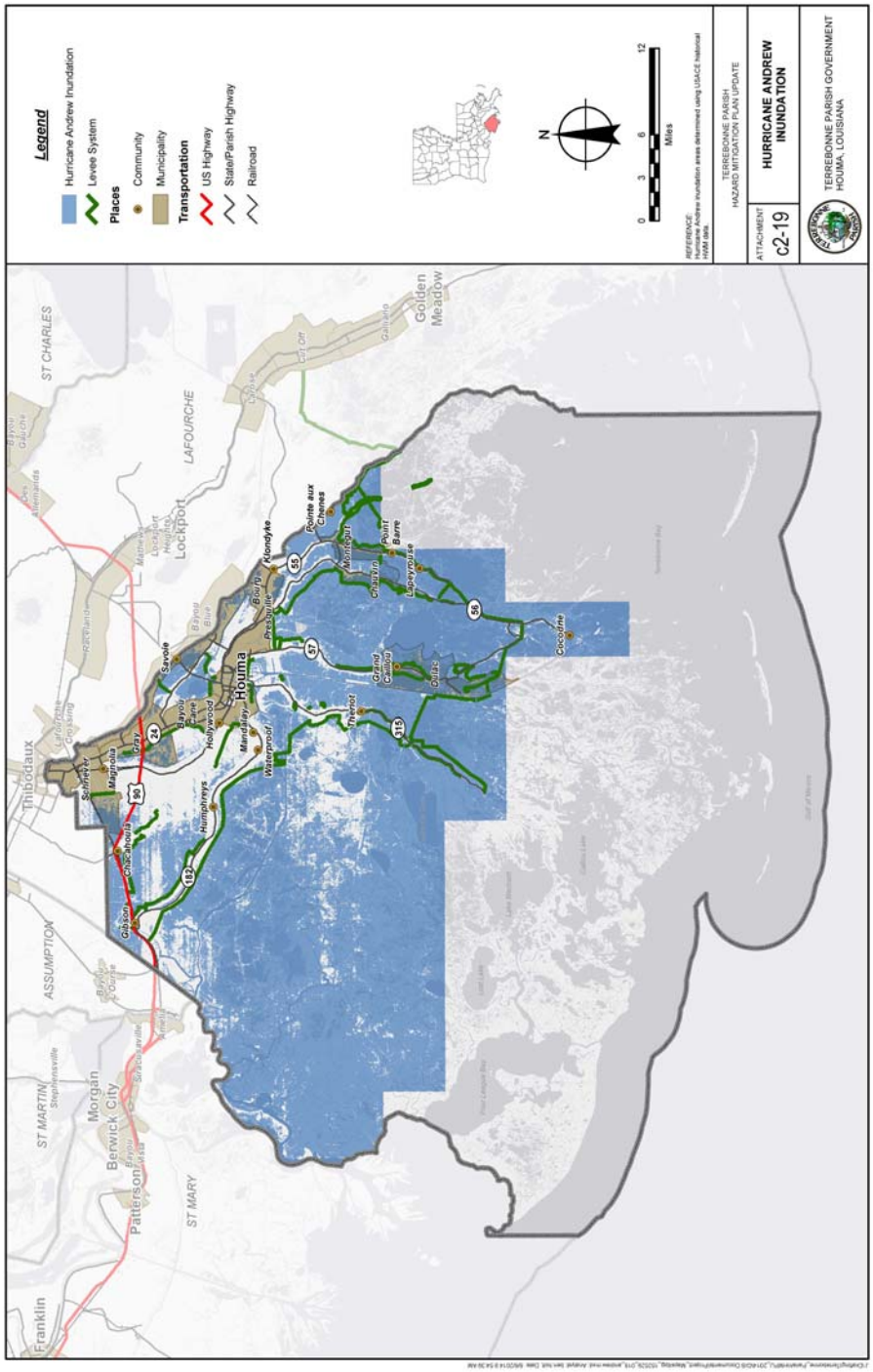
Attachment c2-17
Hurricane Betsy Inundation Map



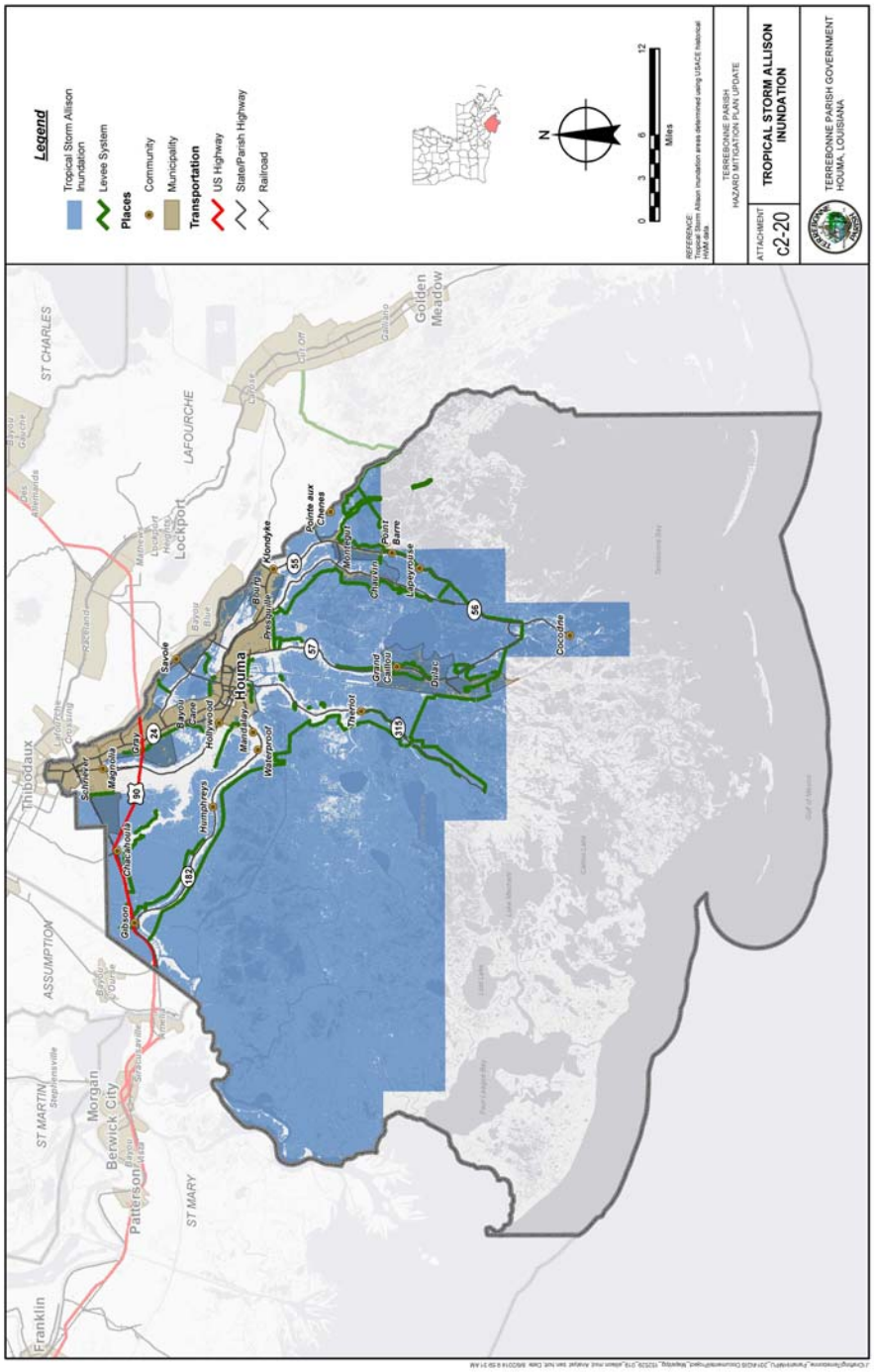
Attachment c2-18
Hurricane Juan Inundation Map



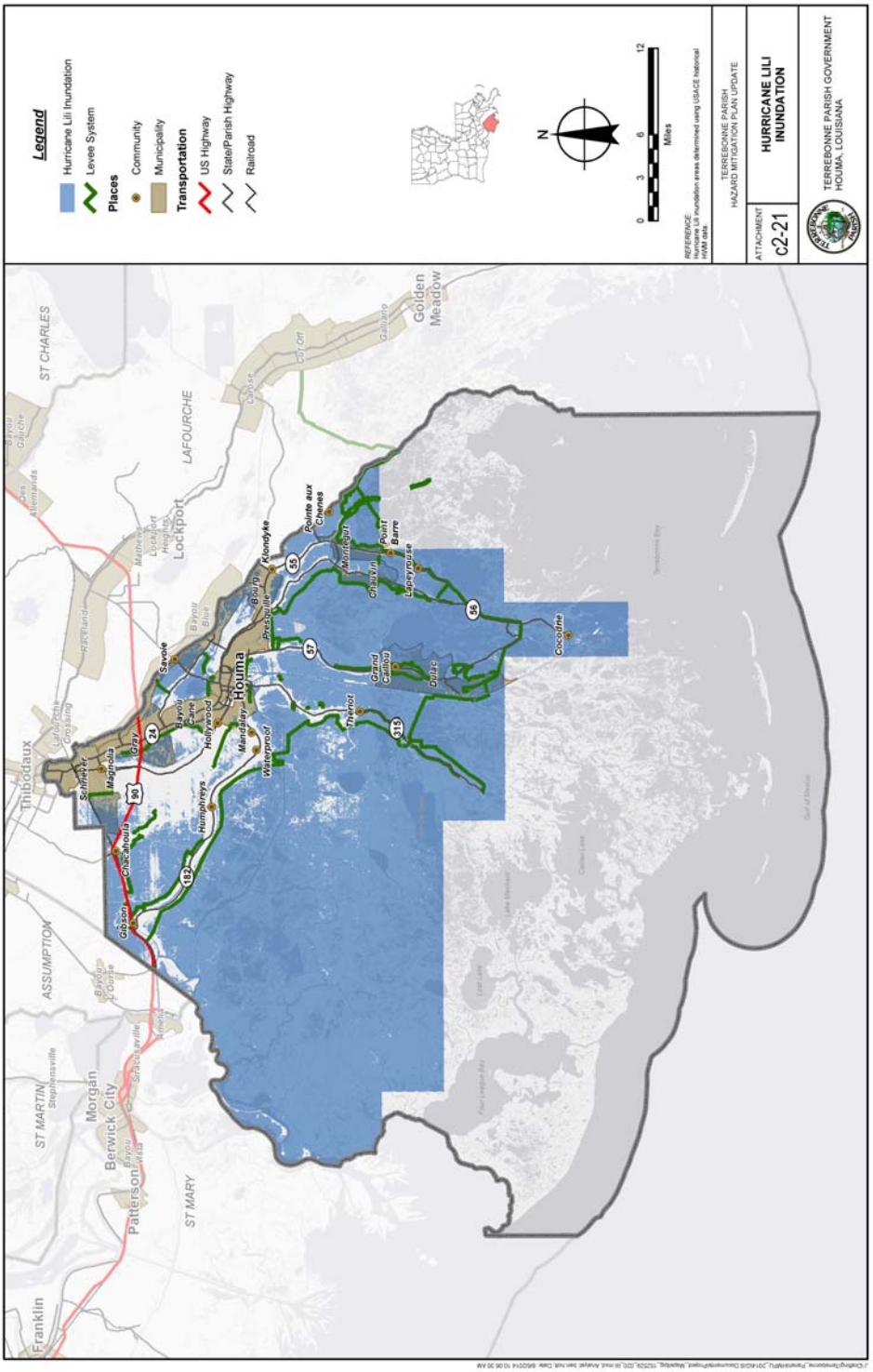
Attachment c2-19
Hurricane Andrew Inundation Map



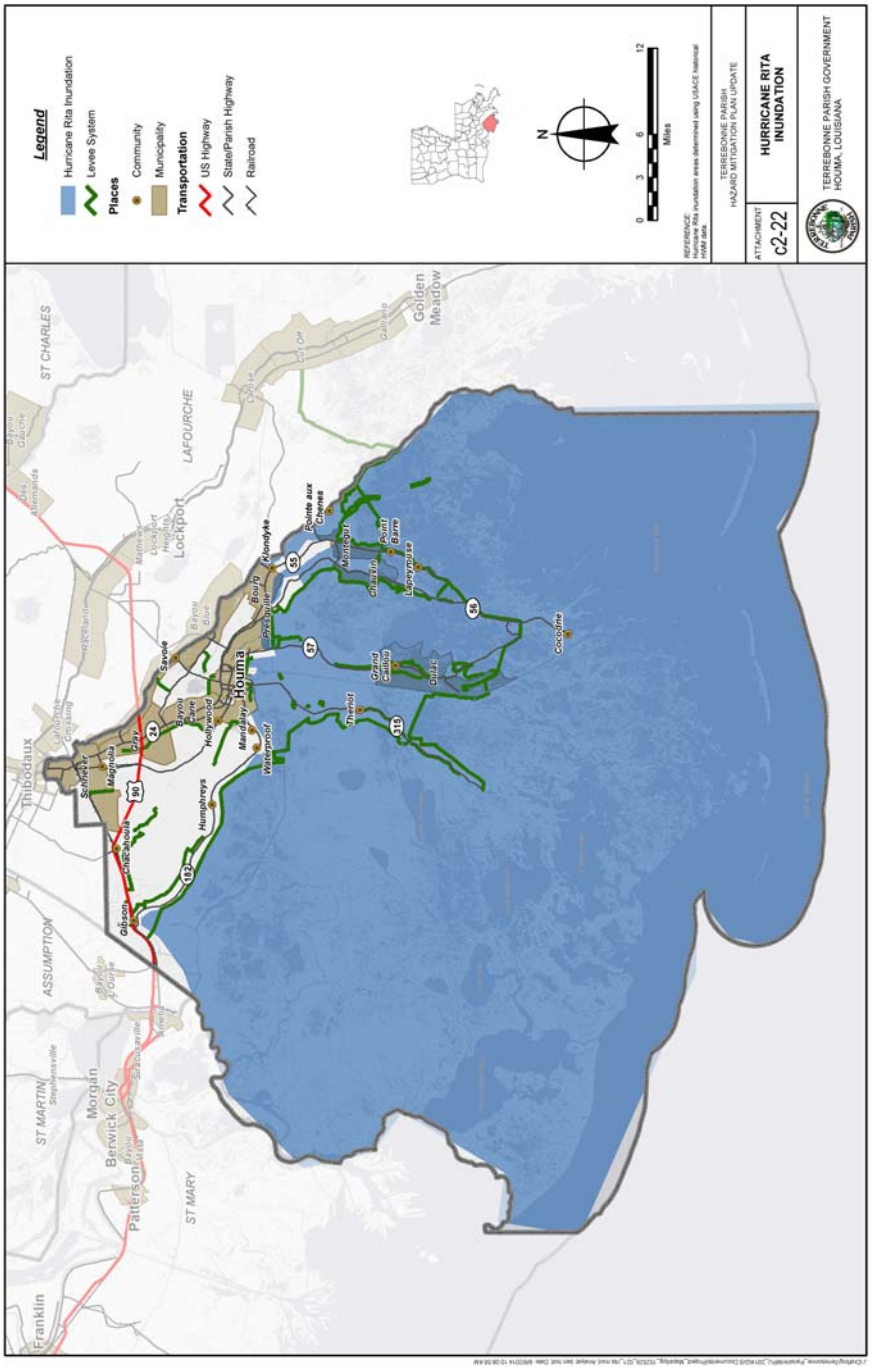
Attachment c2-20
Tropical Storm Allison Inundation Map



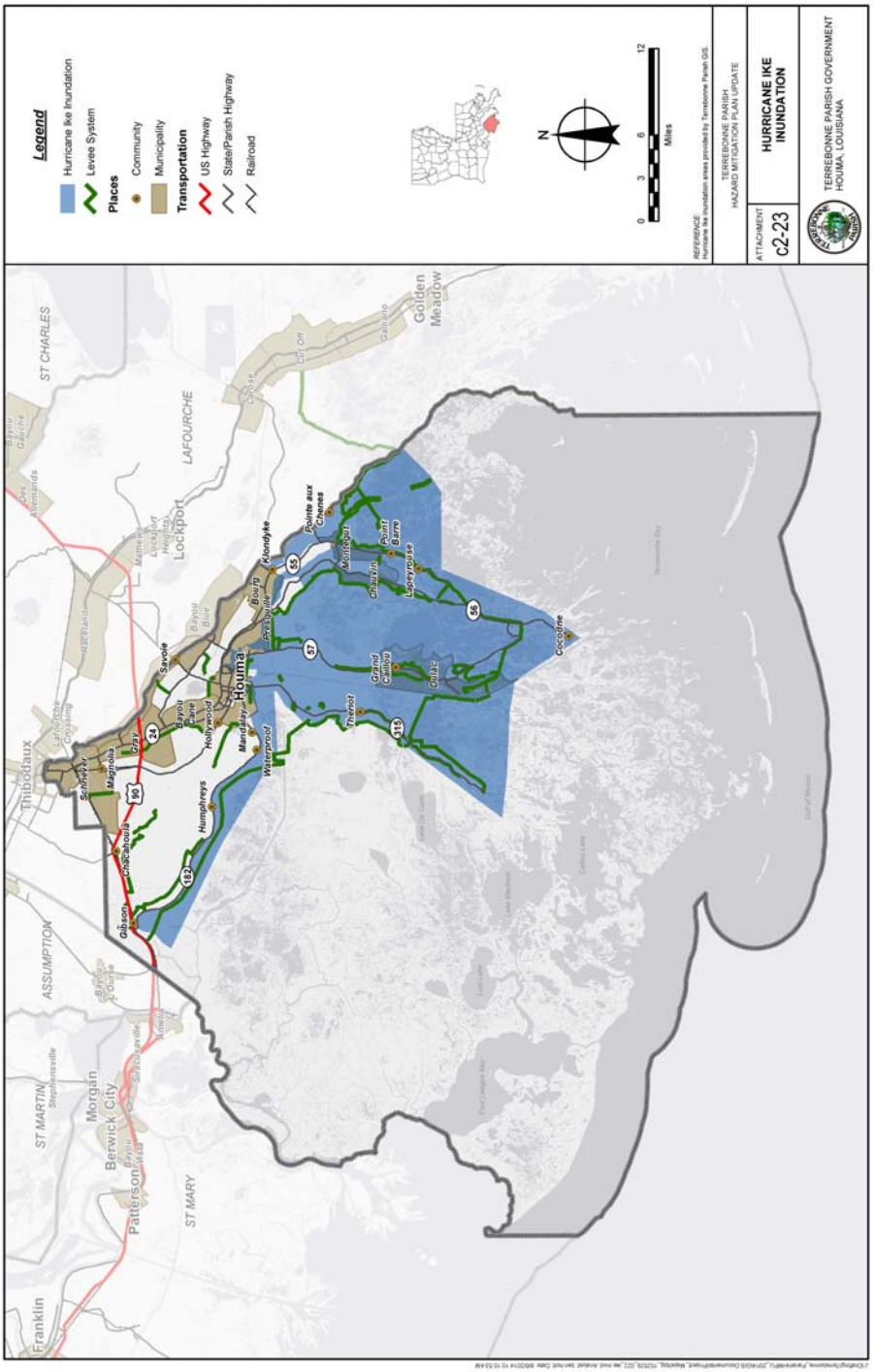
Attachment c2-21
Hurricane Lili Inundation Map



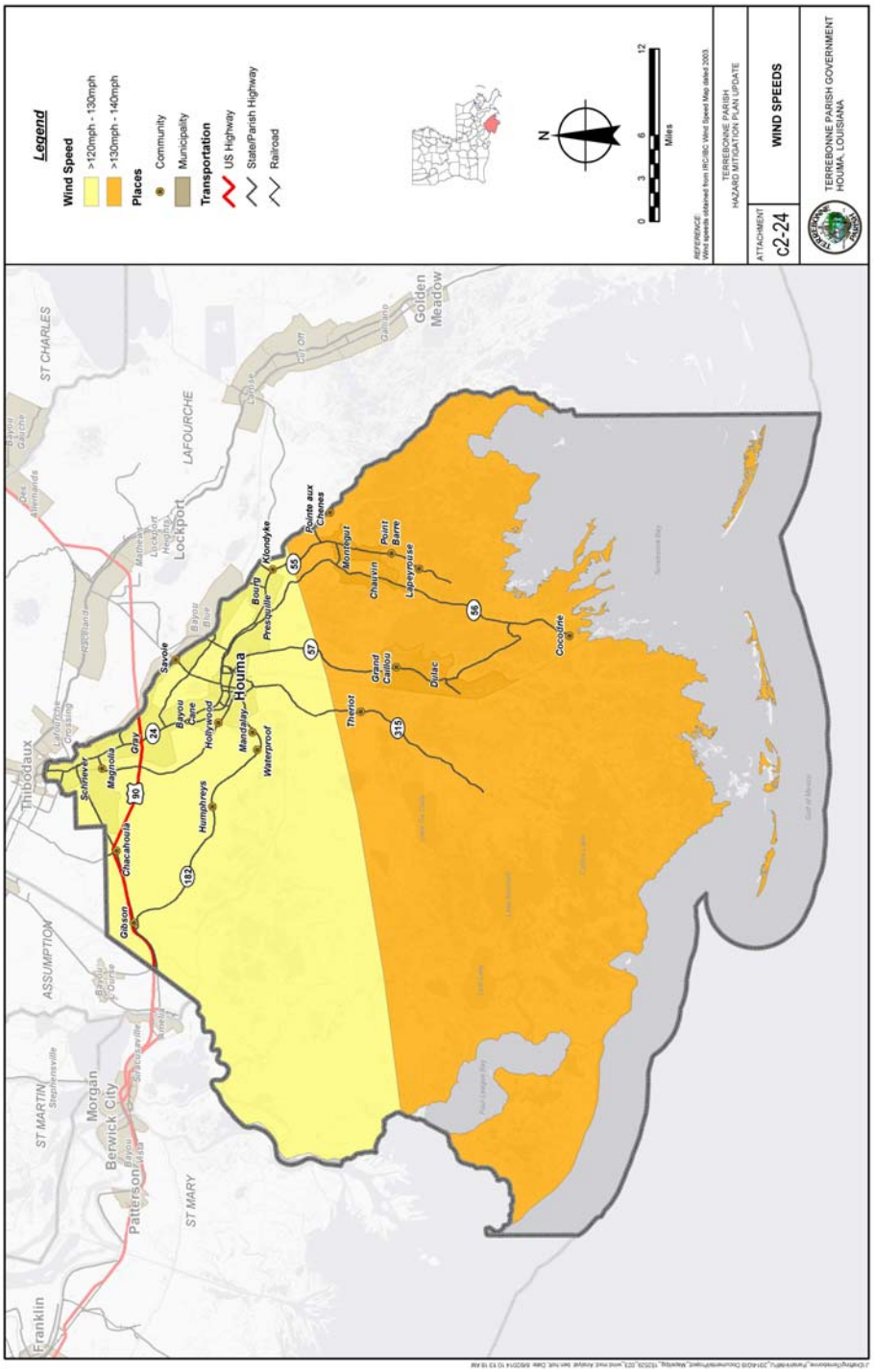
Attachment c2-22
Hurricane Rita Inundation Map



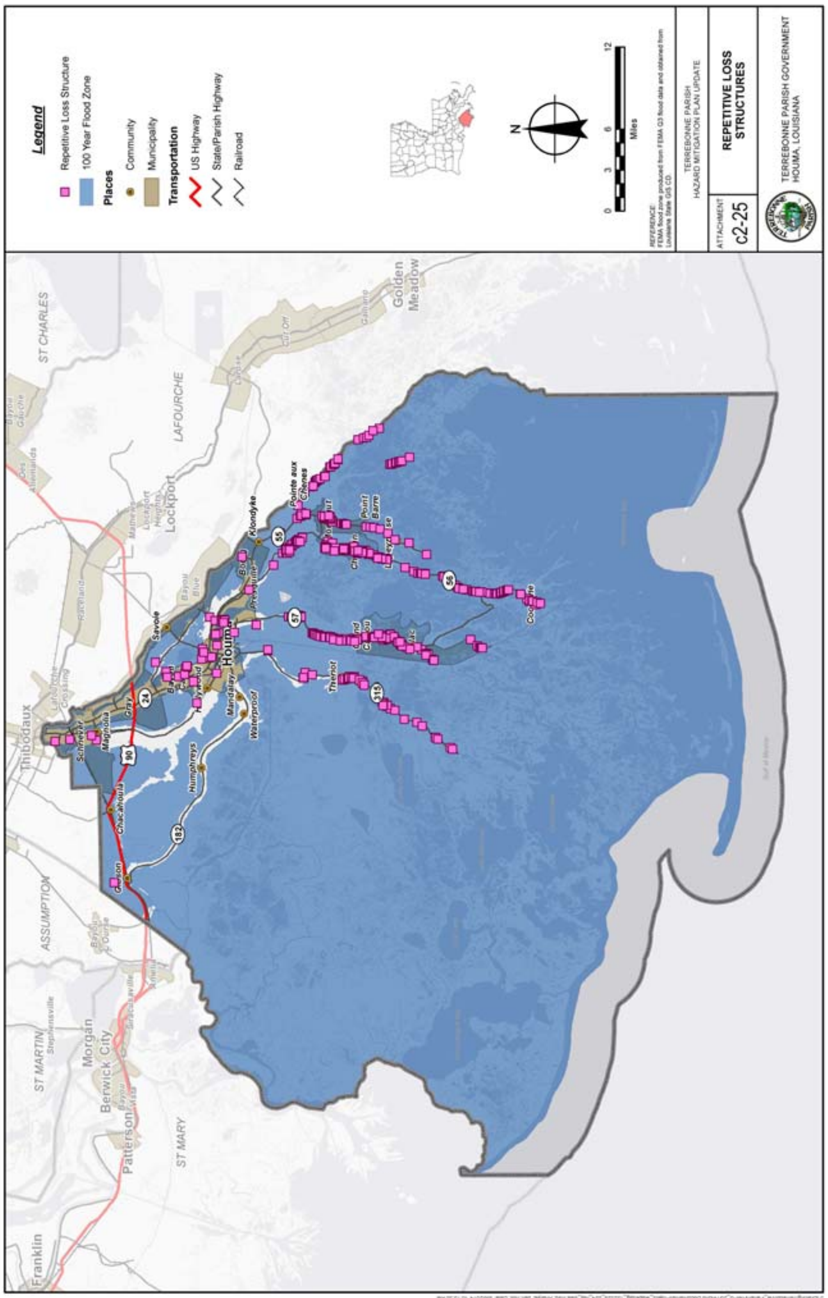
Attachment c2-23
Hurricane Ike Inundation Map



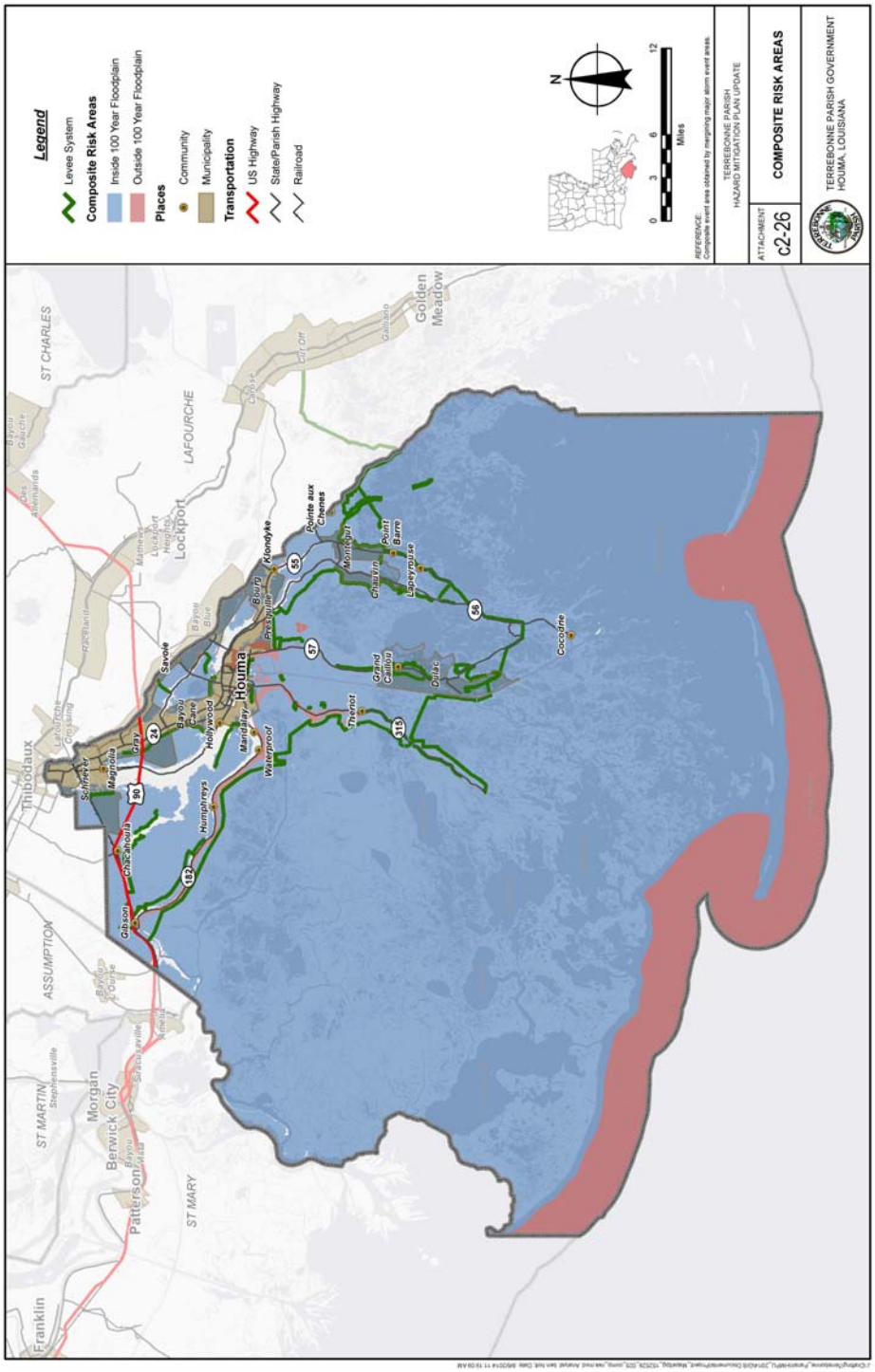
Attachment c2-24
Wind Speeds



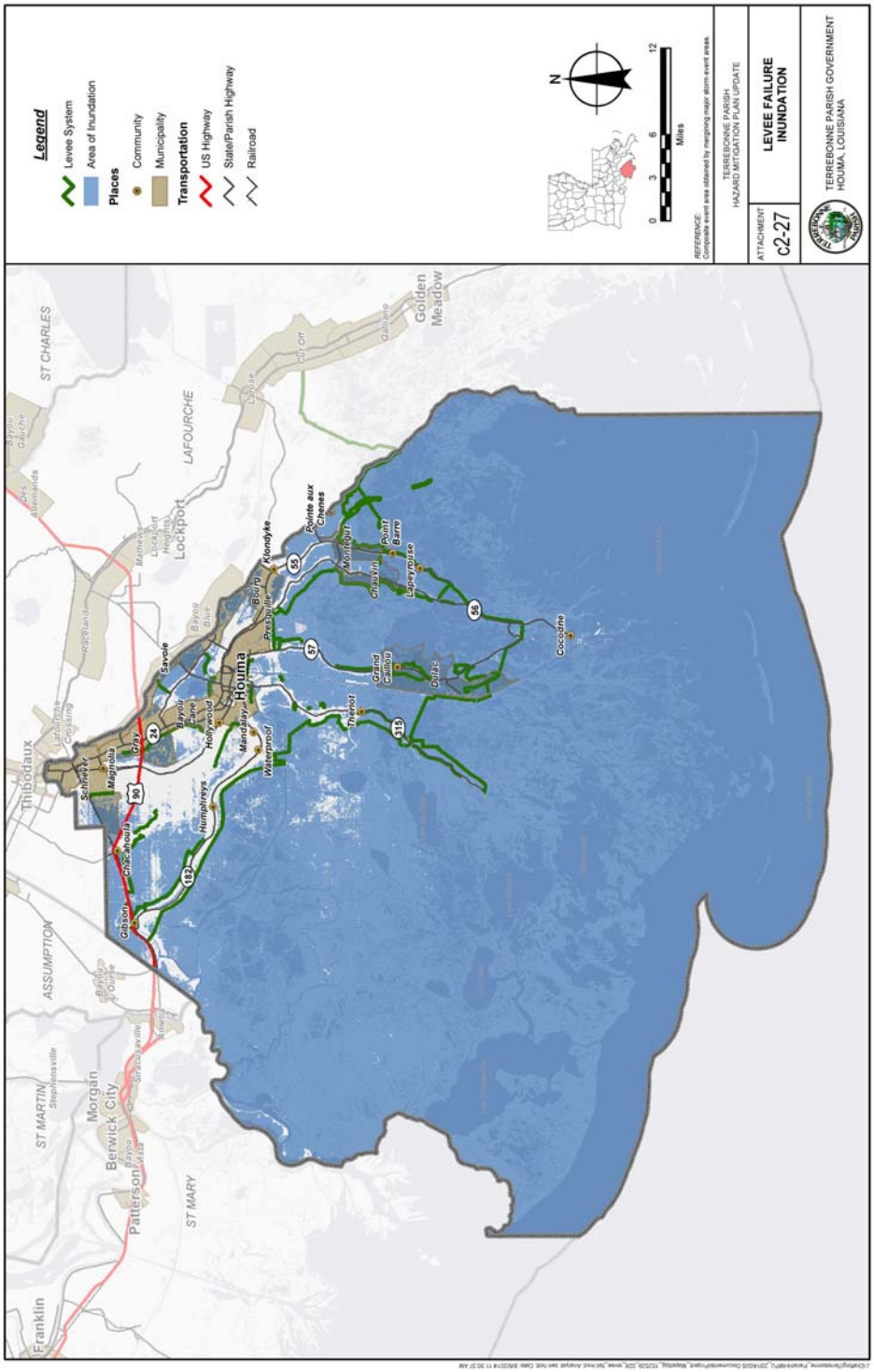
Attachment c2-25
Repetitive Loss Structures



Attachment c2-26
Composite Risk Areas



Attachment c2-27
Levee Failure Inundation Map

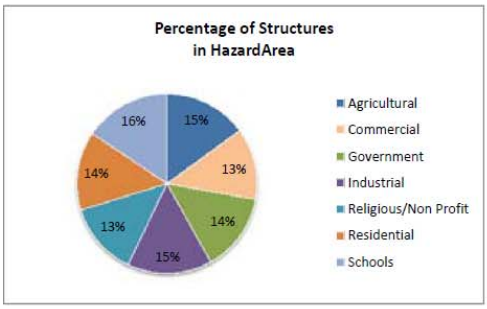


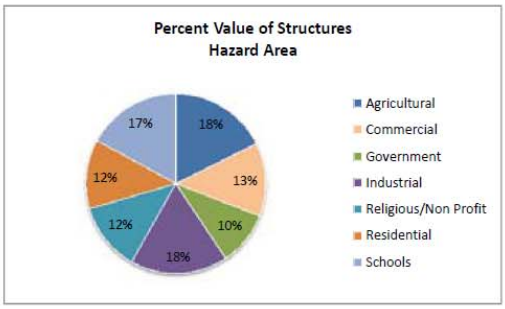
Attachment c2-28
Worksheet #3A—HAZUS

Terrebonne Parishwide HAZUS

	Number of Structures			Value of Structures		
Type of Structure (Occupancy Class)	# in Community	# in Hazard Area	% in Hazard Area	$ in Community	$ in Hazard Area	% in Hazard Area
Agricultural	104	68	65%	$ 23,133,000	$ 19,067,000	82%
Commercial	2,200	1,241	56%	$ 1,274,572,000	$ 789,141,000	62%
Government	60	37	62%	$ 36,499,000	$ 16,690,000	46%
Industrial	669	445	67%	$ 424,320,000	$ 347,546,000	82%
Religious/Non Profit	188	108	57%	$ 127,108,000	$ 73,180,000	58%
Residential	39,273	24,429	62%	$ 5,323,060,000	$ 3,108,102,000	58%
Schools	66	45	68%	$ 66,885,000	$ 53,289,000	80%
Total	**42,560**	**26,373**	**62%**	**$ 7,275,577,000**	**$ 4,407,015,000**	**61%**

	# in Community	# in Hazard Area	%in Hazard Area
Population	104,503	64,961	62%

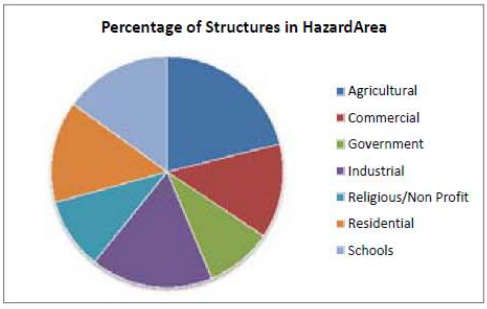


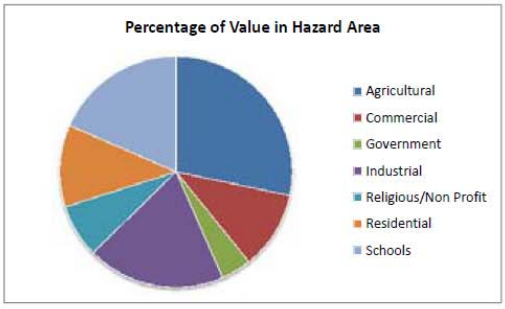


Houma HAZUS

	Number of Structures			Value of Structures		
Type of Structure (Occupancy Class)	# in Community	# in Hazard Area	% in Hazard Area	$ in Community	$ in Hazard Area	% in Hazard Area
Agricultural	29	17	59%	$ 13,423,000	$ 12,614,000	94%
Commercial	951	349	37%	$ 469,759,000	$ 169,909,000	36%
Government	27	7	26%	$ 21,587,000	$ 3,042,000	14%
Industrial	235	111	47%	$ 119,733,000	$ 76,324,000	64%
Religious/Non Profit	65	18	28%	$ 44,209,000	$ 10,926,000	25%
Residential	12,642	4,996	40%	$ 1,883,170,000	$ 717,283,000	38%
Schools	24	10	42%	$ 17,852,000	$ 10,930,000	61%
Total	**13,973**	**5,508**	**39%**	**$ 2,569,733,000**	**$ 1,001,028,000**	**39%**

	# in Community	# in Hazard Area	%in Hazard Area
Population	32,970	14,197	43%

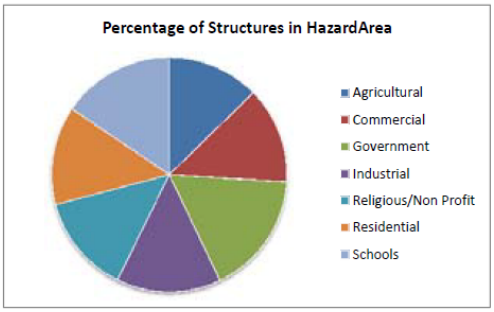


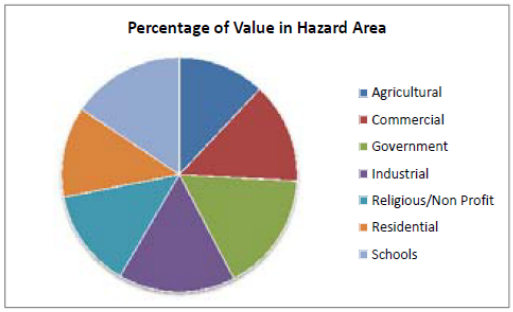


Unincorporated HAZUS

	Number of Structures			Value of Structures		
Type of Structure (Occupancy Class)	**# in Community**	**# in Hazard Area**	**% in Hazard Area**	**$ in Community**	**$ in Hazard Area**	**% in Hazard Area**
Agricultural	75	51	68%	$ 9,710,000	$ 6,453,000	66%
Commercial	1,249	892	71%	$ 804,813,000	$ 619,232,000	77%
Government	33	30	91%	$ 14,912,000	$ 13,648,000	92%
Industrial	434	334	77%	$ 304,587,000	$ 271,222,000	89%
Religious/Non Profit	123	90	73%	$ 82,899,000	$ 62,254,000	75%
Residential	26,631	19,433	73%	$ 3,439,890,000	$ 2,390,819,000	70%
Schools	42	35	83%	$ 49,033,000	$ 42,359,000	86%
Total	**28,587**	**20,865**	**73%**	**$ 4,705,844,000**	**$ 3,405,987,000**	**72%**

	# in Community	# in Hazard Area	%in Hazard Area
Population	71,533	50,764	71%





Attachment c2-29
List of Critical Facilities

Type of Asset		Name/Description of Structure
	Hospitals	Chabert Medical Center
		Gulf States LTAC of Houma
		Physicians Surgery Specialty Hospital
		Terrebonne General Medical Center
	Assisted Living	Bonne Terre Village
		Chateau Terrebonne Health Care
		Heritage Manor of Houma
		Homestead Assisted Living
		Maison De'Ville Nursing Home
		Suites at Sugar Mill Point
		TARC
		Terrebonne House
		The Oaks of Houma
	Home Health	Anoited Care Services LLC
		Bayou Home Care
		Hospice of South Louisiana
		Journey Hospice
		Lafourche ARC - Main Office
		Lafourche ARC
		Synergy Home Health Care River Region
		Terrebonne Home Care, Inc
		The Medical Team
		Total Pharmacy Services
	Medical	Acadian Ambulance Service
		Cardiovascular Institute of the South
		Terrebonne Mental Health Center
		Terrebonne Parish Health Unit

Type of Asset		Name/Description of Structure
Essential Facilities, cont.	Emergency Operation Centers	911-Terrebonne Communications District
		Office of Emergency Preparedness (OEP)
	Police Stations	Houma Police Department
		State Police
		State Police Traffic Violation
		Terrebonne Parish Sheriff's Office
	Fire Stations	Bayou Black VFD--Station 2
		Bayou Black Volunteer Fire Department #9
		Bayou Blue Fire Department
		Bayou Blue VFD--Station 2
		Bayou Blue VFD--Station 3
		Bayou Cane Fire Protection District
		Bayou Cane VFD--Hollywood Road Station
		Bayou Cane VFD--Savanne Road Station
		Bayou Cane VFD--W. Park Avenue Station
		Bayou Dularge VFD--Station 1
		Bayou Dularge VFD--Station 2
		Bayou Dularge VFD--Station 4
		Bourg VFD
		Coteau Volunteer Fire Department
		Donner-Chacahoula--Central Station
		Dularge Volunteer Fire Department #10
		Grand Caillou Fire Department Fire # 4A
		Grand Caillou Fire Department Fire # 4A
		Grand Caillou VFD--Bobtown Station

Type of Asset		Name/Description of Structure
		Grand Caillou VFD--Bobtown Sub Station
		Grand Caillou VFD--Dulac Fire Station
		Grand Caillou VFD--Dulac Sub Station
		Houma FD--Airbase Station 4
		Houma FD--East Houma Station 3
		Houma FD - East Park Station
		Houma FD--North Houma Station 2
		Houma FD--South Houma Station 1
		Houma Fire Department
		Little Caillou VFD--Lower Station 3
	Fire Stations, cont.	Little Caillou VFD--Upper Station 1
		Little Caillou/ Chauvin Fire #7
		Little Caillou/ Chauvin Fire #7
		Montegut District # 6 - Station 1
		Montegut--Station 2
		Montegut--Station 3
		Montegut--Station 4
		Schriever VFD--Central Schriever Station
		Schriever VFD--Elsworth Station
		Schriever VFD--Gray Station
		Schriever Volunteer Fire Dept.
		Village East VFD--Central Station
		West Terrebonne F&R (Gibson East)
		West Terrebonne F&R--(TPCG) Don/Ch
		West Terrebonne Fire & Rescue (TPCG)
Essential Facilities, cont.		Acadian Elementary
		Andrew Price

Type of Asset		Name/Description of Structure
	Schools	Bayou Black Elementary
		Bayou Cane Adult Ed Center
		Bourg Elementary
		Broadmoor Elementary
		Caldwell Middle
		Coteau-Bayou Blue Elementary
		Dularge Elementary
		Dularge Middle
		East Houma Elementary
		East Street
		Ellender Memorial High
		Elysian Fields Middle
		Evergreen Jr. High
		Gibson elementary
		Grand Caillou Elementary
		Grand Caillou Middle
		H.L. Bourgeois High
		Honduras Elementary
		Houma Jr. High
		Juvenile Justice Center
		Lacache Middle
		Legion Park Middle
		Lisa Park Elementary
		Maria Immacolata Elementary
		Montegut Elementary
		Montegut Middle

Type of Asset		Name/Description of Structure
Essential Facilities, cont.	Schools, cont.	Mulberry Elementary
		Oaklawn Jr. High
		Oakshire Elementary
		Omega Institure of Cosmetology
		Point-aux-Chenes Elementary
		School for Exceptional Children
		Schriever Elementary
		South Louisiana Beauty College
		South Terrebonne High
		Southdown Elementary
		St. Bernadette
		St. Francis De Sales
		St. Gregory Barbarigo
		St. Matthew's
		TARC
		Terrebonne High
		Terrebonne Career and Technical High
		Terrebonne Parish School Board
		Upper Little Caillou Elementary
Essential Facilities, cont.	Schools, cont.	Vandebilt Catholic High
		Village East Elementary
		West Park Elementary

Type of Asset		Name/Description of Structure
Other	Parish Owned Buildings	Houma Terrebonne Housing Authority (Bayou Towers)
		Public Works Yard
		Pump Stations (Various Locations)
	Child Care	Louis Infant Crisis Center
		MacDonnell Methodist Children Services
	Civic Center	Houma-Terrebonne Civic Center
Lifeline Utility Systems	Sewage	Eureka Heights S/D - Gray
		Fairlane Sewerage Corp - Gray
		Halliburton Energy Services
		North Sewage Treatment Plant
		South Sewage Treatment Plant
		Terrebonne Parish Con Gov-Cyp
		Terrebonne Parish Pollution Control
		TPCG Pollution Control South Treatment Plant
	Power Plants	Houma Generating St.
		Terrebonne Parish - Houma Gene
	Water	Andrew Price Regulator
		Bac-t Lab
		Bayou Black RW Pump Station
		Bayou Black Tank
		Bayou Dularge Tank
		Benoit Pump Station
		Blimp Base PS
		Boudreaux Canal Pump Station
		Chauvin Tank
		Cocodrie Tank

Type of Asset		Name/Description of Structure
		Dulac Pump Station
		Dulac Tank
		Dumas Tank
		Elliot Jones
		Gibson Tank
		Grand Caillou Tank
		Hanson SG
		Houma GS 1
		Houma GS 2
Lifeline Utility Systems, cont.	Water, cont.	Houma GS3
		Houma Plant 3
		Houma Plant High Service
		Houma Water Plant
		Intracoastal RW Pump Station
		Klondyke Tank
		Lafort Canal RW PS
		Legion Building
		Lower Dulac Tank
		Main Office
		Minors SG
		Montegut Tank
		Munson PS
		North Terrebonne Standpipe
		Pointe-Aux-Chenes Pump Station
		Pointe-Aux-Chenes Tank
		Presque Isle PS

Type of Asset		Name/Description of Structure
		Robinson Canal Pump Station
		Robinson Canal Tank
		Schriever GS1
		Schriever GS2
		Schriever Tank
		Schriever Water Plant
		Shell PS
		South Terrebonne PS
		South Terrebonne Standpipe
		Texaco Master Meter
		Theriot Tank
		West Gibson Tank
		Williams Street PS

Attachment c2-30
Identification of Critical Facilities in the Hazard Areas

Type of Asset		Name/Description of Structure	100-Year Flood Plain	Composite Risk	Levee Failure
	Hospitals	Chabert Medical Center	X	X	
		Gulf States LTAC of Houma			
		Physicians Surgery Specialty Hospital			
		Terrebonne General Medical Center			
	Assisted Living	Bonne Terre Village			
		Chateau Terrebonne Health Care			
		Heritage Manor of Houma			
		Homestead Assisted Living			
		Maison De'Ville Nursing Home			
		Suites at Sugar Mill Point			
		TARC			
		Terrebonne House			
		The Oaks of Houma	X	X	
	Home Health	Anoited Care Services LLC			
		Bayou Home Care			
		Hospice of South Louisiana			
		Journey Hospice			
		Lafourche ARC - Main Office			
		Lafourche ARC			
		Synergy Home Health Care River Region			
		Terrebonne Home Care, Inc	X	X	
		The Medical Team			
		Total Pharmacy Services			
	Medical	Acadian Ambulance Service			
		Cardiovascular Institute of the South		X	
		Terrebonne Mental Health Center			
		Terrebonne Parish Health Unit	X		
	Emergency Operation Centers	911-Terrebonne Communications District			
		Office of Emergency Preparedness (OEP)			
	Police Stations	Houma Police Department			
		State Police			
		State Police Traffic Violation			
		Terrebonne Parish Sheriff's Office			
		Bayou Black VFD--Station 2			
		Bayou Black Volunteer Fire Department #9			

Type of Asset		Name/Description of Structure	100-Year Flood Plain	Composite Risk	Levee Failure
Essential Facilities, cont.	Fire Stations	Bayou Blue Fire Department			
		Bayou Blue VFD--Station 2			
		Bayou Blue VFD--Station 3			
		Bayou Cane Fire Protection District			
		Bayou Cane VFD--Hollywood Road Station			
		Bayou Cane VFD--Savanne Road Station			
		Bayou Cane VFD--W. Park Avenue Station			
		Bayou Dularge VFD--Station 1	X	X	X
		Bayou Dularge VFD--Station 2		X	
		Bayou Dularge VFD--Station 4		X	
		Bourg VFD			X
		Coteau Volunteer Fire Department			
		Donner-Chacahoula--Central Station			
		Dularge Volunteer Fire Department #10	X	X	X
		Grand Caillou Fire Department Fire # 4A	X	X	
		Grand Caillou Fire Department Fire # 4A	X	X	X
		Grand Caillou VFD--Bobtown Station	X	X	
		Grand Caillou VFD--Bobtown Sub Station	X	X	X
		Grand Caillou VFD--Dulac Fire Station	X	X	X
		Grand Caillou VFD--Dulac Sub Station	X	X	X
		Houma FD--Airbase Station 4		X	
		Houma FD--East Houma Station 3	X	X	
		Houma FD - East Park Station		X	
		Houma FD--North Houma Station 2			
		Houma FD--South Houma Station 1			
		Houma Fire Department			
		Little Caillou VFD--Lower Station 3	X	X	X
	Fire Stations, cont.	Little Caillou VFD--Upper Station 1	X	X	
		Little Caillou/ Chauvin Fire #7	X	X	X
		Little Caillou/ Chauvin Fire #7	X	X	X
		Montegut District # 6 - Station 1	X	X	
		Montegut--Station 2	X	X	
		Montegut--Station 3		X	X
		Montegut--Station 4	X	X	X
		Schriever VFD--Central Schriever Station			
		Schriever VFD--Elsworth Station			

Type of Asset		Name/Description of Structure	100-Year Flood Plain	Composite Risk	Levee Failure
Essential Facilities, cont.		Schriever VFD--Gray Station			
		Schriever Volunteer Fire Dept.			
		Village East VFD--Central Station			
		West Terrebonne F&R (Gibson East)			X
		West Terrebonne F&R--(TPCG) Don/Ch	X		X
		West Terrebonne Fire & Rescue (TPCG)			X
	Schools	Acadian Elementary			
		Andrew Price			
		Bayou Black Elementary		X	
		Bayou Cane Adult Ed Center			
		Bourg Elementary	X	X	
		Broadmoor Elementary	X	X	
		Caldwell Middle			
		Coteau-Bayou Blue Elementary			
		Dularge Elementary	X	X	
		Dularge Middle		X	
		East Houma Elementary	X		
		East Street	X		
		Ellender Memorial High			
		Elysian Fields Middle	X	X	X
		Evergreen Jr. High			
		Gibson elementary			
		Grand Caillou Elementary	X	X	X
		Grand Caillou Middle		X	
		H.L. Bourgeois High			
		Honduras Elementary			
		Houma Jr. High			
		Juvenile Justice Center	X	X	X
		Lacache Middle	X	X	
		Legion Park Middle	X	X	
		Lisa Park Elementary			
		Maria Immacolata Elementary			
		Montegut Elementary	X	X	
		Montegut Middle	X	X	X
		Mulberry Elementary			
		Oaklawn Jr. High	X		

Type of Asset		Name/Description of Structure	100-Year Flood Plain	Composite Risk	Levee Failure
Essential Facilities, cont.	Schools, cont.	Oakshire Elementary			
		Omega Institure of Cosmetology	X		
		Point-aux-Chenes Elementary	X	X	X
		School for Exceptional Children			
		Schriever Elementary			
		South Louisiana Beauty College	X	X	
		South Terrebonne High			
		Southdown Elementary			
		St. Bernadette			
		St. Francis De Sales			
		St. Gregory Barbarigo	X	X	
		St. Matthew's			
		TARC			
		Terrebonne High			
		Terrebonne Career and Technical High		X	
		Terrebonne Parish School Board			
		Upper Little Caillou Elementary	X	X	
Essential Facilities, cont.	Schools, cont.	Vandebilt Catholic High			
		Village East Elementary	X	X	
		West Park Elementary			

Type of Asset		Name/Description of Structure	100-Year Flood Plain	Composite Risk	Levee Failure
Other	Parish Owned Buildings	Houma Terrebonne Housing Authority (Bayou Towers)			
		Public Works Yard		X	
		Pump Stations (Various Locations)		X	
	Child Care	Louis Infant Crisis Center			
		MacDonnell Methodist Children Services			
	Civic Center	Houma-Terrebonne Civic Center			
Lifeline Utility Systems	Sewage	Eureka Heights S/D - Gray			
		Fairlane Sewerage Corp - Gray	X	X	X
		Halliburton Energy Services			
		North Sewage Treatment Plant	X	X	
		South Sewage Treatment Plant	X	X	X
		Terrebonne Parish Con Gov-Cyp	X	X	
		Terrebonne Parish Pollution Control	X	X	
		TPCG Pollution Control South Treatment Plant	X	X	X
	Power Plants	Houma Generating St.			
		Terrebonne Parish - Houma Gene			
	Water	Andrew Price Regulator			
		Bac-t Lab			
		Bayou Black RW Pump Station	X	X	X
		Bayou Black Tank			
		Bayou Dularge Tank	X	X	X
		Benoit Pump Station	X	X	X
		Blimp Base PS			
		Boudreaux Canal Pump Station	X	X	X
		Chauvin Tank	X	X	X
		Cocodrie Tank	X	X	X
		Dulac Pump Station	X	X	X
		Dulac Tank	X	X	X
		Dumas Tank	X	X	
		Elliot Jones	X	X	X
		Gibson Tank			
		Grand Caillou Tank	X	X	X
		Hanson SG	X	X	
		Houma GS 1			
		Houma GS 2	X		
		Houma GS3			

Type of Asset		Name/Description of Structure	100-Year Flood Plain	Composite Risk	Levee Failure
Lifeline Utility Systems, cont.	Water, cont.	Houma Plant 3			
		Houma Plant High Service			
		Houma Water Plant			
		Intracoastal RW Pump Station			
		Klondyke Tank	X		
		Lafort Canal RW PS			
		Legion Building			
		Lower Dulac Tank	X	X	X
		Main Office			
		Minors SG	X	X	X
		Montegut Tank	X	X	X
		Munson PS			
		North Terrebonne Standpipe			
		Pointe-Aux-Chenes Pump Station	X	X	
		Pointe-Aux-Chenes Tank	X	X	X
		Presque Isle PS			
		Robinson Canal Pump Station	X	X	X
		Robinson Canal Tank	X	X	X
		Schriever GS1	X		
		Schriever GS2	X		
		Schriever Tank			
		Schriever Water Plant	X		
		Shell PS			
		South Terrebonne PS			
		South Terrebonne Standpipe			
		Texaco Master Meter	X	X	X
		Theriot Tank	X	X	X
		West Gibson Tank		X	X
		Williams Street PS	X	X	X

Category	Structure Loss						Contents Loss					Structure Use and Function Loss								Structure Loss+Content Loss+Function Loss ($)
	Name/Description of Structure	Structure Replacement Value ($)	x	Percent Damage (%)	=	Loss to Structure ($)	Replacement of Contents Value ($)	x	Percent Damage (%)	=	Loss to Contents ($)	Average Daily Operating Budget ($)	x	Functional Downtime	+	Displacement Cost Per Day	x	Displacement Time	=	Stucture Use & Function Cost	
	Office of Emergency Preparedness (OEP)	$1,950,000	x	32%	=	$624,000	$2,925,000	x	0.0%	=	$0	$137	x	10	+	$137	x	30	=	$45,210	$669,210
Police Stations	Houma Police Department	$1,246,000	x	32%	=	$398,720	$1,869,000	x	0.0%	=	$0	$274	x	10	+	$274	x	30	=	$90,420	$489,140
	State Police	$1,246,000	x	32%	=	$398,720	$1,869,000	x	0.0%		$0	$274	x	15	+	$274	x	70	=	$306,880	$705,600
	State Police Traffic Violation	$1,246,000	x	32%	=	$398,720	$1,869,000	x	0.0%		$0	$274	x	15	+	$274	x	70	=	$306,880	$705,600
	Terrebonne Parish Sheriff's Office	$1,246,000	x	32%	=	$398,720	$1,869,000	x	0.0%	=	$0	$342	x	0	+	$342	x	0	=	$0	$398,720
Fire Stations	Bayou Black VFD--Station 2	$534,000	x	32%	=	$170,880	$801,000	x	0.0%	=	$0	$274	x	0	+	$274	x	0	=	$0	$170,880
	Bayou Black Volunteer Fire Department #9	$534,000	x	32%	=	$170,880	$801,000	x	0.0%	=	$0	$274	x	10	+	$274	x	30	=	$90,420	$261,300
	Bayou Blue Fire Department	$534,000	x	32%	=	$170,880	$801,000	x	0.0%	=	$0	$274	x	0	+	$274	x	0	=	$0	$170,880
	Bayou Blue VFD--Station 2	$534,000	x	32%	=	$170,880	$801,000	x	0.0%	=	$0	$274	x	0	+	$274	x	0	=	$0	$170,880
	Bayou Blue VFD--Station 3	$534,000	x	32%	=	$170,880	$801,000	x	33.0%	=	$264,330	$274	x	30	+	$274	x	230	=	$1,953,620	$2,388,830
	Bayou Cane Fire Protection District	$534,000	x	32%	=	$170,880	$801,000	x	0.0%	=	$0	$274	x	0	+	$274	x	0	=	$0	$170,880
	Bayou Cane VFD--Hollywood Road Station	$534,000	x	32%	=	$170,880	$801,000	x	0.0%	=	$0	$2,648	x	0	+	$2,648	x	0	=	$0	$170,880
	Bayou Cane VFD--Savanne Road Station	$534,000	x	32%	=	$170,880	$801,000	x	0.0%	=	$0	$2,648	x	0	+	$2,648	x	0	=	$0	$170,880
	Bayou Cane VFD--W. Park Avenue Station	$534,000	x	32%	=	$170,880	$801,000	x	0.0%	=	$0	$2,648	x	0	+	$2,648	x	0	=	$0	$170,880
	Bayou Dularge VFD--Station 1	$534,000	x	32%	=	$170,880	$801,000	x	33.0%	=	$264,330	$274	x	30	+	$274	x	230	=	$1,953,620	$2,388,830
	Bayou Dularge VFD--Station 2	$534,000	x	32%	=	$170,880	$801,000	x	0.0%	=	$0	$274	x	12	+	$274	x	46	=	$163,852	$334,732
	Bayou Dularge VFD--Station 4	$534,000	x	32%	=	$170,880	$801,000	x	21.0%	=	$168,210	$274	x	23	+	$274	x	134	=	$881,184	$1,220,274
	Bourg VFD	$534,000	x	32%	=	$170,880	$801,000	x	0.0%	=	$0	$493	x	0	+	$493	x	0	=	$0	$170,880
	Coteau Volunteer Fire Department	$534,000	x	32%	=	$170,880	$801,000	x	0.0%	=	$0	$986	x	0	+	$986	x	0	=	$0	$170,880
	Donner-Chacahoula--Central Station	$534,000	x	32%	=	$170,880	$801,000	x	21.0%	=	$168,210	$274	x	23	+	$274	x	134	=	$881,184	$1,220,274
	Dularge Volunteer Fire Department #10	$534,000	x	32%	=	$170,880	$801,000	x	13.5%	=	$108,135	$274	x	15	+	$274	x	70	=	$306,880	$585,895
	Gibson East VFD--Central Station	$534,000	x	32%	=	$170,880	$801,000	x	33.0%	=	$264,330	$274	x	30	+	$274	x	230	=	$1,953,620	$2,388,830
	Gibson/Gibson East/Donner-Chaculula	$534,000	x	32%	=	$170,880	$801,000	x	33.0%	=	$264,330	$274	x	30	+	$274	x	230	=	$1,953,620	$2,388,830
	Grand Caillou Fire Department Fire # 4	$534,000	x	32%	=	$170,880	$801,000	x	21.0%	=	$168,210	$274	x	23	+	$274	x	134	=	$881,184	$1,220,274
	Grand Caillou Fire Department Fire #4A	$534,000	x	32%	=	$170,880	$801,000	x	0.0%	=	$0	$274	x	15	+	$274	x	70	=	$306,880	$477,760
	Grand Caillou VFD--Bobtown Station	$534,000	x	32%	=	$170,880	$801,000	x	21.0%	=	$168,210	$274	x	23	+	$274	x	134	=	$881,184	$1,220,274

Category	Structure Loss							Contents Loss							Structure Use and Function Loss										Structure Loss+Content Loss+Function Loss ($)
	Name/Description of Structure	Structure Replacement Value ($)	x	Percent Damage (%)	=	Loss to Structure ($)		Replacement of Contents Value ($)	x	Percent Damage (%)	=	Loss to Contents ($)		Average Daily Operating Budget ($)	x	Functional Downtime	+	Displacement Cost Per Day	x	Displacement Time	=	Stucture Use & Function Cost		
Fire Stations, Cont.	Grand Caillou VFD--Bobtown Sub Station	$534,000	x	32%	=	$170,880		$801,000	x	33.0%	=	$264,330		$274	x	30	+	$274	x	230	=	$1,953,620		$2,388,830
	Grand Caillou VFD--Dulac Fire Station	$534,000	x	32%	=	$170,880		$801,000	x	33.0%	=	$264,330		$274	x	30	+	$274	x	230	=	$1,953,620		$2,388,830
	Grand Caillou VFD--Dulac Sub Station	$534,000	x	32%	=	$170,880		$801,000	x	33.0%	=	$264,330		$274	x	30	+	$274	x	230	=	$1,953,620		$2,388,830
	Houma FD-- Airbase Station 4	$534,000		32%	=	$170,880		$801,000	x	0.0%	=	$0		$274	x	15	+	$274	x	70	=	$306,880		$477,760
	Houma FD--Airbase Station 5	$504,005	x	32%	=	$161,282		$756,008	x	0.0%	=	$0		$274	x	0	+	$274	x	0	=	$0		$161,282
	Houma FD-- East Park Station	$534,000	x	32%	=	$170,880		$801,000	x	0.0%	=	$0		$274	x	15	+	$274	x	70	=	$306,880		$477,760
	Houma FD--East Houma Station 3	$333,174	x	32%	=	$106,616		$499,761	x	40.5%	=	$202,403		$274	x	30	+	$274	x	365	=	$3,100,310		$3,409,329
	Houma FD--North Houma	$236,794	x	32%	=	$75,774		$355,191	x	0.0%	=	$0		$274	x	0	+	$274	x	0	=	$0		$75,774
	Houma FD--South Houma Station 1	$422,366	x	32%	=	$135,157		$633,549	x	0.0%	=	$0		$274	x	12	+	$274	x	46	=	$163,852		$299,009
	Houma Fire Department	$701,252	x	32%	=	$224,401		$1,051,878	x	0.0%	=	$0		$274	x	0	+	$274	x	0	=	$0		$224,401
	Little Caillou VFD--Lower Station 3	$534,000	x	32%	=	$170,880		$801,000	x	33.0%	=	$264,330		$274	x	30	+	$274	x	230	=	$1,953,620		$2,388,830
	Little Caillou VFD--Upper Station 1	$534,000	x	32%	=	$170,880		$801,000	x	0.0%	=	$0		$274	x	12	+	$274	x	46	=	$163,852		$334,732
	Little Caillou/ Chauvin Fire #7	$534,000	x	32%	=	$170,880		$801,000	x	13.5%	=	$108,135		$274	x	15	+	$274	x	70	=	$306,880		$585,895
	Montegut District # 6	$534,000	x	32%	=	$170,880		$801,000	x	0.0%	=	$0		$1,027	x	12	+	$1,027	x	46	=	$614,146		$785,026
	Montegut--Station 1	$534,000	x	32%	=	$170,880		$801,000	x	0.0%	=	$0		$1,027	x	12	+	$1,027	x	46	=	$614,146		$785,026
	Montegut--Station 2	$534,000	x	32%	=	$170,880		$801,000	x	33.0%	=	$264,330		$1,027	x	30	+	$1,027	x	230	=	$7,322,510		$7,757,720
	Montegut--Station 3	$534,000	x	32%	=	$170,880		$801,000	x	33.0%	=	$264,330		$1,027	x	30	+	$1,027	x	230	=	$7,322,510		$7,757,720
	Montegut--Station 4	$534,000	x	32%	=	$170,880		$801,000	x	0.0%	=	$0		$1,027	x	10	+	$1,027	x	30	=	$338,910		$509,790
	Schriever VFD--Central Schriever Station	$534,000	x	32%	=	$170,880		$801,000	x	0.0%	=	$0		$274	x	0	+	$274	x	0	=	$0		$170,880
	Schriever VFD--Elsworth Station	$534,000	x	32%	=	$170,880		$801,000	x	33.0%	=	$264,330		$274	x	30	+	$274	x	230	=	$1,953,620		$2,388,830
	Schriever VFD--Gray Station	$534,000	x	32%	=	$170,880		$801,000	x	0.0%	=	$0		$274	x	0	+	$274	x	0	=	$0		$170,880
	Schriever Volunteer Fire Dept.	$534,000	x	32%	=	$170,880		$801,000	x	0.0%	=	$0		$274	x	12	+	$274	x	46	=	$163,852		$334,732
	Village East VFD--Central Station	$534,000	x	32%	=	$170,880		$801,000	x	0.0%	=	$0		$274	x	12	+	$274	x	46	=	$163,852		$334,732
	Village East Volunteer Fire Department	$534,000	x	32%	=	$170,880		$801,000	x	0.0%	=	$0		$274	x	10	+	$274	x	30	=	$90,420		$261,300
Schools	Acadian Elementary	$6,880,830	x	32%	=	$2,201,866		$10,321,245	x	0.0%	=	$0		$274	x	0	+	$274	x	0	=	$0		$2,201,866
	Andrew Price	$5,229,431	x	32%	=	$1,673,418		$7,844,147	x	0.0%	=	$0		$275	x	0	+	$275	x	0	=	$0		$1,673,418
	Bayou Black Elementary	$1,632,418	x	32%	=	$522,374		$2,448,627	x	0.0%	=	$0		$277	x	0	+	$277	x	0	=	$0		$522,374
	Bayou Cane Adult Ed Center	$5,229,431	x	32%	=	$1,673,418		$7,844,147	x	0.0%	=	$0		$279	x	0	+	$279	x	0	=	$0		$1,673,418
	Bourg Elementary	$3,369,234	x	32%	=	$1,078,155		$5,053,851	x	0.0%	=	$0		$281	x	12	+	$281	x	46	=	$168,038		$1,246,193
	Broadmoor Elementary	$4,802,345	x	32%	=	$1,536,750		$7,203,518	x	13.5%	=	$972,475		$282	x	15	+	$282	x	70	=	$315,840		$2,825,065
	Caldwell Middle	$5,229,431	x	32%	=	$1,673,418		$7,844,147	x	0.0%	=	$0		$283	x	0	+	$283	x	0	=	$0		$1,673,418
	Coteau-Bayou Blue Elementary	$6,169,020	x	32%	=	$1,974,086		$9,253,530	x	0.0%	=	$0		$284	x	0	+	$284	x	0	=	$0		$1,974,086
	Dularge Elementary	$2,296,774	x	32%	=	$734,968		$3,445,161	x	21.0%	=	$723,484		$285	x	23	+	$285	x	134	=	$916,560		$2,375,011
	Dularge Middle	$3,986,136	x	32%	=	$1,275,564		$5,979,204	x	13.5%	=	$807,193		$286	x	15	+	$286	x	70	=	$320,320		$2,403,076
	East Houma Elementary	$3,986,136	x	32%	=	$1,275,564		$5,979,204	x	0.0%	=	$0		$287	x	10	+	$287	x	30	=	$94,710		$1,370,274
	East Street	$3,986,136	x	32%	=	$1,275,564		$5,979,204	x	0.0%	=	$0		$288	x	0	+	$288	x	0	=	$0		$1,275,564

Category	Structure Loss							Contents Loss							Structure Use and Function Loss										Structure Loss+Content Loss+Function Loss ($)
	Name/Description of Structure	Structure Replacement Value ($)	x	Percent Damage (%)	=	Loss to Structure ($)		Replacement of Contents Value ($)	x	Percent Damage (%)	=	Loss to Contents ($)		Average Daily Operating Budget ($)	x	Functional Downtime	+	Displacement Cost Per Day	x	Displacement Time	=	Stucture Use & Function Cost		
	Ellender Memorial High	$10,952,383	x	32%	=	$3,504,763		$16,428,575	x	0.0%	=	$0		$289	x	0	+	$289	x	0	=	$0			$3,504,763
	Elysian Fields Middle	$4,546,093	x	32%	=	$1,454,750		$6,819,140	x	0.0%	=	$0		$290	x	12	+	$290	x	46	=	$173,420			$1,628,170
	Evergreen Jr. High	$9,528,763	x	32%	=	$3,049,204		$14,293,145	x	0.0%	=	$0		$291	x	0	+	$291	x	0	=	$0			$3,049,204
	Gibson Elementary	$2,116,448	x	32%	=	$677,263		$3,174,672	x	0.0%	=	$0		$293	x	12	+	$293	x	46	=	$175,214			$852,477
	Grand Caillou Elementary	$4,470,167	x	32%	=	$1,430,453		$6,705,251	x	40.5%	=	$2,715,626		$293	x	30	+	$293	x	365	=	$3,315,295			$7,461,375
	Grand Caillou Middle	$5,865,314	x	32%	=	$1,876,900		$8,797,971	x	21.0%	=	$1,847,574		$293	x	23	+	$293	x	134	=	$942,288			$4,666,762
	H.L. Bourgeois High	$10,781,549	x	32%	=	$3,450,096		$16,172,324	x	0.0%	=	$0		$293	x	0	+	$293	x	0	=	$0			$3,450,096
	Honduras Elementary	$3,112,982	x	32%	=	$996,154		$4,669,473	x	0.0%	=	$0		$293	x	0	+	$293	x	0	=	$0			$996,154
	Houma Jr. High	$9,661,634	x	32%	=	$3,091,723		$14,492,451	x	0.0%	=	$0		$293	x	0	+	$293	x	0	=	$0			$3,091,723
	Juvenile Justice Center	$5,229,431	x	32%		$1,673,418		$7,844,147	x	0.0%	=	$0		$293	x	15	+	$293	x	70	=	$328,160			$2,001,578
	Lacache Middle	$4,726,418	x	32%	=	$1,512,454		$7,089,627	x	33.0%	=	$2,339,577		$293	x	30	+	$293	x	230	=	$2,089,090			$5,941,121
	Legion Park Middle	$2,173,393	x	32%	=	$695,486		$3,260,090	x	0.0%	=	$0		$293	x	10	+	$293	x	30	=	$96,690			$792,176
	Lisa Park Elementary	$5,827,351	x	32%	=	$1,864,752		$8,741,027	x	0.0%	=	$0		$293	x	10	+	$293	x	30	=	$96,690			$1,961,442
	Maria Immacolata Elementary	$1,860,197	x	32%	=	$595,263		$2,790,296	x	0.0%	=	$0		$293	x	0	+	$293	x	0	=	$0			$595,263
	Montegut Elementary	$2,666,915	x	32%	=	$853,413		$4,000,373	x	40.5%	=	$1,620,151		$293	x	30	+	$293	x	365	=	$3,315,295			$5,788,859
	Montegut Middle	$6,150,038	x	32%	=	$1,968,012		$9,225,057	x	64.5%	=	$5,950,162		$293	x	30	+	$293	x	365	=	$3,315,295			$11,233,469
	Mulberry Elementary	$5,808,370	x	32%	=	$1,858,678		$8,712,555	x	0.0%	=	$0		$293	x	0	+	$293	x	0	=	$0			$1,858,678
	Oaklawn Jr. High	$6,320,873	x	32%	=	$2,022,679		$9,481,310	x	0.0%	=	$0		$293	x	0	+	$293	x	0	=	$0			$2,022,679
	Oakshire Elementary	$5,950,732	x	32%	=	$1,904,234		$8,926,098	x	0.0%	=	$0		$293	x	0	+	$293	x	0	=	$0			$1,904,234
Schools, Cont.	Omega Institure of Cosmentology	$3,986,136	x	32%	=	$1,275,564		$5,979,204	x	0.0%	=	$0		$293	x	0	+	$293	x	0	=	$0			$1,275,564
	Point-aux-Chenes Elementary	$1,471,074	x	32%	=	$470,744		$2,206,611	x	33.0%	=	$728,182		$293	x	30	+	$293	x	230	=	$2,089,090			$3,288,015
	School for Exceptional Chrildren	$5,229,431	x	32%		$1,673,418		$7,844,147	x	0.0%	=	$0		$293	x	15	+	$293	x	70	=	$328,160			$2,001,578
	Schriever Elementary	$5,628,044	x	32%	=	$1,800,974		$8,442,066	x	0.0%	=	$0		$293	x	0	+	$293	x	0	=	$0			$1,800,974
	South Louisiana Beauty College	$3,986,136	x	32%	=	$1,275,564		$5,979,204	x	0.0%	=	$0		$293	x	10	+	$293	x	30	=	$96,690			$1,372,254
	South Terrebonne High	$11,180,162	x	32%	=	$3,577,652		$16,770,243	x	0.0%	=	$0		$293	x	0	+	$293	x	0	=	$0			$3,577,652
	Southdown Elementary	$5,039,615	x	32%	=	$1,612,677		$7,559,423	x	0.0%	=	$0		$293	x	0	+	$293	x	0	=	$0			$1,612,677
	St. Bernadette	$4,669,474	x	32%	=	$1,494,232		$7,004,211	x	0.0%	=	$0		$293	x	10	+	$293	x	30	=	$96,690			$1,590,922
	St. Francis De Sales	$7,735,002	x	32%	=	$2,475,201		$11,602,503	x	0.0%	=	$0		$293	x	0	+	$293	x	0	=	$0			$2,475,201
	St. Gregory Barbarigo	$2,306,264	x	32%	=	$738,004		$3,459,396	x	13.5%	=	$467,018		$293	x	15	+	$293	x	70	=	$328,160			$1,533,183
	St. Matthew's	$1,565,982	x	32%	=	$501,114		$2,348,973	x	0.0%	=	$0		$293	x	0	+	$293	x	0	=	$0			$501,114
	TARC	$3,986,316	x	32%	=	$1,275,621		$5,979,474	x	0.0%	=	$0		$293	x	0	+	$293	x	0	=	$0			$1,275,621
	Terrebonne Career and Technical High	$5,229,431	x	32%		$1,673,418		$7,844,147	x	0.0%	=	$0		$293	x	15	+	$293	x	70	=	$328,160			$2,001,578
	Terrebonne High	$9,946,358	x	32%	=	$3,182,835		$14,919,537	x	0.0%	=	$0		$293	x	0	+	$293	x	0	=	$0			$3,182,835
	Upper Little Caillou Elementary	$4,707,437	x	32%	=	$1,506,380		$7,061,156	x	0.0%	=	$0		$327	x	10	+	$327	x	30	=	$107,910			$1,614,290
	Vandebilt Catholic High	$9,025,751	x	32%	=	$2,888,240		$13,538,627	x	0.0%	=	$0		$328	x	0	+	$328	x	0	=	$0			$2,888,240
	Village East Elementary	$2,799,786	x	32%	=	$895,932		$4,199,679	x	0.0%	=	$0		$329	x	12	+	$329	x	46	=	$196,742			$1,092,674
	West Park Elementary	$3,986,316	x	32%	=	$1,275,621		$5,979,474	x	0.0%	=	$0		$330	x	0	+	$330	x	0	=	$0			$1,275,621

Category	Structure Loss							Contents Loss							Structure Use and Function Loss										Structure Loss+Content Loss+Function Loss ($)
	Name/Description of Structure	Structure Replacement Value ($)	x	Percent Damage (%)	=	Loss to Structure ($)		Replacement of Contents Value ($)	x	Percent Damage (%)	=	Loss to Contents ($)		Average Daily Operating Budget ($)	x	Functional Downtime	+	Displacement Cost Per Day	x	Displacement Time	=	Stucture Use & Function Cost		
Home Health	Anoited Angels Homecare	$3,115,000	x	32%	=	$996,800		$4,672,500.0	x	0.0%	=	$0		$274	x	0	+	$274	x	0	=	$0		$996,800
	Acadian Ambulance Service	$3,115,000	x	32%	=	$996,800		$4,672,500	x	0.0%	=	$0		$274	x	0	+	$274	x	0	=	$0		$984,340
	Bayou Home Care	$3,115,000	x	32%	=	$996,800		$4,672,500.0	x	0.0%	=	$0		$274	x	0	+	$274	x	0	=	$0		$996,800
	Bonne Terre Village	$3,115,000	x	32%	=	$996,800		$4,672,500.0	x	0.0%	=	$0		$274	x	0	+	$274	x	0	=	$0		$996,800
	Cardiovascular Institute of the South	$3,115,000	x	32%	=	$996,800		$4,672,500.0	x	7.5%	=	$350,438		$274	x	15	+	$274	x	70	=	$306,880		$1,654,118
	Chabert Medical Center	$23,496,037	x	32%	=	$7,518,732		$35,244,056	x	7.5%	=	$2,643,304		$274	x	15	+	$274	x	70	=	$306,880		$10,468,916
	Chateau Terrebonne Health Care	$3,115,000	x	32%	=	$996,800		$4,672,500.0	x	0.0%	=	$0		$274	x	0	+	$274	x	0	=	$0		$996,800
	Gulf States LTAC of Houma	$3,115,000	x	32%	=	$996,800		$4,672,500	x	0.0%	=	$0		$274	x	10	+	$274	x	30	=	$90,420		$1,087,220
	Heritage Manor of Houma	$3,115,000	x	32%	=	$996,800		$4,672,500.0	x	0.0%	=	$0		$274	x	0	+	$274	x	0	=	$0		$996,800
	Homestead Assisted Living	$3,115,000	x	32%	=	$996,800		$4,672,500.0	x	0.0%	=	$0		$274	x	10	+	$274	x	30	=	$90,420		$1,087,220
	Hospice of South Louisiana	$3,115,000	x	32%	=	$996,800		$4,672,500.0	x	0.0%	=	$0		$274	x	0	+	$274	x	0	=	$0		$996,800
	Journey Hospice	$3,115,000	x	32%	=	$996,800		$4,672,500.0	x	0.0%	=	$0		$274	x	0	+	$274	x	0	=	$0		$996,800
	Lafourche ARC	$3,115,000	x	32%	=	$996,800		$4,672,500.0	x	33.0%	=	$1,541,925		$274	x	30	+	$274	x	230	=	$1,953,620		$4,492,345
	Lafourche ARC - Main Office	$3,115,000	x	32%	=	$996,800		$4,672,500.0		0.0%		$0		$274	x	15		$274	x	70	=	$306,880		$1,303,680
	Louis Infant Crisis Center	$445,000	x	32%	=	$142,400		$445,000.0	x	0.0%	=	$0		$274	x	0	+	$274	x	0	=	$0		$142,400
	MacDonnell Methodist Children Services	$445,000	x	32%	=	$142,400		$445,000.0	x	0.0%	=	$0		$274	x	0	+	$274	x	0	=	$0		$142,400
	Mansion De'Ville Nursing Home	$3,115,000	x	32%	=	$996,800		$4,672,500.0		0.0%		$0		$274	x	0		$274	x	0	=	$0		$996,800
	Medical Team, Inc.		x	$0		32%	=	$0		0.0%		$0		$274	x	15		$274	x	70	=	$306,880		$306,880
	Oaks of Houma	$3,115,000	x	32%	=	$996,800		$4,672,500.0	x	13.5%	=	$630,788		$274	x	15	+	$274	x	70	=	$306,880		$1,934,468
	Physicians Surgery Specialty Hospital	$3,115,000	x	32%	=	$996,800				0.0%		$0		$274	x	15		$274	x	70	=	$306,880		$1,303,680
	Suites at Sugar Mill Point	$3,115,000	x	32%	=	$996,800		$4,672,500.0	x	0.0%	=	$0		$274	x	0	+	$274	x	0	=	$0		$996,800
	Synergy Home Health Care River Region	$3,115,000	x	32%	=	$996,800				0.0%		$0		$274	x	15		$274	x	70	=	$306,880		$1,303,680
	TARC	$3,115,000	x	32%	=	$996,800		$4,672,500.0	x	0.0%	=	$0		$274	x	0	+	$274	x	0	=	$0		$996,800
	Terrebonne General Medical Center	$3,115,000	x	32%	=	$996,800				0.0%		$0		$274	x	15		$274	x	70	=	$306,880		$1,303,680
	Terrebonne Home Care, Inc	$31	x	32%	=	$10				0.0%		$0		$274	x	15		$274	x	70	=	$306,880		$306,890
	Terrebonne House	$3,115,000	x	32%	=	$996,800		$4,672,500.0	x	0.0%	=	$0		$274	x	0	+	$274	x	0	=	$0		$996,800
	Terrebonne Mental Health Center	$3,115,000	x	32%	=	$996,800		$4,672,500.0	x	0.0%	=	$0		$274	x	0	+	$274	x	0	=	$0		$996,800
	Terrebonne Parish Health Unit	$3,115,000	x	32%	=	$996,800		$4,672,500.0	x	0.0%	=	$0		$274	x	0	+	$274	x	0	=	$0		$996,800
	Total Pharmacy Services	$3,115,000	x	32%	=	$996,800		$4,672,500.0	x	0.0%	=	$0		$274	x	0	+	$274	x	0	=	$0		$996,800
Parish Owned Buildings	Houma Terrebonne Housing Authority (Bayou Towers)	$1,040,000	x	32%	=	$332,800		$1,040,000	x	0.0%	=	$0		$274	x	0	+	$274	x	0	=	$0		$332,800
	911-Terrebonne Communications District	$1,950,000	x	32%	=	$624,000		$2,925,000	x	0.0%	=	$0		$82	x	0	+	$82	x	0	=	$0		$624,000
	Houma-Terrebonne Civic Center	$1,950,000	x	32%	=	$624,000		$2,925,000	x	0.0%	=	$0		$82	x	15	+	$82	x	70	=	$91,840		$715,840
	Housing Authority City of Houma	$1,950,000	x	32%	=	$624,000		$2,925,000	x	0.0%	=	$0		$82	x	15	+	$82	x	70	=	$91,840		$715,840
	Housing Authority City of Houma	$1,950,000	x	32%	=	$624,000		$2,925,000	x	0.0%	=	$0		$82	x	15	+	$82	x	70	=	$91,840		$715,840
	Public Works Yard	$1,040,000	x	32%	=	$332,800		$1,040,000	x	0.0%	=	$0		$55	x	0	+	$55	x	0	=	$0		$332,800
	Pump Stations (Various Locations)	$52,000	x	32%	=	$16,640		$52,000	x	0.0%	=	$0		$41	x	0	+	$41	x	0	=	$0		$16,640
	North Sewage Treatment Plant	$59,274,000	x	32%	=	$18,967,680		$59,274,000	x	21.0%	=	$12,447,540		$55	x	23	+	$55	x	134	=	$176,880		$31,592,100

Sewage	Eureka Heights S/D - Gray	$59,274,000	x	32%	=	$18,967,680	$59,274,000	x	0.0%	=	$0	$55	x	15	+	$55	x	70	=	$61,600	$19,029,280
	Fairlane Sewerage Corp-Gray	$59,274,000	x	32%	=	$18,967,680	$59,274,000	x	0.0%	=	$0	$55	x	15	+	$55	x	70	=	$61,600	$19,029,280
	Halliburton Energy Services	$59,274,000	x	32%	=	$18,967,680	$59,274,000	x	0.0%	=	$0	$55	x	15	+	$55	x	70	=	$61,600	$19,029,280
	Terrebonne Parish CON GOV-CYPR	$59,274,000	x	32%	=	$18,967,680	$59,274,000	x	0.0%	=	$0	$55	x	15	+	$55	x	70	=	$61,600	$19,029,280
	Terrebonne Parish Pollution Control	$59,274,000	x	32%	=	$18,967,680	$59,274,000	x	0.0%	=	$0	$55	x	15	+	$55	x	70	=	$61,600	$19,029,280
	TPCG Pollution Control South Treatment Plant	$59,274,000	x	32%	=	$18,967,680	$59,274,000	x	0.0%	=	$0	$55	x	15	+	$55	x	70	=	$61,600	$19,029,280
	South Sewage Treatment Plant	$59,274,000	x	32%	=	$18,967,680	$59,274,000	x	33.0%	=	$19,560,420	$55	x	30	+	$55	x	230	=	$392,150	$38,920,250
Water	Andrew Price Regulator	$690,000	x	32%	=	$220,800	$690,000	x	0.0%	=	$0	$55	x	0	+	$55	x	0	=	$0	$220,800
	Bac-t Lab	$690,000	x	32%	=	$220,800	$690,000	x	0.0%	=	$0	$55	x	0	+	$55	x	0	=	$0	$220,800
	Bayou Black RW Pump Station	$690,000	x	32%	=	$220,800	$690,000	x	0.0%	=	$0	$55	x	0	+	$55	x	0	=	$0	$220,800
	Bayou Black Tank	$690,000	x	32%	=	$220,800	$690,000	x	0.0%	=	$0	$55	x	0	+	$55	x	0	=	$0	$220,800
	Bayou Dularge Tank	$690,000	x	32%	=	$220,800	$690,000	x	33.0%	=	$227,700	$55	x	30	+	$55	x	230	=	$392,150	$840,650
	Benoit Pump Station	$690,000	x	32%	=	$220,800	$690,000	x	33.0%	=	$227,700	$55	x	30	+	$55	x	230	=	$392,150	$840,650
	Blimp Base Pump Station	$690,000	x	32%	=	$220,800	$690,000	x	0.0%	=	$0	$55	x	0	+	$55	x	0	=	$0	$220,800
	Boudreaux Canal Pump Station	$690,000	x	32%	=	$220,800	$690,000	x	33.0%	=	$227,700	$55	x	30	+	$55	x	230	=	$392,150	$840,650
	Chauvin Tank	$690,000	x	32%	=	$220,800	$690,000	x	40.5%	=	$279,450	$55	x	30	+	$55	x	365	=	$622,325	$1,122,575
	Cocodrie Tank	$690,000	x	32%	=	$220,800	$690,000	x	13.5%	=	$93,150	$55	x	15	+	$55	x	70	=	$61,600	$375,550
	Dulac Pump Station	$690,000	x	32%	=	$220,800	$690,000	x	13.5%	=	$93,150	$55	x	15	+	$55	x	70	=	$61,600	$375,550

Category	Structure Loss							Contents Loss							Structure Use and Function Loss											Structure Loss+Content Loss+Function Loss ($)
	Name/Description of Structure	Structure Replacement Value ($)	x	Percent Damage (%)	=	Loss to Structure ($)		Replacement of Contents Value ($)	x	Percent Damage (%)	=	Loss to Contents ($)			Average Daily Operating Budget ($)	x	Functional Downtime	+	Displacement Cost Per Day	x	Displacement Time	=	Stucture Use & Function Cost		
	Dulac Tank	$690,000	x	32%	=	$220,800		$690,000	x	13.5%	=	$93,150			$55	x	15	+	$55	x	70	=	$61,600			$375,550
	Dumas Tank	$690,000	x	32%	=	$220,800		$690,000	x	0.0%	=	$0			$55	x	12	+	$55	x	46	=	$32,890			$253,690
	Elliot Jones	$690,000	x	32%	=	$220,800		$690,000	x	33.0%	=	$227,700			$55	x	30	+	$55	x	230	=	$392,150			$840,650
	Gibson Tank	$690,000	x	32%	=	$220,800		$690,000	x	0.0%	=	$0			$55	x	12	+	$55	x	46	=	$32,890			$253,690
	Grand Caillou Tank	$690,000	x	32%	=	$220,800		$690,000	x	33.0%	=	$227,700			$55	x	30	+	$55	x	230	=	$392,150			$840,650
	Hanson SG	$690,000	x	32%	=	$220,800		$690,000	x	33.0%	=	$227,700			$55	x	30	+	$55	x	230	=	$392,150			$840,650
	Houma GS 1	$690,000	x	32%	=	$220,800		$690,000	x	0.0%	=	$0			$55	x	0	+	$55	x	0	=	$0			$220,800
	Houma GS 2	$690,000	x	32%	=	$220,800		$690,000	x	0.0%	=	$0			$55	x	10	+	$55	x	30	=	$18,150			$238,950
	Houma GS3	$690,000	x	32%	=	$220,800		$690,000	x	0.0%	=	$0			$55	x	0	+	$55	x	0	=	$0			$220,800
	Houma Plant 3	$690,000	x	32%	=	$220,800		$690,000	x	0.0%	=	$0			$55	x	0	+	$55	x	0	=	$0			$220,800
	Houma Plant High Service	$690,000	x	32%	=	$220,800		$690,000	x	0.0%	=	$0			$55	x	0	+	$55	x	0	=	$0			$220,800
	Houma Water Plant	$690,000	x	32%	=	$220,800		$690,000	x	0.0%	=	$0			$55	x	0	+	$55	x	0	=	$0			$220,800
	Intracoastal RW Pump Station	$690,000	x	32%	=	$220,800		$690,000	x	0.0%	=	$0			$55	x	0	+	$55	x	0	=	$0			$220,800
	Klondyke Tank	$690,000	x	32%	=	$220,800		$690,000	x	0.0%	=	$0			$55	x	0	+	$55	x	0	=	$0			$220,800
	Lafort Canal RW PS	$690,000	x	32%	=	$220,800		$690,000	x	33.0%	=	$227,700			$55	x	30	+	$55	x	230	=	$392,150			$840,650
	Legion Building	$690,000	x	32%	=	$220,800		$690,000	x	0.0%	=	$0			$55	x	10	+	$55	x	30	=	$18,150			$238,950
	Lower Dulac Tank	$690,000	x	32%				$690,000		33.0%					$55		30		$55		230					
	Main Office	$690,000	x	32%				$690,000		0.0%					$55		0		$55		0					
	Minors SG	$690,000	x	32%				$690,000		33.0%					$55		30		$55		230					
	Montegut Tank	$690,000	x	32%	=	$220,800		$690,000	x	40.5%	=	$279,450			$55	x	30	+	$55	x	365	=	$622,325			$1,122,575
	Munson PS	$690,000	x	32%	=	$220,800		$690,000	x	0.0%	=	$0			$55	x	0	+	$55	x	0	=	$0			$220,800
Water, Cont.	North Terrebonne Standpipe	$690,000	x	32%	=	$220,800		$690,000	x	0.0%	=	$0			$55	x	0	+	$55	x	0	=	$0			$220,800
	Pointe-Aux-Chenes Pump Station	$690,000	x	32%	=	$220,800		$690,000	x	13.5%	=	$93,150			$55	x	15	+	$55	x	70	=	$61,600			$375,550
	Pointe-Aux-Chenes Tank	$690,000	x	32%	=	$220,800		$690,000	x	33.0%	=	$227,700			$55	x	30	+	$55	x	230	=	$392,150			$840,650
	Presque Isle PS	$690,000	x	32%	=	$220,800		$690,000	x	0.0%	=	$0			$55	x	0	+	$55	x	0	=	$0			$220,800
	Robinson Canal Pump Station	$690,000	x	32%	=	$220,800		$690,000	x	33.0%	=	$227,700			$55	x	30	+	$55	x	230	=	$392,150			$840,650
	Robinson Canal Tank	$690,000	x	32%	=	$220,800		$690,000	x	33.0%	=	$227,700			$55	x	30	+	$55	x	230	=	$392,150			$840,650
	Schriever GS1	$690,000	x	32%	=	$220,800		$690,000	x	33.0%	=	$227,700			$55	x	30	+	$55	x	230	=	$392,150			$840,650
	Schriever GS2	$690,000	x	32%	=	$220,800		$690,000	x	0.0%	=	$0			$55	x	0	+	$55	x	0	=	$0			$220,800
	Schriever Plant	$690,000	x	32%	=	$220,800		$690,000	x	33.0%	=	$227,700			$55	x	30	+	$55	x	230	=	$392,150			$840,650
	Schriever Tank	$690,000	x	32%	=	$220,800		$690,000	x	0.0%	=	$0			$55	x	0	+	$55	x	0	=	$0			$220,800
	Schriever Water Plant	$690,000	x	32%	=	$220,800		$690,000	x	0.0%	=	$0			$55	x	0	+	$55	x	0	=	$0			$220,800
	Shell PS	$690,000	x	32%	=	$220,800		$690,000	x	13.5%	=	$93,150			$55	x	15	+	$55	x	70	=	$61,600			$375,550
	Sludge Press Building	$690,000	x	32%	=	$220,800		$690,000	x	33.0%	=	$227,700			$55	x	30	+	$55	x	230	=	$392,150			$840,650
	South Terrebonne PS	$690,000	x	32%	=	$220,800		$690,000	x	0.0%	=	$0			$55	x	0	+	$55	x	0	=	$0			$220,800
	South Terrebonne Standpipe	$690,000	x	32%	=	$220,800		$690,000	x	0.0%	=	$0			$55	x	0	+	$55	x	0	=	$0			$220,800
	Texaco Master Meter	$690,000	x	32%	=	$220,800		$690,000	x	40.5%	=	$279,450			$55	x	30	+	$55	x	365	=	$622,325			$1,122,575
	Theriot Tank	$690,000	x	32%	=	$220,800		$690,000	x	21.0%	=	$144,900			$55	x	23	+	$55	x	134	=	$176,880			$542,580
	Waterproof RW PS	$690,000	x	32%	=	$220,800		$690,000	x	33.0%	=	$227,700			$55	x	30	+	$55	x	230	=	$392,150			$840,650
	West Gibson Tank	$690,000	x	32%	=	$220,800		$690,000	x	13.5%	=	$93,150			$55	x	15	+	$55	x	70	=	$61,600			$375,550
	Williams Street PS	$690,000	x	32%	=	$220,800		$690,000	x	21.0%	=	$144,900			$55	x	23	+	$55	x	134	=	$176,880			$542,580
	Total Structure Value	**$902,666,747**		**Total Estimated Losses**		**$288,190,959**				**Total Contents Loss**		**$1,147,655,440**										**Total Structure Use and Function Loss**		**$77,231,290**		**$1,513,077,689**

Category	Structure Loss							Contents Loss					Structure Use and Function Loss								Structure Loss+Content Loss+Function Loss ($)
	Name/Description of Structure	Structure Replacement Value ($)	x	# Floors	Inundation (ft)	Percent Damage (%)	=	Loss to Structure ($)	Replacement of Contents Value ($)	x	Percent Damage (%)	=	Loss to Contents ($)	Average Daily Operating Budget ($)	x	Functional Downtime	+	Displacement Cost Per Day	x	Displacement Time	=	Stucture Use & Function Cost	
OEP	Office of Emergency Preparedness (OEP)	$1,950,000	x	1	-2	0%	=	$0	$2,925,000	x	0.0%	=	$0	$137	x	10	+	$137	x	30	=	$45,210	$45,210
Police Stations	Houma Police Department	$1,246,000	x	1	-2	0%	=	$0	$1,869,000	x	0.0%	=	$0	$274	x	10	+	$274	x	30	=	$90,420	$90,420
	State Police	$1,246,000	x	1	-1	0%	=	$0	$1,869,000	x	0.0%	=	$0	$274	x	12	+	$274	x	46	=	$163,852	$163,852
	State Police Traffic Violation	$1,246,000	x	1	-1	0%	=	$0	$1,869,000	x	0.0%	=	$0	$274	x	12	+	$274	x	46	=	$163,852	$163,852
	Terrebonne Parish Sheriff's Office	$1,246,000	x	1	-5	0%	=	$0	$1,869,000	x	0.0%	=	$0	$342	x	0	+	$342	x	0	=	$0	$0
Fire Stations	Bayou Black VFD--Station 2	$534,000	x	1	-4	0%	=	$0	$801,000	x	0.0%	=	$0	$274	x	0	+	$274	x	0	=	$0	$0
	Bayou Black Volunteer Fire Department #9	$534,000	x	1	-2	0%	=	$0	$801,000	x	0.0%	=	$0	$274	x	10	+	$274	x	30	=	$90,420	$90,420
	Bayou Blue Fire Department	$534,000	x	1	-7	0%	=	$0	$801,000	x	0.0%	=	$0	$274	x	0	+	$274	x	0	=	$0	$0
	Bayou Blue VFD--Station 2	$534,000	x	1	-3	0%	=	$0	$801,000	x	0.0%	=	$0	$274	x	0	+	$274	x	0	=	$0	$0
	Bayou Blue VFD--Station 3	$534,000	x	1	2	22%	=	$117,480	$801,000	x	33.0%	=	$264,330	$274	x	30	+	$274	x	230	=	$1,953,620	$2,335,430
	Bayou Cane Fire Protection District	$534,000	x	1	-4	0%	=	$0	$801,000	x	0.0%	=	$0	$274	x	0	+	$274	x	0	=	$0	$0
	Bayou Cane VFD--Hollywood Road Station	$534,000	x	1	-6	0%	=	$0	$801,000	x	0.0%	=	$0	$2,648	x	0	+	$2,648	x	0	=	$0	$0
	Bayou Cane VFD--Savanne Road Station	$534,000	x	1	-6	0%	=	$0	$801,000	x	0.0%	=	$0	$2,648	x	0	+	$2,648	x	0	=	$0	$0
	Bayou Cane VFD--W. Park Avenue Station	$534,000	x	1	-3	0%	=	$0	$801,000	x	0.0%	=	$0	$2,648	x	0	+	$2,648	x	0	=	$0	$0
	Bayou Dularge VFD--Station 1	$534,000	x	1	2	22%	=	$117,480	$801,000	x	33.0%	=	$264,330	$274	x	30	+	$274	x	230	=	$1,953,620	$2,335,430
	Bayou Dularge VFD--Station 2	$534,000	x	1	1	14%	=	$74,760	$801,000	x	21.0%	=	$168,210	$274	x	23	+	$274	x	134	=	$881,184	$1,124,154
	Bayou Dularge VFD--Station 4	$534,000	x	1	1	14%	=	$74,760	$801,000	x	21.0%	=	$168,210	$274	x	23	+	$274	x	134	=	$881,184	$1,124,154
	Bourg VFD	$534,000	x	1	-3	0%	=	$0	$801,000	x	0.0%	=	$0	$493	x	0	+	$493	x	0	=	$0	$0
	Coteau Volunteer Fire Department	$534,000	x	1	-3	0%	=	$0	$801,000	x	0.0%	=	$0	$986	x	0	+	$986	x	0	=	$0	$0
	Donner-Chacahoula--Central Station	$534,000	x	1	1	14%	=	$74,760	$801,000	x	21.0%	=	$168,210	$274	x	23	+	$274	x	134	=	$881,184	$1,124,154
	Dularge Volunteer Fire Department #10	$534,000	x	1	0	9%	=	$48,060	$801,000	x	13.5%	=	$108,135	$274	x	15	+	$274	x	70	=	$306,880	$463,075
	Gibson East VFD--Central Station	$534,000	x	1	2	22%	=	$117,480	$801,000	x	33.0%	=	$264,330	$274	x	30	+	$274	x	230	=	$1,953,620	$2,335,430
	Gibson/Gibson East/Donner-Chaculula	$534,000	x	1	2	22%	=	$117,480	$801,000	x	33.0%	=	$264,330	$274	x	30	+	$274	x	230	=	$1,953,620	$2,335,430
	Grand Caillou Fire Department Fire # 4	$534,000	x	1	1	14%	=	$74,760	$801,000	x	21.0%	=	$168,210	$274	x	23	+	$274	x	134	=	$881,184	$1,124,154
	Grand Caillou Fire Department Fire # 4A	$534,000	x	1	1	14%	=	$74,760	$801,000	x	21.0%	=	$168,210	$274	x	23	+	$274	x	134	=	$881,184	$1,124,154
	Grand Caillou VFD--Bobtown Station	$534,000	x	1	1	14%	=	$74,760	$801,000	x	21.0%	=	$168,210	$274	x	23	+	$274	x	134	=	$881,184	$1,124,154

Category	Structure Loss							Contents Loss					Structure Use and Function Loss								Structure Loss+Content Loss+Function Loss ($)
	Name/Description of Structure	Structure Replacement Value ($)	x	# Floors	Inundation (ft)	Percent Damage (%)	=	Loss to Structure ($)	Replacement of Contents Value ($)	x	Percent Damage (%)	=	Loss to Contents ($)	Average Daily Operating Budget ($)	x	Functional Downtime	+	Displacement Cost Per Day	x	Displacement Time	=	Stucture Use & Function Cost	
Fire Stations, Cont.	Grand Caillou VFD--Bobtown Sub Station	$534,000	x	1	2	22%	=	$117,480	$801,000	x	33.0%	=	$264,330	$274	x	30	+	$274	x	230	=	$1,953,620	$2,335,430
	Grand Caillou VFD--Dulac Fire Station	$534,000	x	1	2	22%	=	$117,480	$801,000	x	33.0%	=	$264,330	$274	x	30	+	$274	x	230	=	$1,953,620	$2,335,430
	Grand Caillou VFD--Dulac Sub Station	$534,000	x	1	2	22%	=	$117,480	$801,000	x	33.0%	=	$264,330	$274	x	30	+	$274	x	230	=	$1,953,620	$2,335,430
	Houma FD -- Airbase Station 4	$534,000	x	1	1	14%	=	$74,760	$801,000	x	21.0%	=	$168,210	$274	x	23	+	$274	x	134	=	$881,184	$1,124,154
	Houma FD--Airbase Station 5	$504,005	x	1	-4	0%	=	$0	$756,008	x	0.0%	=	$0	$274	x	0	+	$274	x	0	=	$0	$0
	Houma FD -- East Park Station	$534,000	x	1	1	14%		$74,760	$801,000	x	21.0%	=	$168,210	$274	x	23	+	$274	x	134	=	$881,184	$1,124,154
	Houma FD--East Houma Station 3	$333,174	x	1	1	14%	=	$46,644	$499,761	x	21.0%	=	$104,950	$274	x	23	+	$274	x	134	=	$881,184	$1,032,778
	Houma FD--North Houma	$236,794	x	1	-3	0%	=	$0	$355,191	x	0.0%	=	$0	$274	x	0	+	$274	x	0	=	$0	$0
	Houma FD--South Houma Station 1	$422,366	x	1	-1	0%	=	$0	$633,549	x	0.0%	=	$0	$274	x	12	+	$274	x	46	=	$163,852	$163,852
	Houma Fire Department	$701,252	x	1	-4	0%	=	$0	$1,051,878	x	0.0%	=	$0	$274	x	0	+	$274	x	0	=	$0	$0
	Little Caillou VFD--Lower Station 3	$534,000	x	1	2	22%	=	$117,480	$801,000	x	33.0%	=	$264,330	$274	x	30	+	$274	x	230	=	$1,953,620	$2,335,430
	Little Caillou VFD--Upper Station 1	$534,000	x	1	-1	0%	=	$0	$801,000	x	0.0%	=	$0	$274	x	12	+	$274	x	46	=	$163,852	$163,852
	Little Caillou/ Chauvin Fire #7	$534,000	x	1	1	14%	=	$74,760	$801,000	x	21.0%	=	$168,210	$274	x	23	+	$274	x	134	=	$881,184	$1,124,154
	Montegut District # 6	$534,000	x	1	-1	0%	=	$0	$801,000	x	0.0%	=	$0	$1,027	x	12	+	$1,027	x	46	=	$614,146	$614,146
	Montegut--Station 1	$534,000	x	1	-1	0%	=	$0	$801,000	x	0.0%	=	$0	$1,027	x	12	+	$1,027	x	46	=	$614,146	$614,146
	Montegut--Station 2	$534,000	x	1	2	22%	=	$117,480	$801,000	x	33.0%	=	$264,330	$1,027	x	30	+	$1,027	x	230	=	$7,322,510	$7,704,320
	Montegut--Station 3	$534,000	x	1	2	22%	=	$117,480	$801,000	x	33.0%	=	$264,330	$1,027	x	30	+	$1,027	x	230	=	$7,322,510	$7,704,320
	Montegut--Station 4	$534,000	x	1	-2	0%	=	$0	$801,000	x	0.0%	=	$0	$1,027	x	10	+	$1,027	x	30	=	$338,910	$338,910
	Schriever VFD--Central Schriever Station	$534,000	x	1	-4	0%	=	$0	$801,000	x	0.0%	=	$0	$274	x	0	+	$274	x	0	=	$0	$0
	Schriever VFD--Elsworth Station	$534,000	x	1	2	22%	=	$117,480	$801,000	x	33.0%	=	$264,330	$274	x	30	+	$274	x	230	=	$1,953,620	$2,335,430
	Schriever VFD--Gray Station	$534,000	x	1	-7	0%	=	$0	$801,000	x	0.0%	=	$0	$274	x	0	+	$274	x	0	=	$0	$0
	Schriever Volunteer Fire Dept.	$534,000	x	1	-1	0%	=	$0	$801,000	x	0.0%	=	$0	$274	x	12	+	$274	x	46	=	$163,852	$163,852
	Village East VFD--Central Station	$534,000	x	1	-1	0%	=	$0	$801,000	x	0.0%	=	$0	$274	x	12	+	$274	x	46	=	$163,852	$163,852
	Village East Volunteer Fire Department	$534,000	x	1	-2	0%	=	$0	$801,000	x	0.0%	=	$0	$274	x	10	+	$274	x	30	=	$90,420	$90,420
Schools	Acadian Elementary	$6,880,830	x	1	-7	0%	=	$0	$10,321,245	x	0.0%	=	$0	$274	x	0	+	$274	x	0	=	$0	$0
	Andrew Price		x	1	-10	0%	=	$0	$0	x	0.0%	=	$0	$275	x	0	+	$275	x	0	=	$0	$0
	Bayou Black Elementary	$1,632,418	x	1	-4	0%	=	$0	$2,448,627	x	0.0%	=	$0	$277	x	0	+	$277	x	0	=	$0	$0
	Bayou Cane Adult Ed Center		x	1	-7	0%	=	$0	$0	x	0.0%	=	$0	$279	x	0	+	$279	x	0	=	$0	$0
	Bourg Elementary	$3,369,234	x	1	-1	0%	=	$0	$5,053,851	x	0.0%	=	$0	$281	x	12	+	$281	x	46	=	$168,038	$168,038
	Broadmoor Elementary	$4,802,345	x	1	0	9%	=	$432,211	$7,203,518	x	13.5%	=	$972,475	$282	x	15	+	$282	x	70	=	$315,840	$1,720,526
	Caldwell Middle	$5,229,431	x	1	-9	0%	=	$0	$7,844,147	x	0.0%	=	$0	$283	x	0	+	$283	x	0	=	$0	$0
	Coteau-Bayou Blue Elementary	$6,169,020	x	1	-5	0%	=	$0	$9,253,530	x	0.0%	=	$0	$284	x	0	+	$284	x	0	=	$0	$0
	Dularge Elementary	$2,296,774	x	1	1	14%	=	$321,548	$3,445,161	x	21.0%	=	$723,484	$285	x	23	+	$285	x	134	=	$916,560	$1,961,592
	Dularge Middle	$3,986,136	x	1	1	14%	=	$558,059	$5,979,204	x	21.0%	=	$1,255,633	$286	x	23	+	$286	x	134	=	$919,776	$2,733,468
	East Houma Elementary	$3,986,136	x	1	-2	0%	=	$0	$5,979,204	x	0.0%	=	$0	$287	x	10	+	$287	x	30	=	$94,710	$94,710
	East Street	$3,986,136	x	1	-3	0%	=	$0	$5,979,204	x	0.0%	=	$0	$288	x	0	+	$288	x	0	=	$0	$0

Category				Structure Loss						Contents Loss					Structure Use and Function Loss								Structure Loss+Content Loss+Function Loss ($)
	Name/Description of Structure	Structure Replacement Value ($)	x	# Floors	Inundation (ft)	Percent Damage (%)	=	Loss to Structure ($)	Replacement of Contents Value ($)	x	Percent Damage (%)	=	Loss to Contents ($)	Average Daily Operating Budget ($)	x	Functional Downtime	+	Displacement Cost Per Day	x	Displacement Time	=	Stucture Use & Function Cost	
	Ellender Memorial High	$10,952,383	x	1	1	14%	=	$1,533,334	$16,428,575	x	21.0%	=	$3,450,001	$289	x	23	+	$289	x	134	=	$929,424	$5,912,758
	Elysian Fields Middle	$4,546,093	x	1	-1	0%	=	$0	$6,819,140	x	0.0%	=	$0	$290	x	12	+	$290	x	46	=	$173,420	$173,420
	Evergreen Jr. High	$9,528,763	x	1	-9	0%	=	$0	$14,293,145	x	0.0%	=	$0	$291	x	0	+	$291	x	0	=	$0	$0
	Gibson Elementary	$2,116,448	x	1	-1	0%	=	$0	$3,174,672	x	0.0%	=	$0	$293	x	12	+	$293	x	46	=	$175,214	$175,214
	Grand Caillou Elementary	$4,470,167	x	1	3	27%	=	$1,206,945	$6,705,251	x	40.5%	=	$2,715,626	$294	x	30	+	$294	x	365	=	$3,326,610	$7,249,182
	Grand Caillou Middle	$5,865,314	x	1	1	14%	=	$821,144	$8,797,971	x	21.0%	=	$1,847,574	$295	x	23	+	$295	x	134	=	$948,720	$3,617,438
	Greenwood Middle	$1,983,557	x	1	-1	0%	=	$0	$2,975,336	x	0.0%	=	$0	$296	x	12	+	$296	x	46	=	$177,008	$177,008
	H.L. Bourgeois High	$10,781,549	x	1	-10	0%	=	$0	$16,172,324	x	0.0%	=	$0	$297	x	0	+	$297	x	0	=	$0	$0
	Honduras Elementary	$3,112,982	x	1	-4	0%	=	$0	$4,669,473	x	0.0%	=	$0	$299	x	0	+	$299	x	0	=	$0	$0
	Houma Jr. High	$9,661,634	x	1	-4	0%	=	$0	$14,492,451	x	0.0%	=	$0	$300	x	0	+	$300	x	0	=	$0	$0
	Juvenile Justice Center	$4,141,264	x	1	1	14%	=	$579,777	$6,211,896	x	21.0%	=	$1,304,498	$300	x	23		$300	x	134		$964,800	$2,849,075
	Lacache Middle	$4,726,418	x	1	2	22%	=	$1,039,812	$7,089,627	x	33.0%	=	$2,339,577	$302	x	30	+	$302	x	230	=	$2,153,260	$5,532,649
	Legion Park Middle	$2,173,393	x	1	-2	0%	=	$0	$3,260,090	x	0.0%	=	$0	$303	x	10	+	$303	x	30	=	$99,990	$99,990
	Lisa Park Elementary	$5,827,351	x	1	-2	0%	=	$0	$8,741,027	x	0.0%	=	$0	$304	x	10	+	$304	x	30	=	$100,320	$100,320
	Maria Immacolata Elementary	$1,860,197	x	1	-3	0%	=	$0	$2,790,296	x	0.0%	=	$0	$306	x	0	+	$306	x	0	=	$0	$0
	Montegut Elementary	$2,666,915	x	1	3	27%	=	$720,067	$4,000,373	x	40.5%	=	$1,620,151	$307	x	30	+	$307	x	365	=	$3,473,705	$5,813,923
	Montegut Middle	$6,150,038	x	1	7	43%	=	$2,644,516	$9,225,057	x	64.5%	=	$5,950,162	$308	x	30	+	$308	x	365	=	$3,485,020	$12,079,698
	Mulberry Elementary	$5,808,370	x	1	-5	0%	=	$0	$8,712,555	x	0.0%	=	$0	$309	x	0	+	$309	x	0	=	$0	$0
	Oaklawn Jr. High	$6,320,873	x	1	-3	0%	=	$0	$9,481,310	x	0.0%	=	$0	$310	x	0	+	$310	x	0	=	$0	$0
	Oakshire Elementary	$5,950,732	x	1	-3	0%	=	$0	$8,926,098	x	0.0%	=	$0	$311	x	0	+	$311	x	0	=	$0	$0
	Omega Institure of Cosmentology	$3,986,136	x	1	-4	0%	=	$0	$5,979,204	x	0.0%	=	$0	$312	x	0	+	$312	x	0	=	$0	$0
Schools, Cont.	Point-aux-Chenes Elementary	$1,471,074	x	1	2	22%	=	$323,636	$2,206,611	x	33.0%	=	$728,182	$313	x	30	+	$313	x	230	=	$2,231,690	$3,283,508
	School for Exceptional Children		x																				
	Schriever Elementary	$5,628,044	x	1	-10	0%	=	$0	$8,442,066	x	0.0%	=	$0	$314	x	0	+	$314	x	0	=	$0	$0
	South Louisiana Beauty College	$3,986,136	x	1	-2	0%	=	$0	$5,979,204	x	0.0%	=	$0	$315	x	10	+	$315	x	30	=	$103,950	$103,950
	South Terrebonne High	$11,180,162	x	1	-3	0%	=	$0	$16,770,243	x	0.0%	=	$0	$317	x	0	+	$317	x	0	=	$0	$0
	Southdown Elementary	$5,039,615	x	1	-3	0%	=	$0	$7,559,423	x	0.0%	=	$0	$318	x	0	+	$318	x	0	=	$0	$0
	St. Bernadette	$4,669,474	x	1	-2	0%	=	$0	$7,004,211	x	0.0%	=	$0	$319	x	10	+	$319	x	30	=	$105,270	$105,270
	St. Francis De Sales	$7,735,002	x	1	-5	0%	=	$0	$11,602,503	x	0.0%	=	$0	$320	x	0	+	$320	x	0	=	$0	$0
	St. Gregory Barbarigo	$2,306,264	x	1	0	9%	=	$207,564	$3,459,396	x	13.5%	=	$467,018	$321	x	15	+	$321	x	70	=	$359,520	$1,034,102
	St. Matthew's	$1,565,982	x	1	-5	0%	=	$0	$2,348,973	x	0.0%	=	$0	$322	x	0	+	$322	x	0	=	$0	$0
	TARC	$3,986,316	x	1	-4	0%	=	$0	$5,979,474	x	0.0%	=	$0	$323	x	0	+	$323	x	0	=	$0	$0
	Terrebonne Career and Technical High	$2,000,000	x	1	1	14%	=	$280,000	$3,000,000		21.0%	=	$630,000	$323	x	23	+	$323	x	134	=	$1,038,768	$1,948,768
	Terrebonne High	$9,946,358	x	1	-5	0%	=	$0	$14,919,537	x	0.0%	=	$0	$324	x	0	+	$324	x	0	=	$0	$0
	Terrebonne Parish School Board	$3,000,000	x	1	-1	0%	=	$0	$4,500,000	x	0.0%	=	$0	$324	x	12	+	$324	x	46	=	$193,752	$193,752
	Upper Little Caillou Elementary	$4,707,437	x	1	1	14%	=	$659,041	$7,061,156	x	21.0%	=	$1,482,843	$327	x	23	+	$327	x	134	=	$1,051,632	$3,193,516
	Vandebilt Catholic High	$9,025,751	x	1	-6	0%	=	$0	$13,538,627	x	0.0%	=	$0	$328	x	0	+	$328	x	0	=	$0	$0
	Village East Elementary	$2,799,786	x	1	-1	0%	=	$0	$4,199,679	x	0.0%	=	$0	$329	x	12	+	$329	x	46	=	$196,742	$196,742
	West Park Elementary	$3,986,316	x	1	-6	0%	=	$0	$5,979,474	x	0.0%	=	$0	$330	x	0	+	$330	x	0	=	$0	$0

Category	Structure Loss							Contents Loss					Structure Use and Function Loss								Structure Loss+Content Loss+Function Loss ($)
	Name/Description of Structure	Structure Replacement Value ($)	x	# Floors	Inundation (ft)	Percent Damage (%)	=	Loss to Structure ($)	Replacement of Contents Value ($)	x	Percent Damage (%)	=	Loss to Contents ($)	Average Daily Operating Budget ($)	x	Functional Downtime	+	Displacement Cost Per Day	x	Displacement Time	=	Stucture Use & Function Cost	
Home Health	Anoited Care Services LLC	$3,115,000	x	1	-3	0%	=	$0	$4,672,500.0	x	0.0%	=	$0	$274	x	0	+	$274	x	0	=	$0	$0
	Acadian Ambulance Services	$3,115,000	x	1	-5	0%	=	$0	$4,672,500	x	0.0%	=	$0	$274	x	0	+	$274	x	0	=	$0	$0
	Bayou Home Care	$3,115,000	x	1	-6	0%	=	$0	$4,672,500.0	x	0.0%	=	$0	$274	x	0	+	$274	x	0	=	$0	$0
	Bayou Terre Village	$3,115,000	x	1	-5	0%	=	$0	$4,672,500.0	x	0.0%	=	$0	$274	x	0	+	$274	x	0	=	$0	$0
	Cardiovascular Institute of the South	$3,115,000	x	2	-4	0%	=	$0	$4,672,500	x	0.0%	=	$0	$274	x	0	+	$274	x	0	=	$0	$0
	Chabert Medical Center	$23,496,037	x	2	0	5%	=	$1,174,802	$35,244,056	x	7.5%	=	$2,643,304	$274	x	15	+	$274	x	70	=	$306,880	$4,124,986
	Chateau Terrebonne Health Care	$3,115,000	x	1	-5	0%	=	$0	$4,672,500.0	x	0.0%	=	$0	$274	x	0	+	$274	x	0	=	$0	$0
	Gulf States LTAC of Houma	$3,115,000	x	2	-2	0%	=	$0	$4,672,500	x	0.0%	=	$0	$274	x	10	+	$274	x	30	=	$90,420	$90,420
	Heritage Manor of Houma	$3,115,000	x	1	-5	0%	=	$0	$4,672,500.0	x	0.0%	=	$0	$274	x	0	+	$274	x	0	=	$0	$0
	Homestead Assisted Living	$3,115,000	x	1	-2	0%	=	$0	$4,672,500.0	x	0.0%	=	$0	$274	x	10	+	$274	x	30	=	$90,420	$90,420
	Hospice of South Louisiana	$3,115,000	x	1	-4	0%	=	$0	$4,672,500.0	x	0.0%	=	$0	$274	x	0	+	$274	x	0	=	$0	$0
	Journey Hospice	$3,115,000	x	1	-4	0%	=	$0	$4,672,500.0	x	0.0%	=	$0	$274	x	0	+	$274	x	0	=	$0	$0
	Lafourche ARC	$3,115,000	x	1	2	22%	=	$685,300	$4,672,500.0	x	33.0%	=	$1,541,925	$274	x	30	+	$274	x	230	=	$1,953,620	$4,180,845
	Lafourche ARC - Main Office	$3,115,000	x	1	-5	0%	=	$0	$4,672,500.0	x	0.0%	=	$0	$274	x	0	+	$274	x	0	=	$0	$0
	Louis Infant Crisis Center	$445,000	x	1	-7	0%	=	$0	$445,000.0	x	0.0%	=	$0	$274	x	0	+	$274	x	0	=	$0	$0
	MacDonnell Methodist Children Services	$445,000	x	2	-3	0%	=	$0	$445,000.0	x	0.0%	=	$0	$274	x	0	+	$274	x	0	=	$0	$0
	Maison De'Ville Nursing Home	$3,115,000	x	1	-7	0%		$0	$4,672,500.0		0.0%		$0	$274		0		$274		0			$0
	Medical Team, Inc.	$3,115,000	x	1	-6	0%	=	$0	$4,672,500.0	x	0.0%	=	$0	$274	x	0	+	$274	x	0	=	$0	$0
	Oaks of Houma	$3,115,000	x	1	0	9%	=	$280,350	$4,672,500.0	x	13.5%	=	$630,788	$274	x	15	+	$274	x	70	=	$306,880	$1,218,018
	Physicians Surgery Speciality Hospital	$3,115,000	x	1	-4	0%	=	$0	$4,672,500	x	0.0%	=	$0	$274	x	0	+	$274	x	0	=	$0	$0
	Suites at Sugar Mill Point	$3,115,000	x	1	-3	0%	=	$0	$4,672,500.0	x	0.0%	=	$0	$274	x	0	+	$274	x	0	=	$0	$0
	Synergy Home Health Care River Region		x	1	-5	0%	=	$0	$0.0	x	0.0%	=	$0	$274	x	0	+	$274	x	0	=	$0	$0
	TARC	$3,115,000	x	1	-5	0%	=	$0	$4,672,500.0	x	0.0%	=	$0	$274	x	0	+	$274	x	0	=	$0	$0
	Terrebonne General Medical Center	$320,000,000	x	2	-5	0%	=	$0	$480,000,000	x	0.0%	=	$0	$411	x	0	+	$411	x	0	=	$0	$0
	Terrebonne Home Care, Inc	$3,115,000	x	1	-2	0%	=	$0	$4,672,500.0	x	0.0%	=	$0	$274	x	10	+	$274	x	30	=	$90,420	$90,420
	Terrebonne House	$3,115,000	x	1	-3	0%	=	$0	$4,672,500.0	x	0.0%	=	$0	$274	x	0	+	$274	x	0	=	$0	$0
	Terrebonne Mental Health Center	$3,115,000	x	1	-5	0%	=	$0	$4,672,500.0	x	0.0%	=	$0	$274	x	0	+	$274	x	0	=	$0	$0
	Terrebonne Parish Health Unit	$3,115,000	x	1	-5	0%	=	$0	$4,672,500.0	x	0.0%	=	$0	$274	x	0	+	$274	x	0	=	$0	$0
	Total Pharmacy Services	$3,115,000	x	1	-5	0%	=	$0	$4,672,500.0	x	0.0%	=	$0	$274	x	0	+	$274	x	0	=	$0	$0
Parish Owned Buildings	Houma Terrebonne Housing Authority (Bayou Towers)	$1,040,000	x	2	-3	0%	=	$0	$1,040,000	x	0.0%	=	$0	$274	x	0	+	$274	x	0	=	$0	$0
	911-Terrebonne Communitcations District	$1,950,000	x	1	-5	0%	=	$0	$2,925,000	x	0.0%	=	$0	$82	x	0	+	$82	x	0	=	$0	$0
	Houma-Terrebonne Civic Center	$3,520,000	x	1	-5	0%	=	$0	$3,520,000.0	x	0.0%	=	$0	$137	x	0	+	$137	x	0	=	$0	$0
	Housing Authority City of Houma	$1,040,000	x	2	-3	0%	=	$0	$1,040,000	x	0.0%	=	$0	$274	x	0	+	$274	x	0	=	$0	$0
	Public Works Yard	$1,040,000	x	1	-6	0%	=	$0	$1,040,000	x	0.0%	=	$0	$55	x	0	+	$55	x	0	=	$0	$0
	Pump Stations (Various Locations)	$52,000	x	1	-6	0%	=	$0	$52,000	x	0.0%	=	$0	$41	x	0	+	$41	x	0	=	$0	$0
Sewage	North Sewage Treatment Plant	$59,274,000	x	1	1	14%	=	$8,298,360	$59,274,000	x	21.0%	=	$12,447,540	$55	x	23	+	$55	x	134	=	$176,880	$20,922,780
	Eureka Heights S/D - Gray	$59,274,000	x	1	0	9%	=	$5,334,660	$59,274,000	x	13.5%	=	$8,001,990	$55	x	15	+	$55	x	70	=	$61,600	$13,398,250
	Fairlane Sewerage Corp - Gray	$59,274,000	x	1	0	9%	=	$5,334,660	$59,274,000	x	13.5%	=	$8,001,990	$55	x	15	+	$55	x	70	=	$61,600	$13,398,250
	Halliburton Energy Services	$59,274,000	x	1	0	9%	=	$5,334,660	$59,274,000	x	13.5%	=	$8,001,990	$55	x	15	+	$55	x	70	=	$61,600	$13,398,250
	Terrebonne Parish CON GOV- CYPR	$59,274,000	x	1	0	9%	=	$5,334,660	$59,274,000	x	13.5%	=	$8,001,990	$55	x	15	+	$55	x	70	=	$61,600	$13,398,250
	Terrebonne Parish Pollution Control	$59,274,000	x	1	0	9%	=	$5,334,660	$59,274,000	x	13.5%	=	$8,001,990	$55	x	15	+	$55	x	70	=	$61,600	$13,398,250

	TPCG Pollution Control South Treatment Plant	$59,274,000	x	1	0	9%	=	$5,334,660	$59,274,000	x	13.5%	=	$8,001,990	$55	x	15	+	$55	x	70	=	$61,600	$13,398,250
	South Sewage Treatment Plant	$59,274,000	x	1	2	22%	=	$13,040,280	$59,274,000	x	33.0%	=	$19,560,420	$55	x	30	+	$55	x	230	=	$392,150	$32,992,850
Water	Andrew Price Regulator	$690,000	x	1	-8	0%	=	$0	$690,000	x	0.0%	=	$0	$55	x	0	+	$55	x	0	=	$0	$0
	Bac-t Lab	$690,000	x	1	-3	0%	=	$0	$690,000	x	0.0%	=	$0	$55	x	0	+	$55	x	0	=	$0	$0
	Bayou Black RW Pump Station	$690,000	x	1	-7	0%	=	$0	$690,000	x	0.0%	=	$0	$55	x	0	+	$55	x	0	=	$0	$0
	Bayou Black Tank	$690,000	x	1	-3	0%	=	$0	$690,000	x	0.0%	=	$0	$55	x	0	+	$55	x	0	=	$0	$0
	Bayou Dularge Tank	$690,000	x	1	2	22%	=	$151,800	$690,000	x	33.0%	=	$227,700	$55	x	30	+	$55	x	230	=	$392,150	$771,650
	Benoit Pump Station	$690,000	x	1	2	22%	=	$151,800	$690,000	x	33.0%	=	$227,700	$55	x	30	+	$55	x	230	=	$392,150	$771,650
	Blimp Base Pump Station	$690,000	x	1	1	14%	=	$96,600	$690,000	x	21.0%	=	$144,900	$55	x	23	+	$55	x	134	=	$176,880	$418,380
	Boudreaux Canal Pump Station	$690,000	x	1	2	22%	=	$151,800	$690,000	x	33.0%	=	$227,700	$55	x	30	+	$55	x	230	=	$392,150	$771,650
	Chauvin Tank	$690,000	x	1	3	27%	=	$186,300	$690,000	x	40.5%	=	$279,450	$55	x	30	+	$55	x	365	=	$622,325	$1,088,075
	Cocodrie Tank	$690,000	x	1	0	9%	=	$62,100	$690,000	x	13.5%	=	$93,150	$55	x	15	+	$55	x	70	=	$61,600	$216,850
	Dulac Pump Station	$690,000	x	1	0	9%	=	$62,100	$690,000	x	13.5%	=	$93,150	$55	x	15	+	$55	x	70	=	$61,600	$216,850

Category		Structure Loss							Contents Loss					Structure Use and Function Loss								Structure Loss+Content Loss+Function Loss ($)
	Name/Description of Structure	Structure Replacement Value ($)	x	# Floors	Inundation (ft)	Percent Damage (%)	=	Loss to Structure ($)	Replacement of Contents Value ($)	x	Percent Damage (%)	=	Loss to Contents ($)	Average Daily Operating Budget ($)	x	Functional Downtime	+	Displacement Cost Per Day	x	Displacement Time	=	Stucture Use & Function Cost	
Water, Cont.	Dulac Tank	$690,000	x	1	0	9%	=	$62,100	$690,000	x	13.5%	=	$93,150	$55	x	15	+	$55	x	70	=	$61,600	$216,850
	Dumas Tank	$690,000	x	1	-1	0%	=	$0	$690,000	x	0.0%	=	$0	$55	x	12	+	$55	x	46	=	$32,890	$32,890
	Elliot Jones	$690,000	x	1	2	22%	=	$151,800	$690,000	x	33.0%	=	$227,700	$55	x	30	+	$55	x	230	=	$392,150	$771,650
	Gibson Tank	$690,000	x	1	-1	0%	=	$0	$690,000	x	0.0%	=	$0	$55	x	12	+	$55	x	46	=	$32,890	$32,890
	Grand Caillou Tank	$690,000	x	1	2	22%	=	$151,800	$690,000	x	33.0%	=	$227,700	$55	x	30	+	$55	x	230	=	$392,150	$771,650
	Hanson SG	$690,000	x	1	2	22%	=	$151,800	$690,000	x	33.0%	=	$227,700	$55	x	30	+	$55	x	230	=	$392,150	$771,650
	Houma GS 1	$690,000	x	1	-5	0%	=	$0	$690,000	x	0.0%	=	$0	$55	x	0	+	$55	x	0	=	$0	$0
	Houma GS 2	$690,000	x	1	-2	0%	=	$0	$690,000	x	0.0%	=	$0	$55	x	10	+	$55	x	30	=	$18,150	$18,150
	Houma GS3	$690,000	x	1	-5	0%	=	$0	$690,000	x	0.0%	=	$0	$55	x	0	+	$55	x	0	=	$0	$0
	Houma Plant 3	$690,000	x	1	-8	0%	=	$0	$690,000	x	0.0%	=	$0	$55	x	0	+	$55	x	0	=	$0	$0
	Houma Plant High Service	$690,000	x	1	-4	0%	=	$0	$690,000	x	0.0%	=	$0	$55	x	0	+	$55	x	0	=	$0	$0
	Houma Water Plant	$690,000	x	1	-9	0%	=	$0	$690,000	x	0.0%	=	$0	$55	x	0	+	$55	x	0	=	$0	$0
	Intracoastal RW Pump Station	$690,000	x	1	-7	0%	=	$0	$690,000	x	0.0%	=	$0	$55	x	0	+	$55	x	0	=	$0	$0
	Klondyke Tank	$690,000	x	1	-4	0%	=	$0	$690,000	x	0.0%	=	$0	$55	x	0	+	$55	x	0	=	$0	$0
	Lafort Canal RW PS	$690,000	x	1	2	22%	=	$151,800	$690,000	x	33.0%	=	$227,700	$55	x	30	+	$55	x	230	=	$392,150	$771,650
	Legion Building	$690,000	x	1	-2	0%	=	$0	$690,000	x	0.0%	=	$0	$55	x	10	+	$55	x	30	=	$18,150	$18,150
	Lower Dulac Tank	$690,000	x	1	2	22%			$690,000		33.0%			$55		30		$55		230			
	Main Office	$690,000	x	1	-4	0%			$690,000		0.0%			$55		0		$55		0			
	Minors SG	$690,000	x	1	2	22%			$690,000		33.0%			$55		30		$55		230			
	Montegut Tank	$690,000	x	1	3	27%	=	$186,300	$690,000	x	40.5%	=	$279,450	$55	x	30	+	$55	x	365	=	$622,325	$1,088,075
	Munson PS	$690,000	x	1	-5	0%	=	$0	$690,000	x	0.0%	=	$0	$55	x	0	+	$55	x	0	=	$0	$0
	North Terrebonne Standpipe	$690,000	x	1	-4	0%	=	$0	$690,000	x	0.0%	=	$0	$55	x	0	+	$55	x	0	=	$0	$0
	Pointe-Aux-Chenes Pump Station	$690,000	x	1	0	9%	=	$62,100	$690,000	x	13.5%	=	$93,150	$55	x	15	+	$55	x	70	=	$61,600	$216,850
	Pointe-Aux-Chenes Tank	$690,000	x	1	2	22%	=	$151,800	$690,000	x	33.0%	=	$227,700	$55	x	30	+	$55	x	230	=	$392,150	$771,650
	Presque Isle PS	$690,000	x	1	-6	0%	=	$0	$690,000	x	0.0%	=	$0	$55	x	0	+	$55	x	0	=	$0	$0
	Robinson Canal Pump Station	$690,000	x	1	2	22%	=	$151,800	$690,000	x	33.0%	=	$227,700	$55	x	30	+	$55	x	230	=	$392,150	$771,650
	Robinson Canal Tank	$690,000	x	1	2	22%	=	$151,800	$690,000	x	33.0%	=	$227,700	$55	x	30	+	$55	x	230	=	$392,150	$771,650
	Schriever GS1	$690,000	x	1	2	22%	=	$151,800	$690,000	x	33.0%	=	$227,700	$55	x	30	+	$55	x	230	=	$392,150	$771,650
	Schriever GS2	$690,000	x	1	-5	0%	=	$0	$690,000	x	0.0%	=	$0	$55	x	0	+	$55	x	0	=	$0	$0
	Schriever Plant	$690,000	x	1	2	22%	=	$151,800	$690,000	x	33.0%	=	$227,700	$55	x	30	+	$55	x	230	=	$392,150	$771,650
	Schriever Tank	$690,000	x	1	-9	0%	=	$0	$690,000	x	0.0%	=	$0	$55	x	0	+	$55	x	0	=	$0	$0
	Schriever Water Plant	$690,000	x	1	-7	0%	=	$0	$690,000	x	0.0%	=	$0	$55	x	0	+	$55	x	0	=	$0	$0
	Shell PS	$690,000	x	1	0	9%	=	$62,100	$690,000	x	13.5%	=	$93,150	$55	x	15	+	$55	x	70	=	$61,600	$216,850
	Sludge Press Building	$690,000	x	1	2	22%	=	$151,800	$690,000	x	33.0%	=	$227,700	$55	x	30	+	$55	x	230	=	$392,150	$771,650
	South Terrebonne PS	$690,000	x	1	-3	0%	=	$0	$690,000	x	0.0%	=	$0	$55	x	0	+	$55	x	0	=	$0	$0
	South Terrebonne Standpipe	$690,000	x	1	-3	0%	=	$0	$690,000	x	0.0%	=	$0	$55	x	0	+	$55	x	0	=	$0	$0
	Texaco Master Meter	$690,000	x	1	3	27%	=	$186,300	$690,000	x	40.5%	=	$279,450	$55	x	30	+	$55	x	365	=	$622,325	$1,088,075
	Theriot Tank	$690,000	x	1	1	14%	=	$96,600	$690,000	x	21.0%	=	$144,900	$55	x	23	+	$55	x	134	=	$176,880	$418,380
	Waterproof RW PS	$690,000	x	1	2	22%	=	$151,800	$690,000	x	33.0%	=	$227,700	$55	x	30	+	$55	x	230	=	$392,150	$771,650
	West Gibson Tank	$690,000	x	1	0	9%	=	$62,100	$690,000	x	13.5%	=	$93,150	$55	x	15	+	$55	x	70	=	$61,600	$216,850
	Williams Street PS	$690,000	x	1	1	14%	=	$96,600	$690,000	x	21.0%	=	$144,900	$55	x	23	+	$55	x	134	=	$176,880	$418,380
	Total Structure Value	**$1,206,354,382**					**x**	**$72,221,031**				**Total Contents Loss**	**$1,670,682,087**							**Total Structure Use and Function Loss**		**$80,053,508**	**$1,822,956,626**

Attachment c3-1
Terrebonne Parish List of Projects

The Terrebonne Parish List of Projects are presented on the following seven pages.

Terrebonne Parish Hazard Mitigation Plan Update 2014 List of Projects

Source	No.	Project	Hard/Soft	Eligible	Explanation of Eligibility	Status	Approximate Cost
Terrebonne Parish Comprehensive Master Plan (10/03)							
A	1	Expand Forced Drainage to Flood Prone Areas w/o System in Place (3-7)	Hard	No	New construction is not eligible for HMGP funding		
	2	Feasibility and Practicality of New Shelters (3-8)	Hard	No	Construction of new Shelters is not eligible for HMGP funding		
	3	Flood Proof Essential Community Facilities (Power Plants, Substations, Hospitals) (3-8)	Hard	Potentially	Flood Mitigation is eligible for HMGP funding		
Coastal Wetlands Planning Protection & Restoration Act							
B	1	Whiskey Island Restoration	Hard	No	Coastal/Barrier Island Restoration not eligible for HMGP funding	Completed	
	2	Whiskey Island Back Barrier Marsh Creation	Hard	No	Marsh Creation not eligible for HMGP funding	In Process	
	3	West Lake Boudreaux Shoreline Protection and Marsh Creation	Hard	No	Marsh Creation not eligible for HMGP funding	Completed	
	4	Timbalier Island Planting Demonstration Overview	Hard	No	Planting not eligible for HMGP funding	Completed	
	5	Timbalier Island Dune and Marsh Creation	Hard	No	Marsh Creation not eligible for HMGP funding	Completed	
	6	Thin Mat Floating Marsh Enhancement	Hard	No	Marsh Creation not eligible for HMGP funding	Completed	
	7	Terrebonne Bay Shore Protection Demonstration	Hard	No	Shoreline Protection not eligible for HMGP funding	Completed	
	8	Terrebonne Bay Marsh Creation-Noutishment	Hard	No	Marsh Creation not eligible for HMGP funding	Funding Requested	
	9	South Lake De Cade Freshwater Introduction	Hard	No	Freshwater Introduction not eligible for HMGP funding	Completed	
	10	Ship Shoal: Whiskey West Flank Restoration	Hard	No	Coastal Restoration not eligible for HMGP funding	Obsolete	
	11	Raccoon Island Shoreline Protection/Marsh Creation	Hard	No	Coastal Restoration/Protection not eligible for HMGP funding	Completed	
	12	Raccoon Island Breakwater Demonstration	Hard	No	Coastal Protection not eligible for HMGP funding	Completed	
	13	Point Au Fer Canal Plugs--Saltwater Intrusion	Hard	No	Reduction/Elimination of Saltwater Intrusion is not eligible for HMGP funding	Completed	
	14	Penchant Bases Natural Resources Plan--Increment 1	Hard	No	Coastal Restoration/Protection not eligible for HMGP funding	Completed	
	15	Nutria Harvest for Wetland Restoration Demonstration	Hard	No	Nutria Harvesting not eligible for HMGP funding	Completed	
	16	North Lake Menchant Landbridge Restoration	Hard	No	Marsh Creation not eligible for HMGP funding	Completed	
	17	North Lake Boudreaux Basin Freshwater Introduction and Hydrologic Management	Hard	No	Hydrologic Restoration not eligible for HMGP funds	In Process	
	18	New Cut Dune and Marsh Creation	Hard	No	Marsh Creation not eligible for HMGP funding	Completed	
	19	Mandalay Bank Protection Demonstration	Hard	No	Coastal Protection not eligible for HMGP funding	Completed	
	20	Madison Bay Marsh Creation and Terracing	Hard	No	Marsh Creation not eligible for HMGP funding	Funding Requested	
	21	Lower Bayou LaCache Hydrologic Restoration	Hard	No	Hydrologic Restoration not eligible for HMGP funds	Obsolete	
	22	Lake Chapeau Sediment Input and Hydrologic Restoration	Hard	No	Hydrologic Restoration not eligible for HMGP funds	Completed	
	23	Isles Dernieres Restoration Trinity Island	Hard	No	Coastal Restoration not eligible for HMGP funds	Completed	
	24	Isles Dernieres Restoration East Island	Hard	No	Coastal Restoration not eligible for HMGP funding	Completed	
	25	GIWW Bank Restoration of Critical Areas in Terrebonne Parish	Hard	No	Bank Stabilization not eligible for HMGP funding	In Process	
	26	Floating Marsh Creation	Hard	No	Marsh Creation not eligible for HMGP funding	Completed	
	27	Falgout Canal Planting Demonstration	Hard	No	Planting not eligible for HMGP funding	Completed	
	28	Coastwide Reference Monitoring Systems	Hard	No	Coastal Monitoring Systems not eligible for HMGP funding	Completed	
	29	Coastwide Nutria Control Program	Hard	No	Nutria Control not eligible for HMGP funding	Completed	
	30	Central Terrebonne Freshwater Enhancement	Hard	No	Freshwater Enhancement not eligible for HMGP funding	In Process	
	31	Brady Canal Hydrologic Restoration	Hard	No	Hydrologic Restoration not eligible for HMGP funds	Completed	
Coastal Impact Assistance Program							
C	1	Falgout Canal Freshwater Enhancement Phase I	Hard	No	Freshwater Enhancement not eligible for HMGP funding	In Process	
	2	Beach and Back Barrier Marsh Restoration	Hard	No	Marsh Restoration not eligible for HMGP funding	Obsolete	
	3	Closure of Breaches of GIWW	Hard	No	Bank Stabilization (for conservation) not eligible for HMGP funding	Obsolete	
	4	North Lost Lake Marsh Creation/Enhancement	Hard	No	Marsh Creation/Enhancement not eligible for HMGP funding	Funding Requested	
	5	Shoreline Protection on Houma Navigational Canal	Hard	No	Shoreline Protection not eligible for HMGP funding	Funding Requested	
	6	Houma Navigational Canal Lock	Hard	No	New construction not eligible for HMGP funding	Partial	
	7	Mississippi River Long Distance Sediment Pipeline	Hard	No	Sediment Diversion not eligible for HMGP funding	Partial	
Coastal Protection and Restoration Authority							
D	1	Morganza to the Gulf	Hard	No	New construction not eligible for HMGP funding	Funding Requested	
	2	Gibson to Houma Hurricane Protection	Hard	No	New construction not eligible for HMGP funding	Funding Requested	
	3	Houma and Vicinity Hurricane Protection	Hard	No	New construction not eligible for HMGP funding	Funding Requested	
	4	Multipurpose Operation of the Houma Navigational Canal	Hard	No	New construction not eligible for HMGP funding	Funding Requested	
	5	Marsh Restoration Using Dredged Material in Terrebonne Basin	Hard	No	Marsh Creation not eligible for HMGP funding	Funding Requested	
	6	Chacahoula Basin Plan	Hard	No	Coastal Protection not eligible for HMGP funding	Funding Requested	
	7	Freshwater Introduction via Blue Hammock Bayou	Hard	No	Freshwater Introduction not eligible for HMGP funding	Low Priority	
	8	Ridge Habitat Restoration in Terrebonne Basin	Hard	No	Habitat Restoration not Eligible for HMGP funding	Funding Requested	
	9	Barrier Shoreline Restoration: Terrebonne Basin	Hard	No	Shoreline Restoration not eligible for HMGP funding	Funding Requested	
ESF-14 (Terrebonne Parish Long Term Recovery Plan)							
E	1	Implement Capital Improvement Program to Enhance Inner Ring of Tidal Protection/Forced Drainage Levees	Hard	No	New construction not eligible for HMGP funding		
	2	Identification of Donor and Placement Sites for Sediment Deposition	Soft	No	Soft Projects (Identification of sites) not eligible for HMGP funding		
	3	Review of Louisiana Coastal Zone Management Program	Soft	No	Soft Projects (review of program) not eligible for HMGP funding		
	4	Educate the Public in Disaster Awareness	Soft	No	Soft Projects (education) not eligible for HMGP funding	In Process	
	5	Construct Transportation Improvements Designed to Increase the Economic Viability of Terrebonne Parish	Hard	No	Transportation improvements not eligible for HMGP funding	In Process	
	6	Secure Congressional Authorization and Construct the Morganza to the Gulf Hurricane Protection System and Enhance and Protect Critical Waterways in the Parish.	Soft/Hard	No	New construction is not eligible for HMGP funding		
	7	Expand and Improve Parish wide Sewerage Facilities	Hard	No	New construction for Economic Development is not eligible for HMGP funding		

Source	No.	Project	Hard/Soft	Eligible	Explanation of Eligibility	Status	Approximate Cost
ESF-14 (Terrebonne Parish Long Term Recovery Plan); Cont.							
E	8	Develop a Detailed Business Recruitment and Retention Plan	Soft	No	Soft Projects (plans) are not eligible for HMGP funding		
	9	Reduce the Potential for Future Flood Losses through the Terrebonne Parish Flood Hazard Mitigation Program	Hard	Potentially	Removing, elevation, or flood proofing of repetitive loss structures is eligible for HMGP funding	In Process	
	10	Increase Affordable Housing throughout the Parish	Hard	No	Increasing the Number of Housing is not eligible for HMGP funding	In Process	
	11	North-South Hurricane Evacuation Route	Hard	No	Evacuation Route Construction is not eligible for HMGP funding		
	12	Plan, Implement, and Construct Parish wide Sewerage	Hard	No	Sewerage planning, implementation and construction is not eligible for HMGP funding	Redundant?	
	13	Construct Communications Infrastructure and Provide Primary Responders with Proper Equipment	Hard	Potentially	Early Warning Systems eligible for HMGP funding under 5% initiative		
	14	Update Parish Emergency Operations Plan	Soft	No	Soft Projects (plans) are not eligible for HMGP funding	In Process	
	15	Construct Emergency Operations Center	Hard	No	Construction of EOC's not eligible for HMGP funding	In Process	
Terrebonne Parish Hazard Mitigation Plan (2004)							
F	1	Flood Proof Terrebonne Parish EOC, Terrebonne Parish General Medical Center, Chabert Medical Center, The TPCG Generating Station and the 2 Consolidated Waterworks Treatment Plants	Hard	Potentially	Floodproofing is eligible for HMGP funding	Remove EOC from List	
	2	Develop Master Drainage Plan	Soft	No	Soft Projects (plans) are not eligible for HMGP funding		
	3	Generators--Central Fire Department Station, Montegut Middle School, Houma Police Department, Terrebonne Parish Civic Center, Terrebonne Parish Public Works building	5%	Potentially	Eligible under 5% initiative.	Remove EOC from List. Central Fire, HPD, Public Works building	
	4	Promote Purchase of Flood Insurance	Soft	No	Soft Projects (public awareness) are not eligible for HMGP funding	In Process	
	5	Increase Public Awareness of Hazards and Hazard Areas	Soft	No	Soft Projects (public awareness) are not eligible for HMGP funding	In Process	
	6	Sponsor a "Multi-Hazard Awareness" Week	Soft	No	Soft Projects (public awareness) are not eligible for HMGP funding		
	7	Pursue elevation/acquisition/flood proofing projects and structural solutions to flooding.	Hard	Potentially	Elevation/Acquisition/Flood proofing Projects are all eligible for HMGP funding	In Process	
	8	Investigate and implement localized interior drainage projects at Lower Bayouside Drive, Savanne Road, Ringo Cocke to Hudson Canal, LA 311 at Hollywood Road, Parish Road 15 at Mandalay, and Susie Canal at Ashland South, which are repetitive loss areas, and reduce its flood potential.	Hard	Potentially	Drainage Projects are eligible for HMGP funding, however, project descriptions must be available to scope		
	9	Review the existing floodplain ordinance and evaluate ways to improve the Parish's "Community Rating System (CRS) rating to reduce the flood insurance premium. Choose from the variety of methods and projects available that can be implemented to improve the CRS rating.	Soft	No	Soft Projects (evaluation) are not eligible for HMGP funding	In Process	
	10	Adopt additional residential and commercial building regulations, which include stricter building standards, Land Use Regulations throughout the Parish consistent with to those that exist within the Urban Services District of Houma and incorporate dry flood proofing techniques. When the International Building Codes become mandatory, they will supersede the existing codes.	Soft	No	Soft Projects (regulations) are not eligible for HMGP funding		
	11	Develop additional subdivision guidelines that would help	Soft	No	Soft Projects (guidelines) are not eligible for		
Terrebonne Parish 1603 DR 2008 Letter of Intent							
G	1	Automatic Bar Screen Cleaners (Pump Stations -- D-58, D-03, D-69, D-22, D-28, D-07, D-21)	Hard	Potentially	Drainage Improvements are eligible for HMGP funds	Priority Redundant (D-69, D-03, D-07 have been completed)	$ 2,000,000
	2	Elevation -- Residential	Hard	Potentially	Elevations are eligible for HMGP funding	In Process	
	3	EOC Hardening	Hard	Potentially	Wind Hardening is eligible for HMGP funding	In Process	
	4	Forced Drainage 1-1B Channel Improvement (Maintenance and Dredging)	Hard	No	Maintenance is not eligible for HMGP funding		
Terrebonne Parish Feasibility Study for Levee Enhancement Projects							
H	1	Industrial Blvd Gap -- 2.1 Miles to +8'	Hard	No	Levee improvements are not eligible for HMGP funding		
	2	Ashland/Woodlawn -- 2.9 Miles to +8'	Hard	No	Levee improvements are not eligible for HMGP funding	In Process	
	3	North of Orange Street Project in Grand Caillou -- 2.5 Miles to +8'	Hard	No	Levee improvements are not eligible for HMGP funding	Priority	
	4	Brady Road Levee in Dularge -- .25 miles to Falgout Canal to +8'	Hard	No	Levee improvements are not eligible for HMGP funding	Priority	
	5	Ashland North -- 1.5 Miles to +8'	Hard	No	Levee improvements are not eligible for HMGP funding	Funded	
	6	Lower Point Aux Chene -- 3.9 Miles to +8'	Hard	No	Levee improvements are not eligible for HMGP funding	Priority	
	7	Intracoastal Canal Near Palm Street -- 2.3 Miles to +6.5'	Hard	No	Levee improvements are not eligible for HMGP funding	Completed	
	8	Barrier Plan (Big Bayou Black/Gibson) 1/3 of project -- 8.4 Miles to +6.5'	Hard	No	Levee improvements are not eligible for HMGP funding	Priority	
	9	Bayou Point Aux Chene Sluice Gate to +10'	Hard	No	Levee improvements are not eligible for HMGP funding	High Priority	
	10	Bayou Grand Caillou Water Control Structure to +10'	Hard	No	Levee improvements are not eligible for HMGP funding	High Priority	
	11	Falgout Canal Water Control Structure to +10'	Hard	No	Levee improvements are not eligible for HMGP funding	In Process/High Priority	
	12	Cane Break to Ashland Levee -- 3.4 Miles to +8'	Hard	No	Levee improvements are not eligible for HMGP funding	Priority	
	13	West Grand Caillou Levee -- 4.6 Miles to +8'	Hard	No	Levee improvements are not eligible for HMGP funding		
	14	East Theriot -- 9 Miles to +8'	Hard	No	Levee improvements are not eligible for HMGP funding		
	15	Upper Dularge East Levee -- 5.2 Miles to +8'	Hard	No	Levee improvements are not eligible for HMGP funding	Funded	
	16	Barrier Plan (Big Bayou Black/Gibson) 1/3 of project -- 8.4 Miles to +6.5'	Hard	No	Levee improvements are not eligible for HMGP funding	redundant?	
	17	Susie Canal Improvements in Grand Caillou to +10'	Hard	No	Levee improvements are not eligible for HMGP funding	In Process	
	18	North of Orange Street to +10'	Hard	No	Levee improvements are not eligible for HMGP funding		
	19	Brady Road Levee in Dularge -- 1 mile to +10'	Hard	No	Levee improvements are not eligible for HMGP funding	In Process	
	20	Cane Break to Ashland Levee to +10'	Hard	No	Levee improvements are not eligible for HMGP funding	In Process	
	21	West Grand Caillou Levee to +10'	Hard	No	Levee improvements are not eligible for HMGP funding		
	22	East Theriot to +10'	Hard	No	Levee improvements are not eligible for HMGP funding		
	23	Upper Dularge East Levee to +10'	Hard	No	Levee improvements are not eligible for HMGP funding	In Process	
	24	Lower Point Aux Chene -- .85 Miles to +10'	Hard	No	Levee improvements are not eligible for HMGP funding		
	25	Extension Orange Street Projects in Grand Caillou -- 2.0 Miles to +10'	Hard	No	Levee improvements are not eligible for HMGP funding		
	26	West Ward 7 -- 15.9 Miles to +10'	Hard	No	Levee improvements are not eligible for HMGP funding		
	27	Barrier Plan (Big Bayou Black/Gibson) 1/3 of project -- 8.4 Miles to +6.5'	Hard	No	Levee improvements are not eligible for HMGP funding	Redundant?	

Source	No.	Project	Hard/Soft	Eligible	Explanation of Eligibility	Status	Approximate Cost
				Projects 2010 Update			
	1	Blackstart Capacity -- Houma Power Plant	5%	Potentially	Blackstart Capacity retrofitting is potentially eligible for 5% initiative HMGP funding		
	2	Communications -- Conversion of SCADA system from Phone to Radio (Airbase Jr., Applied Hydraulics, Ashland North 1, Ashland North 2, Ashland South, Bobtown, Bourg Heights, Central Heights, Clinton St. Package Plant, Dulac, Edgewood, Frank, Grmoco, Green Acres 1, Green Acres 2, Indian Ridge, Jail, James, Lafayette Woods, Mary Hughes, Moffet/Saia, Orange/Marjorie, Patriot Point, Presque Isle 1, Presque Isle 2, Riley, Rounds, Sandcastle, Sarah, Smithridge 1, Smithridge 2, Thunderbird, Village East)	5%	Potentially	Communications Upgrade is potentially eligible for 5% initiative HMGP funding		
	3	Communications -- Hazard Warning System (Gauges Strategically Placed, N-Star)	5%	Potentially	Hazard Warning Systems are eligible for HMGP 5% initiative Funding		
	4	Communications (Fire, Law Enforcement, Parish, Other) Radios 580 Portables, 372 Mobiles	5%	No	Hand held communications are not eligible for 5% initiative funding		
	5	Communications for Water Treatment -- 41 Mobiles	5%	No	Hand held communications are not eligible for 5% initiative funding		
	6	Communications Tower (Theriot, LA)	Hard	No	New construction is not eligible for HMGP funding		
	7	Connect Station to emergency generator -- Munson PS	Hard	Potentially	Connection of Generator is potentially eligible for HMGP funding		
	8	Drainage Improvement -- (Chabert Medical Center Levee/Houma Industrial Park) Build Levee from Thompson Road to Industrial Pump Station	Hard	No	New construction is not eligible for HMGP funding	High Priority	$ 3,000,000
	9	Drainage Improvement -- Ann Carroll, Jean Street, Duet Street, and Grace Street (Upgrade Culvert size to drain water from middle of streets)	Hard	Potentially	Drainage Improvements are eligible for HMGP funding	In Process/High Priority	$ 2,500,000
	10	Drainage Improvement -- Ashland North D-60 Tideflex valves on discharge pipes	Hard	Potentially	Drainage Improvements are eligible for HMGP funding	Completed	
	11	Drainage Improvement -- Bayou Grand Caillou (D-9 South the Landfill Road, Widen and Deepen Channel)	Hard	Potentially	Drainage Improvements are eligible for HMGP funding	Low Priority	$ 2,000,000
	12	Drainage Improvement -- Bayou Grand Caillou (From Oaklawn School to D-9 Pump Station, Widen and Deepen Channel)	Hard	Potentially	Drainage Improvements are eligible for HMGP funding	High Priority	$ 2,000,000
	13	Drainage Improvement -- Bayou Lacache Pump Canal (Widen and Deepen Canal from Lacache Estate to Pump Station)	Hard	Potentially	Drainage Improvements are eligible for HMGP funding	In Process/Priority	$ 5,000,000
	14	Drainage Improvement -- Bayou Lacarpe (Widen Channel from Tunnel Blvd to pump station and upgrade bar screen cleaner	Hard	Potentially	Drainage Improvements are eligible for HMGP funding	In Process/High Priority	$ 3,000,000
	15	Drainage Improvement -- Bellaire Drive (Increase Culvert Sizes and Slope Ditches)	Hard	Potentially	Drainage Improvements are eligible for HMGP funding		$ 1,000,000
	16	Drainage Improvement -- Benoit Crossing (Remove Portable Pump and place permanent pump)	Hard	No	HMGP will not buy new equipment	Low Priority	$ 1,000,000
	17	Drainage Improvement -- Bonanza Pump Station D-27 Tideflex valves on discharge pipes	Hard	Potentially	Drainage Improvements are eligible for HMGP funding	Funded by HMGP	
	18	Drainage Improvement -- Coteau 1-1B Bar Screen Cleaner	Hard	Potentially	Drainage Improvements are eligible for HMGP funding	Completed	
	19	Drainage Improvement -- Crochetville Road Storm Water Diversion canal with flap gates	Hard	Potentially	Drainage Improvements are eligible for HMGP funding	Low Priority	$ 1,000,000
	20	Drainage Improvement -- D-07 Smithridge Pump Station Bar Screen Cleaner	Hard	Potentially	Drainage Improvements are eligible for HMGP funding	Completed	
	21	Drainage Improvement -- D-13 Industrial Blvd. Motorized screw gates	Hard	Potentially	Drainage Improvements are eligible for HMGP funding	Low Priority	$ 50,000
	22	Drainage Improvement -- D-20 Schriever Pump Station Bar Screen Cleaner	Hard	Potentially	Drainage Improvements are eligible for HMGP funding	Priority	$ 750,000
/	23	Drainage Improvement -- D-3 Upper Montegut Bar Screen Cleaner	Hard	Potentially	Drainage Improvements are eligible for HMGP funding	Completed	
	24	Drainage Improvement -- Evelyn Lateral Between (Subsurface drainage in lateral ditch from Frank street to Perky street)	Hard	Potentially	Drainage Improvements are eligible for HMGP funding	Low Priority	$ 800,000
	25	Drainage Improvement -- Highway 24 in Gray	Hard	Potentially	DOTD would have jurisdiction for this drainage project	Obsolete	
	26	Drainage Improvement -- Highway 315 in Dularge	Hard	Potentially	DOTD would have jurisdiction for this drainage project	Priority	$ 2,000,000
	27	Drainage Improvement -- Industrial Pump D-13 Trash Screen and Bar Screen Cleaner	Hard	Potentially	Drainage Improvements are eligible for HMGP funding	Priority	$ 1,000,000
	28	Drainage Improvement -- Island Road (Stabilize roadway shoulders and embankment)	Hard	Potentially	Stabilization implies maintenance issues	Funded and Completed	
	29	Drainage Improvement -- Isle of Cuba Transfer (Off-site fuel storage -- gas and diesel)	Hard	No	New offsite storage -- HMGP will not buy equipment	Obsolete	
	30	Drainage Improvement -- LA 56 in Chauvin	Hard	Potentially	DOTD would have jurisdiction for this drainage project		
	31	Drainage Improvement -- Lower Montegut D-2 Tideflex Valves on discharge pipes	Hard	Potentially	Drainage Improvements are eligible for HMGP funding	Completed	
	32	Drainage Improvement -- Martin Luther King Blvd (Increase Culvert Size in pump canal under highway in bonanza system)	Hard	Potentially	Drainage Improvements are eligible for HMGP funding	Priority	$ 3,000,000
	33	Drainage Improvement -- Michael Street, Buquet Street, and Daigle Street (Increase Culvert size to drain streets during heavy rain fall)	Hard	Potentially	Drainage Improvements are eligible for HMGP funding	CDBG Funded and Completed	
	34	Drainage Improvement -- Oak Forest Street (Increase in Culvert Sizes and Pump Station)	Hard	Potentially	Drainage Improvements are eligible for HMGP funding	Low Priority	$ 1,000,000
	35	Drainage Improvement -- Old Spanish Trail 6-1B (Place area under Force Drainage to Stop Backwater Flooding)	Hard	No	New construction not eligible for HMGP funding	Priority	
	36	Drainage Improvement -- Old Spanish Trail 6-1B (Put Screw Gates on Culvert Crossings)	Hard	Potentially	Drainage Improvements are eligible for HMGP funding	Priority	$ 1,000,000
	37	Drainage Improvement -- Pump Station Telemetry	Hard	5%	Upgrade to Telemetry potentially eligible for 5% funding	High Priority	$ 5,000,000
	38	Drainage Improvement -- Royce Street (Increase culvert size to stop rainfall flooding)	Hard	Potentially	Drainage Improvements are eligible for HMGP funding	Completed	
	39	Drainage Improvement -- Savanne Road to Summerfield (Create a force drainage area to stop backwater and storm events flooding)	Hard	No	New construction not eligible for HMGP funding	High Priority	$ 6,000,000
	40	Drainage Improvement -- South Ellendale Estates Lateral (Dig and possible widen lateral from subdivision to Hanson Canal)	Hard	Potentially	Drainage Improvements are eligible for HMGP funding	Obsolete	
	41	Drainage Improvement -- Widen Jeannie Canal	Hard	Potentially	Drainage Improvements are eligible for HMGP funding	Low Priority	
	42	Drainage Improvement -- Woodlawn Ranch Pump Canal	Hard	Potentially	Drainage Improvements are eligible for HMGP	Completed	
	43	Drainage Study -- Airport Commission	Soft	No	Studies are not eligible for HMGP funding	Low Priority	
	44	Drainage Project -- Port Commission			Does not have enough information	Low Priority	
	45	Dry Floodproof RL Structure Next to Robinson Canal (Meeting #3)	Hard	Potentially	Floodproofing is eligible for HMGP funding		
	46	Dry Floodproofing -- Infiltration Reduction of Underground Wastewater Collection System	Hard	Potentially	Floodproofing is eligible for HMGP funding		
	47	Elevation -- Bayou Dularge Tank building and chlorination equipment	Hard	Potentially	Elevation is an eligible HMGP project		
	48	Elevation -- Fire Station (raise 2', history of flooding, 75'x75' Slab) (1466 Hwy 665)	Hard	Potentially	Elevation is an eligible HMGP project		
	49	Elevation -- Fire Station in Chauvin (6668 Highway 56)	Hard	Potentially	Elevation is an eligible HMGP project		
	50	Elevation -- Generator for Riley Drive Lift Station	Hard	Potentially	Elevation is an eligible HMGP project	Completed	
	51	Elevation -- Grand Caillou Tank building	Hard	Potentially	Elevation is an eligible HMGP project		
	52	Elevation -- Industrial Blvd from Van Ave to Pump Station	Hard	Potentially	Elevation is an eligible HMGP project		
	53	Elevation -- Leachate Removal System	Hard	Potentially	Elevation is an eligible HMGP project		

Source	No.	Project	Hard/Soft	Eligible	Explanation of Eligibility	Status	Approximate Cost
		Projects 2010 Update; Cont.					
	54	Elevation -- Lift Stations with Self Priming Pumps (Bourg Heights, Edgewood, Ashland North, Ashland North II, Ashland South, Woodlawn Ranch, Saia, Prospect, Carriage Cove, Green Acres I, Green Acres II, Lafayette Woods, Lorraine Park, Presque Isle, Presque Isle II, Chabert Medical Center, Service Center, Smithridge I, Smithridge II, South Terrebonne Estates, Riley Drive)	Hard	Potentially	Elevation is an eligible HMGP project	Completed	
	55	Elevation -- Lift Stations with Submersible Pumps (Bobtown, Dulac, Orange Street, Airbase Jr., Patriot Point, Rounds Road, Applied Hydraulics, Gemoco, Indian Ridge, James Road, Sandcastle, Thunderbird Road)	Hard	Potentially	Elevation is an eligible HMGP project	Completed	
	56	Elevation -- Lower Dulac Tank building and chlorination equipment	Hard	Potentially	Elevation is an eligible HMGP project		
	57	Elevation -- Montegut Station (100'x75')	Hard	Potentially	Elevation is an eligible HMGP project		
	58	Orange Street Wastewater Plan Controls	Hard	Potentially			
	59	Elevation -- Orange Street Wastewater Plant Controls	Hard	Potentially	Elevation is an eligible HMGP project	Completed	
	60	Elevation -- Point Aux Chene Pump Station building and electrical pump, regulating valve and meter	Hard	Potentially	Elevation is an eligible HMGP project		
	61	Elevation -- Robinson Canal P.S. Building, electrical pump, regulating valve and meter	Hard	Potentially	Elevation is an eligible HMGP project		
	62	Elevation -- Scale	Hard	Potentially	Elevation is an eligible HMGP project		
	63	Elevation -- South Terrebonne Pump Station building and pump	Hard	Potentially	Elevation is an eligible HMGP project		
	64	Elevation -- Terrebonne General Medical Center Main Plant Electrical Switch Gear, Boilers, and Chillers ($2,750,000)	Hard	Potentially	Elevation is an eligible HMGP project	? Completed by TGMC?	
	65	Elevation -- Texaco Master Meter Building, regulating valve and meter	Hard	Potentially	Elevation is an eligible HMGP project		
	66	Elevation -- West Gibson Tank building and chlorination equipment	Hard	Potentially	Elevation is an eligible HMGP project		
	67	Elevation of Local Evacuation Route -- 1 Mile Section of LA 56 in Chauvin, LA (Ward 7 Evacuation Routes)	Hard	Potentially	Elevation is an eligible HMGP project		
	68	Elevation of Local Evacuation Route -- 1.5 Mile Section of LA 315 near the Dularge Bridge (Evacuation Route for Bayou Dularge and Crozier, Floods in a strong south wind)	Hard	Potentially	Elevation is an eligible HMGP project		
	69	Elevation of Pump Station Roads -- D-19, D-12, and D-5 Pumps	Hard	Potentially	Elevation of locally owned roads is eligible for HMGP funding	Low Priority	
	70	Elevation to ABFE -- D-01 Gear Drives, Motors, and Controls	Hard	Potentially	Elevation is an eligible HMGP project	High Priority	
	71	Elevation to ABFE -- D-02 Gear Drives, Motors, and Controls	Hard	Potentially	Elevation is an eligible HMGP project	High Priority	
	72	Elevation to ABFE -- D-03 Gear Drives, Motors, and Controls	Hard	Potentially	Elevation is an eligible HMGP project	High Priority	
	73	Elevation to ABFE -- D-04 Gear Drives, Motors, and Controls	Hard	Potentially	Elevation is an eligible HMGP project	High Priority	
	74	Elevation to ABFE -- D-06 Gear Drives, Motors, and Controls	Hard	Potentially	Elevation is an eligible HMGP project	High Priority	
	75	Elevation to ABFE -- D-15 Gear Drives, Motors, and Controls	Hard	Potentially	Elevation is an eligible HMGP project	High Priority	
	76	Elevation to ABFE -- D-21 Gear Drives, Motors, and Controls	Hard	Potentially	Elevation is an eligible HMGP project	High Priority	
	77	Elevation to ABFE -- D-36 Gear Drives, Motors, and Controls	Hard	Potentially	Elevation is an eligible HMGP project	High Priority	
	78	Elevation to ABFE -- D-37 Gear Drives, Motors, and Controls	Hard	Potentially	Elevation is an eligible HMGP project	High Priority	
	79	Elevation to ABFE -- D-40 Gear Drives, Motors, and Controls	Hard	Potentially	Elevation is an eligible HMGP project	High Priority	
/	80	Elevation to ABFE -- D-42 Gear Drives, Motors, and Controls	Hard	Potentially	Elevation is an eligible HMGP project	High Priority	
	81	Elevation to ABFE -- D-43 Gear Drives, Motors, and Controls	Hard	Potentially	Elevation is an eligible HMGP project	High Priority	
	82	Elevation to ABFE -- D-44 Gear Drives, Motors, and Controls	Hard	Potentially	Elevation is an eligible HMGP project	High Priority	
	83	Elevation to ABFE -- D-46 Gear Drives, Motors, and Controls	Hard	Potentially	Elevation is an eligible HMGP project	High Priority	
	84	Elevation to ABFE -- D-47 Gear Drives, Motors, and Controls	Hard	Potentially	Elevation is an eligible HMGP project	High Priority	
	85	Elevation to ABFE -- D-48 Gear Drives, Motors, and Controls	Hard	Potentially	Elevation is an eligible HMGP project	High Priority	
	86	Elevation to ABFE -- D-49 Gear Drives, Motors, and Controls	Hard	Potentially	Elevation is an eligible HMGP project	High Priority	
	87	Elevation to ABFE -- D-50 Gear Drives, Motors, and Controls	Hard	Potentially	Elevation is an eligible HMGP project	High Priority	
	88	Elevation to ABFE -- D-51 Gear Drives, Motors, and Controls	Hard	Potentially	Elevation is an eligible HMGP project	High Priority	
	89	Elevation to ABFE -- D-53 Gear Drives, Motors, and Controls	Hard	Potentially	Elevation is an eligible HMGP project	High Priority	
	90	Elevation to ABFE -- D-54 Gear Drives, Motors, and Controls	Hard	Potentially	Elevation is an eligible HMGP project	High Priority	
	91	Elevation to ABFE -- D-56 Gear Drives, Motors, and Controls	Hard	Potentially	Elevation is an eligible HMGP project	High Priority	
	92	Elevation to ABFE -- D-59 Gear Drives, Motors, and Controls	Hard	Potentially	Elevation is an eligible HMGP project	High Priority	
	93	Elevation to ABFE -- D-60 Gear Drives, Motors, and Controls	Hard	Potentially	Elevation is an eligible HMGP project	High Priority	$ 3,240,000
	94	Emergency Preparedness -- Creation of alternative staging area	Soft	No	Emergency Preparedness not eligible for HMGP funding	Remove	
	95	Emergency Preparedness -- Message Boards	5%	No	Emergency Preparedness not eligible for HMGP funding	In Process	
	96	Emergency Preparedness -- Military Showers	Soft	No	Emergency Preparedness not eligible for HMGP funding	Remove -- Under Contract	
	97	Emergency Preparedness -- Nursing Home Evacuation Coordination/Plan	Soft	No	Emergency Preparedness not eligible for HMGP funding	In Process (Remove as not TPCG Responsibility)	
	98	Emergency Preparedness -- Small Power Radio Station for Hazard Alert	5%	No	Emergency Preparedness not eligible for HMGP funding	Remove	
	99	Floodproof -- Terrebonne Parish General Medical Center, The TPCG Generating Station, and the 2 Consolidated Waterworks Treatment Plants	Hard	Yes	Floodproofing is eligible for HMGP funding	Redundant?	
	100	Flood Protection -- Sea wall at Public Works Yard Grand Caillou Road	Hard	No	New construction is not eligible for HMGP funding	Completed	
	101	Flood Wall and Pump Installation for Terrebonne General	Hard	No	New construction is not eligible for HMGP funding		
	102	Four P25 Motorola Communications Consoles to be located within the Terrebonne 911 Cat. 5 Hurricane resistant facility located at 110 Capital Blvd. to be used for Interoperable Communications between all 15 Terrebonne Fire Districts (13 Fire Departments), Law Enforcement Agencies, OEP, Utilities & Parish Departments (cost $138,000)	5%	No	Communications Consoles are not eligible for 5% initiative HMGP funding		
	103	Generator -- 100KW for W. Woodlawn Station	5%	Potentially	Generators are eligible for 5% initiative funding	Priority	
	104	Generator -- 200KW for South Wastewater Treatment Plant	5%	Potentially	Generators are eligible for 5% initiative funding	Completed	
	105	Generator -- City Hall (with switching capacity)	5%	Potentially	Generators are eligible for 5% initiative funding		
	106	Generator -- Coteau Fire Station (Natural Gas, includes change over switch to ensure response to emergency calls)	5%	Potentially	Generators are eligible for 5% initiative funding		
	107	Generator -- Gov't Towers	5%	Potentially	Generators are eligible for 5% initiative funding		

Source	No.	Project	Hard/Soft	Eligible	Explanation of Eligibility	Status	Approximate Cost
				Projects 2010 Update Cont.			
	108	Generator -- Houma Fire Department, Central Station (50KW)	5%	Potentially	Generators are eligible for 5% initiative funding		
	109	Generator -- Houma Police Department Building (Cummings model GFGA 500 KW 120/208 Volt 3 phase, 60 hertz, 1800RPM NG set)	5%	Potentially	Generators are eligible for 5% initiative funding		
	110	Generator -- Lift Stations Receiving Effluent from Hospitals, Chabert Medical Center (100 KW)	5%	Potentially	Generators are eligible for 5% initiative funding	same as 106	
	111	Generator -- Lift Stations Receiving Effluent from Hospitals, Terrebonne General Medical Center (100 KW)	5%	Potentially	Generators are eligible for 5% initiative funding	same as 107	
	112	Generator -- Major Lift Stations, Douglas (50 KW)	5%	Potentially	Generators are eligible for 5% initiative funding		
	113	Generator -- Major Lift Stations, Highland Drive (150 KW)	5%	Potentially	Generators are eligible for 5% initiative funding	Budgeted for 2014	
	114	Generator -- Major Lift Stations, Mire (75 KW)	5%	Potentially	Generators are eligible for 5% initiative funding		
	115	Generator -- Major Lift Stations, Westside (50 KW)	5%	Potentially	Generators are eligible for 5% initiative funding		
	116	Generator -- Major Lift Stations, Westview (100 KW)	5%	Potentially	Generators are eligible for 5% initiative funding		
	117	Generator -- Montegut, Point Aux Chene Fire Stations (need 40-50 KW -- $15,000)	5%	Potentially	Generators are eligible for 5% initiative funding		
	118	Generator -- North Terrebonne Treatment Plant	5%	Potentially	Generators are eligible for 5% initiative funding	Completed	
	119	Generator -- OEP 911 (60KW)	5%	Potentially	Generators are eligible for 5% initiative funding	Completed	
	120	Generator -- Pollution Control Portable Unit Trailer Mounted for 10 treatment plants (50 KW)	5%	Potentially	Generators are eligible for 5% initiative funding	In Process - Received 6 trailer mounted 60 KW unites	
	121	Generator -- Pollution Control, S. Treatment Plant Effluent Lift Station (250 KW)	5%	Potentially	Generators are eligible for 5% initiative funding	Completed	
	122	Generator -- Pollution Control, S. Treatment Plant Perimeter Drainage Pump Station (100 KW)	5%	Potentially	Generators are eligible for 5% initiative funding		
	123	Generator -- Port Commission Forced Drainage (50 KW)	5%	Potentially	Generators are eligible for 5% initiative funding		
	124	Generator -- Public Works -- Portable Generator for Bridges (80 KW)	5%	Potentially	Generators are eligible for 5% initiative funding	Completed	
	125	Generator -- Public Works -- Portable Trailer Unit Mounted for 6 Treatment Plants (56KW)	5%	Potentially	Generators are eligible for 5% initiative funding	Completed	
	126	Generator -- Public Works North Campus	105%	Potentially	Generators are eligible for 5% initiative funding	Priority	$ 500,000
	127	Generator -- Public Works Service Center Yard (400KW)	5%	Potentially	Generators are eligible for 5% initiative funding	Completed	
	128	Generator -- Public Works, Buquet Bridge (75 KW 120/240 Volt)	5%	Potentially	Generators are eligible for 5% initiative funding	Completed	
	129	Generator -- Public Works, Klondyke Bridge (75 KW 120/240 Volt)	5%	Potentially	Generators are eligible for 5% initiative funding	Completed	
	130	Generator -- Public Works, Service Center Yard (400 KW 208/480 Volt)	5%	Potentially	Generators are eligible for 5% initiative funding	Redundant? Yes	
	131	Generators -- Lift Stations Receiving Effluent from Hospitals, Valhi II (125 KW)	5%	Potentially	Generators are eligible for 5% initiative funding		
	132	Infiltration Reduction of Underground Wastewater System (Testing needed for Locations)	Hard	No	Maintenance is not eligible for HMGP funding	some completed, more to test	
	133	Modification to Village East Lift Station (Conversion from Dry Pit to Submersible Station)	Hard	No	HMGP will not buy new equipment	Completed	
	134	New Water Storage Tank -- Terrebonne General Medical Center (1,000,000 Gallons, $750,000)	Hard	No	New water storage tanks are not eligible for HMGP funds		
	135	Relocation -- Deadwood	Hard	Potentially	Relocation of entire community's social impacts will not allow scoping		
	136	Relocation -- Jean Charles	Hard	Potentially	Relocation of entire community's social impacts will not allow scoping		
/	137	Generators--Central Fire Department Station, Montegut Middle School, Houma Police Department, Terrebonne Parish Civic Center, Terrebonne Parish Public Works building, Terrebonne Parish EOC	Hard	Potentially	Generators are eligible for 5% initiative funding	Overlap	
	138	Generator -- Public Works - Forced Drainage Pump Station D-03, D-07, D-12 20KW	Hard	Potentially	Generators are eligible for 5% initiative funding	Priority	$ 30,000
	139	RL and Severe RL Properties -- Elevation, Acquisition, Mitigation Reconstruction (Parish)	Hard	Potentially	Elevation/Acquisition/Mitigation Reconstruction Projects are all eligible for HMGP funding	In Process	
	140	Safe room -- Coteau Fire Station	Hard	Potentially	Safe Rooms are eligible for HMGP funding		
	141	Safe Room -- Gov't Towers Parking Structure (Pet Shelter)	Hard	Potentially	Safe Rooms are eligible for HMGP funding	New Animal Shelter Funded	
	142	Safe Room -- Houma Water Treatment Plant	Hard	Potentially	Safe Rooms are eligible for HMGP funding		
	143	Wind Retrofit -- Bac-T Lab at Schriever Water Treatment Facility (install shutters or impact resistant glass on windows, strengthen doors)	Hard	Potentially	Wind Hardening is eligible for HMGP funding		
	144	Wind Retrofit -- Bob Jones Building (Cat 4 or 5)	Hard	Potentially	Wind Hardening is eligible for HMGP funding		$ 50,000
	145	Wind Retrofit -- Bourg Fire Station, 2 Bay Doors (22'x10', 14'x10') and 3 Windows (36"x36")	Hard	Potentially	Wind Hardening is eligible for HMGP funding	Obsolete--Remove	
	146	Wind Retrofit -- Buquet Bridge and Klondyke Bridge Tender's Buildings (Cat 3)	Hard	Potentially	Wind Hardening is eligible for HMGP funding		
	147	Wind Retrofit -- City Hall (IT Department)	Hard	Potentially	Wind Hardening is eligible for HMGP funding	In Process	
	148	Wind Retrofit -- Civic Center (Shutters or Window Film)	Hard	Potentially	Wind Hardening is eligible for HMGP funding	Funded	
	149	Wind Retrofit -- Coteau Fire Station (include main structure, apparatus room, generator room doors)	Hard	Potentially	Wind Hardening is eligible for HMGP funding	Completed	
	150	Wind Retrofit -- Courthouse Annex (Window Film)	Hard	Potentially	Wind Hardening is eligible for HMGP funding	Funded	
	151	Wind Retrofit -- Director's Building (Cat 3)	Hard	Potentially	Wind Hardening is eligible for HMGP funding		$ 50,000
	152	Wind Retrofit -- Drainage Building (Cat 3)	Hard	Potentially	Wind Hardening is eligible for HMGP funding		$ 50,000
	153	Wind Retrofit -- Evergreen Junior High	Hard	Potentially	Wind Hardening is eligible for HMGP funding		
	154	Wind Retrofit -- Fire Stations (#2, #3, #4) Shutters	Hard	Potentially	Wind Hardening is eligible for HMGP funding	Potentially	
	155	Wind Retrofit -- Garage Doors (407 Island)	Hard	Potentially	Wind Hardening is eligible for HMGP funding		
	156	Wind Retrofit -- Government Tower (Window Film)	Hard	Potentially	Wind Hardening is eligible for HMGP funding	In process	
	157	Wind Retrofit -- Gulf States LTAC	Hard	Potentially	Wind Hardening is eligible for HMGP funding		
	158	Wind Retrofit -- Harden Front and Back Doors of Convention Center	Hard	Potentially	Wind Hardening is eligible for HMGP funding	Funded	
	159	Wind Retrofit -- Headstart Center	Hard	Potentially	Wind Hardening is eligible for HMGP funding		
	160	Wind Retrofit -- Houma Junior High	Hard	Potentially	Wind Hardening is eligible for HMGP funding		
	161	Wind Retrofit -- Houma Municipal Auditorium	Hard	Potentially	Wind Hardening is eligible for HMGP funding		
	162	Wind Retrofit -- Houma PD	Hard	Potentially	Wind Hardening is eligible for HMGP funding	In Process	
	163	Wind Retrofit -- Juvenile Detention Center	Hard	Potentially	Wind Hardening is eligible for HMGP funding	In Process	
	164	Wind Retrofit -- Legion Park Middle	Hard	Potentially	Wind Hardening is eligible for HMGP funding		
	165	Wind Retrofit -- Mail Library	Hard	Potentially	Wind Hardening is eligible for HMGP funding		
	166	Wind Retrofit -- Main Office (Install shutters or impact resistant glass on windows, strengthen doors)	Hard	Potentially	Wind Hardening is eligible for HMGP funding		

Source	No.	Project	Hard/Soft	Eligible	Explanation of Eligibility	Status	Approximate Cost
Projects 2010 Update Cont.							
I	167	Wind Retrofit -- Montague, Point Aux Chene Fire Stations (5 Windows at 1466 Hwy 665, 6 Windows at 407 Island Rd, 6 Windows at 1746 Hwy 55)	Hard	Potentially	Wind Hardening is eligible for HMGP funding		
	168	Wind Retrofit -- Morgue	Hard	Potentially	Wind Hardening is eligible for HMGP funding		
	169	Wind Retrofit -- New Roll-up Door at EOC -- 911	Hard	Potentially	Wind Hardening is eligible for HMGP funding	In Process	
	170	Wind Retrofit -- North Terrebonne Standpipe (strengthen door)	Hard	Potentially	Wind Hardening is eligible for HMGP funding		
	171	Wind Retrofit -- Roof of Convention Center	Hard	Potentially	Wind Hardening is eligible for HMGP funding	Funded	
	172	Wind Retrofit -- Schriever Elementary	Hard	Potentially	Wind Hardening is eligible for HMGP funding	Funded	
	173	Wind Retrofit -- Sludge Press Building (strengthen doors)	Hard	Potentially	Wind Hardening is eligible for HMGP funding		
	174	Wind Retrofit -- South Terrebonne High School	Hard	Potentially	Wind Hardening is eligible for HMGP funding		
	175	Wind Retrofit -- Southdown Elementary	Hard	Potentially	Wind Hardening is eligible for HMGP funding		
	176	Wind Retrofit -- Terrebonne High School	Hard	Potentially	Wind Hardening is eligible for HMGP funding		
	177	Wind Retrofit and Elevation -- Houma Plant 3 (Install shutters or impact resistant glass on windows, strengthen doors, raise pumps and electrical panels)	Hard	Potentially	Wind Hardening and elevations are eligible for HMGP funding		
	178	Wind Retrofit and Elevation -- Houma Plant High Service pumps and electrical panels, strengthen door	Hard	Potentially	Wind Hardening and elevations are eligible for HMGP funding		
	179	Wind Retrofit and Elevation -- Lafort Canal RW PS (elevate pumps and generator, strengthen door)	Hard	Potentially	Wind Hardening and elevations are eligible for HMGP funding		
	180	Wind Retrofit and Elevation -- Munson PS (Elevate Building, electrical pumps, regulating valves and meters, Install Shutters on windows, strengthen the doors)	Hard	Potentially	Wind Hardening and elevations are eligible for HMGP funding		
	181	Wind Retrofit and Elevation -- Schriever Plant (install shutters or impact resistant glass on windows, strengthen doors, elevate pumps)	Hard	Potentially	Wind Hardening and elevations are eligible for HMGP funding		
	182	Wind Retrofit and Elevation -- Shell PS (elevate pumps and electrical panels, strengthen door)	Hard	Potentially	Wind Hardening and elevations are eligible for HMGP funding		
	183	Wind Retrofit and Elevation -- Williams Street Pump Station (elevate pumps and electrical panels, strengthen door)	Hard	Potentially	Wind Hardening and elevations are eligible for HMGP funding		
	184	Wind Retrofit and Elevation -- Williams Street Pump Station (elevate pumps and electrical panels, strengthen door)	Hard	Potentially	Wind Hardening and elevations are eligible for HMGP funding		
New Projects, 2014 Update							
J	1	Safe Room -- OEP (substitute)	Hard	Potentially	Safe Rooms are eligible for HMGP funding	Funded	
	2	Communications -- Community Alert System (First Call), Reverse 911, Community Hotline, Alert FM, Redundant Phone System at EOC	Hard	Potentially	Communications are eligible for 5% initiatives	Completed	
	3	Emergency Preparedness -- Gauge installation at pump stations near major roadways and at bridges/floodgates	Hard	No	Installation of new equipment is not eligible for HMGP		
	4	Communications -- Additional Communications Tower for office	Hard	No	Construction not eligible for HMGP		
	5	Emergency Preparedness -- Purchase of Drone for Damage Assessment	Hard	No	Drone purchase not eligible for HMGP		
	6	Communications Tower North Campus/Telemetry/ Forced Drainage	Hard	No		Priority	$ 400,000
	7	Emergency Preparedness -- Evacuation Sign Purchase and Placement	Hard	No	Purchase of Signs not eligible for HMGP		
	8	100 Amp, 3-way SS Disconnects for generator ready connections (approx. 40 Lift station sites)	Hard	Potentially			
	9	Replacement of wooden lift station fence/gates with chain link to mitigate wind damage	Hard	Potentially			
	10	150 KW generators for Mire, Idlewild, and Elysian Lift Stations	Hard	5%	Generators are eligible for HMGP		
	11	20 Pump Stations/Scada/ Telemetry, The automation of Forced drainage Pump Stations to reduce response time and flooding. Monitored and controled remotley during storm events.	Hard	5%		High Priority Partially funded by TPCG	$ 3,000,000
	12	Wind Retrofit -- Houma Water Treatment Facility	Hard	Potentially	Wind Hardening is eligible for HMGP funding		
	13	Wind Retrofit -- Schriever Water Treatment Facility	Hard	Potentially	Wind Hardening is eligible for HMGP funding		
	14	Wind Retrofit -- Waterworks Office Complex at 8814 Main Street, Houma, LA	Hard	Potentially	Wind Hardening is eligible for HMGP funding		
	15	Safe House -- Houma Fire Department 2101 East Tunnel Blvd.	Hard	Potentially	Safe Rooms are eligible for HMGP funding		
	16	Wind Retrofit -- Montegut Fire Department (1105 Hwy 55) Garage Doors	Hard	Potentially	Wind Hardening is eligible for HMGP funding		$ 30,000
	17	Wind Retrofit -- Bourg Fire Department (4317 Highway 24) Windows with Shutters	Hard	Potentially	Wind Hardening is eligible for HMGP funding		$ 25,000
	18	Wind Retrofit -- Coteau Fire Department (2325 Coteau Rd) Windows with Shutters	Hard	Potentially	Wind Hardening is eligible for HMGP funding		$ 25,000
	19	Wind Retrofit -- Little Caillou Fire Department (4588 Hwy 56) Windows with Shutters	Hard	Potentially	Wind Hardening is eligible for HMGP funding		$ 25,000
	20	Wind Retrofit -- Little Caillou Fire Department (5610 Hwy 56) Windows with Shutters	Hard	Potentially	Wind Hardening is eligible for HMGP funding		$ 25,000
	21	Wind Retrofit -- Little Caillou Fire Department (6668 Hwy 56) Shutters	Hard	Potentially	Wind Hardening is eligible for HMGP funding		$ 25,000
	22	Idenfify vulnerable historic and cultural resources, as well as opportunities to protect and/or relocate historic assets (Tribal)	Soft	No	Soft Projects (education) not eligible for HMGP funding		
	23	Protect historic and cultural resources, such as cemeteries and gathering places from all hazards (Tribal)	Soft	No	Soft Projects (education) not eligible for HMGP funding		
	24	Collaborate with communities to design, evaluate, and implement Relocation Strategies for communities located outside of the levee systems (Tribal)	Soft	No	Soft Projects (education) not eligible for HMGP funding		
	25	Ensure that current and future building elevations take the needs of those individuals with access and functional needs into account. This includes the incorporation of lifts. (Tribal)	Soft	No	Soft Projects (education) not eligible for HMGP funding		
	26	Identify mechanisms to protect the Island Road from surge and tidal impacts. This might include engineered solutions to decrease wave impacts and/or erosion control mechanisms along the edges of the road. (Tribal)	Soft	No	Soft Projects (education) not eligible for HMGP funding		
	27	Work with communities currently residing in flood prone areas, particularly outside of the levee systems, on the identification of flood mitigation and climate adapatation measures to reduce flood risk. (Tribal)	Soft	No	Soft Projects (education) not eligible for HMGP funding		
	28	Work with the communities currently residing in at risk areas on the development of evacuation plans including access to shelter and transportation assistance as needed. (Tribal)	Soft	No	Soft Projects (education) not eligible for HMGP funding		
	29	Safe Harbor Stud and Education Campaign	Soft	No	LSU Ag Sea Grants - Soft Projects (education) not eligible for HMGP funding		$ 50,000
	30	Library Storm Preparation and Recovery Flashcards	Soft	No	LSU Ag Sea Grants - Soft Projects (education) not eligible for HMGP funding		$ 25,000
	31	Structure Inventory	Soft	No	Soft Projects are not eligible for HMGP funding		$ 850,000

Source	No.	Project	Hard/Soft	Eligible	Explanation of Eligibility	Status	Approximate Cost
New Projects, 2014 Update							
	32	Storm Recovery Phase Code Enforcement Capacity	Soft	No	Soft Projects are not eligible for HMGP funding		Variable
	33	Storm Preparedness Literacy Project	Soft	No	Soft Projects (education) not eligible for HMGP funding		$ 5,000
	34	Levee Safety Educational Promotions	Soft	No	Soft Projects (education) not eligible for HMGP funding		$ 30,000
	35	Develop a Program for Public Information	Soft	No	Soft Projects (education) not eligible for HMGP funding		$ 5,000
	36	Review capacity to increase nonresidential structure mitigations			Soft Projects are not eligible for HMGP funding		Variable
	37	Education regarding flood safety and property valuation	Soft	No	Soft Projects (education) not eligible for HMGP funding		$ 5,000
	38	Vehicle lift for HPD EOC	Hard	No			$ 1,500
	39	Natural Gas Generator	5%	Potentially	Generators are eligible for 5% initiative funding		$ 50,000
J	*40*	Generator Study/Environmental Review/Provision of Generators	Soft/Hard	Potentially	Generators are eligible for 5% initiative funding		$ 650,000
	41	Generator Study/Environmental Review/Provision of Quick Connects	Soft/Hard	Potentially	Generators are eligible for 5% initiative funding		$ 500,000
	42	Educational video on evacuation options	Soft	No	Soft Projects (education) not eligible for HMGP funding		$ 15,000
	43	Signage for evacuation routes	Hard	No			$ 10,000
	44	Portable billboards to update emergency instructions or evacuation routes/changes	Hard	No			
	44	Four P25 Motorola Communications Consoles to be located within the Terrebonne 911 Cat. 5 Hurricane resistant facility located at 110 Capital Blvd. to be used for Interoperable Communications between all 15 Terrebonne Fire Districts (13 Fire Departments), Law Enforcement Agencies, OEP, Utilities & Parish Departments (cost $138,000)	5%	No	Hand held communications are not eligible for 5% initiative funding		

Key

	Completed or Funded
	Not Mitigation Related
	Needs More Information
	Not Eligible for HMGP Funding
	Potentially Eligible for HMGP Funding
	Potentially Eligible and Repeated in New Projects

Attachment c3-2
Flood Protection Outreach (FPO) Materials

The Flood Protection Outreach (FPO) Materials are presented on the following twenty four pages.

Flood Damage Prevention Outreach Survey Results

Compilation of Survey Data

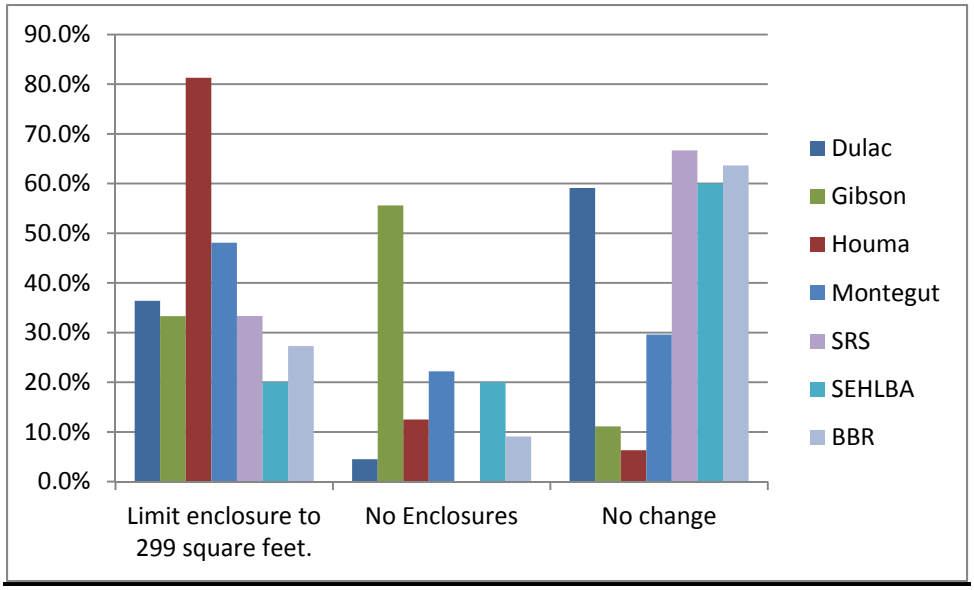
Jennifer C. Gerbasi

8/29/2013

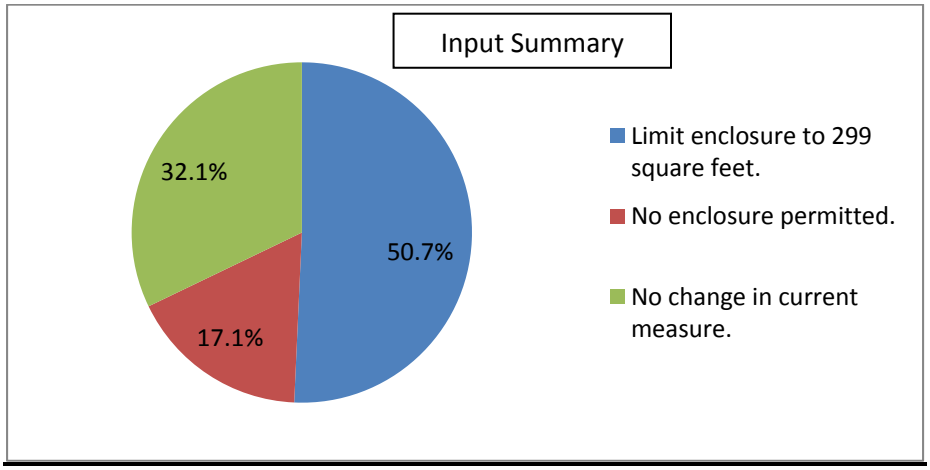
The following is the data gathered from the public and industry meetings after presentations by consultants GCR , Inc. and CSRS, Inc. in July and August of 2013. Written comments have not been included in this data but for "none" when that option was not available. Neither the focus group data nor the website input has been included. The data is provided by individual meeting and in the aggregate. Every effort has been made to have consistency between the survey results and the presentation. Some anomalies may appear due to the changes made to the presentation in response to feedback requesting further clarity or more data.

Question No. 1- Building Below The House/Enclosure Limits

To what extent should enclosures be limited below the base flood elevation?		
Answer Options	**Response Percent**	**Response Count**
Limit enclosure to 299 square feet.	50.7%	71
No enclosure permitted.	17.1%	24
No change in current measure.	32.1%	45
	answered question	140
	skipped question	5

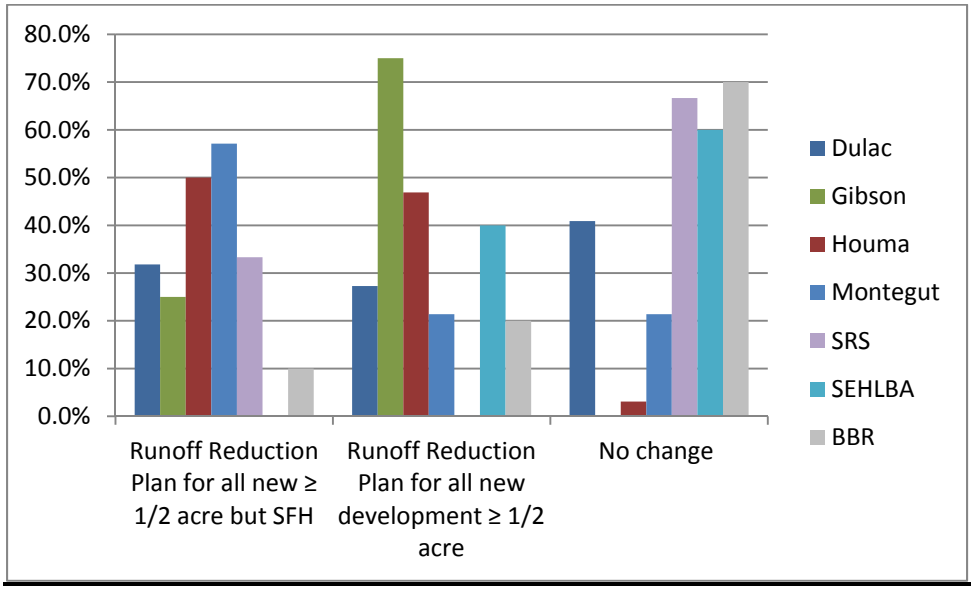


1. To what extent should enclosures be limited below the base flood elevation?

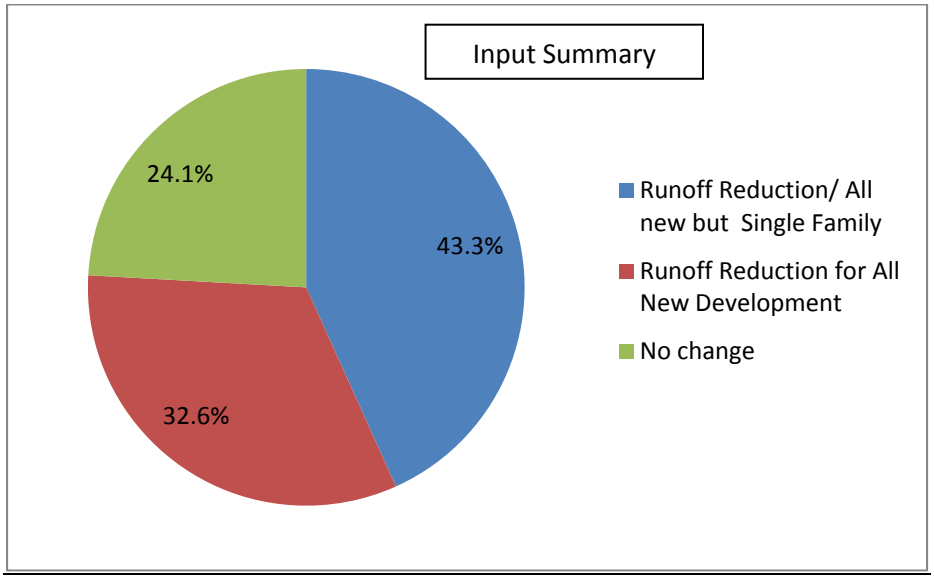


Question No. 2- Stormwater Reduction

To what extent should new developments be required to prevent and reduce the increase in runoff to provide greater protection for existing buildings and natural space? Please select your answer from the following choices.		
Answer Options	**Response Percent**	**Response Count**
Require runoff reduction for all new development 1/2 acre or greater except for single family residences.	43.3%	61
Require runoff reduction for all new development 1/2 acre or greater.	32.6%	46
No change from current measure.	24.1%	34
	answered question	141
	skipped question	4



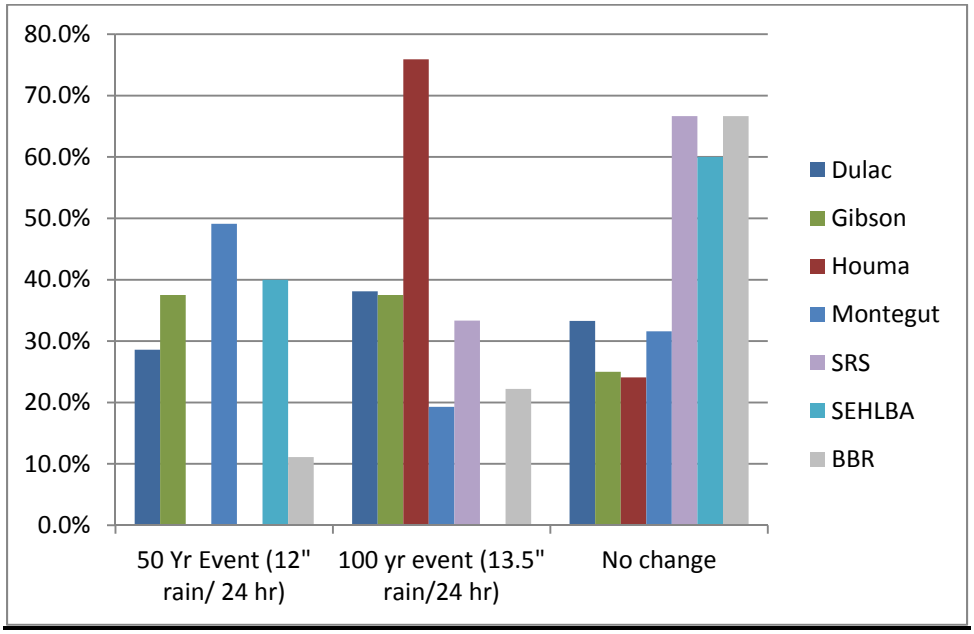
2. **Requirement for Runoff Reduction Plan**



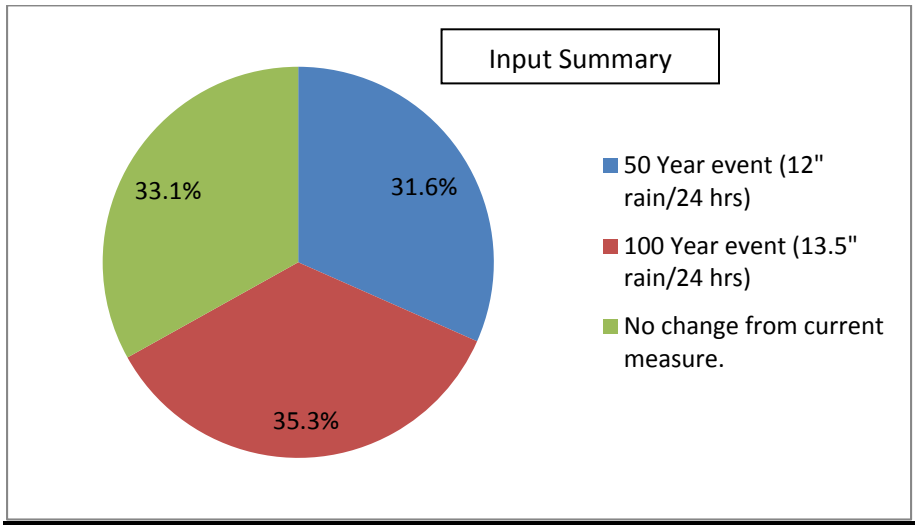
Question No. 3- Development Design Guidelines

At what storm level should new developments be required to plan to not increase runoff?

Answer Options	Response Percent	Response Count
50 Year event (12" of rain per 24 hour period)	31.6%	43
100 Year event (13.5" of rain per 24 hour period)	35.3%	48
No change from current measure.	33.1%	45
	answered question	136
	skipped question	9



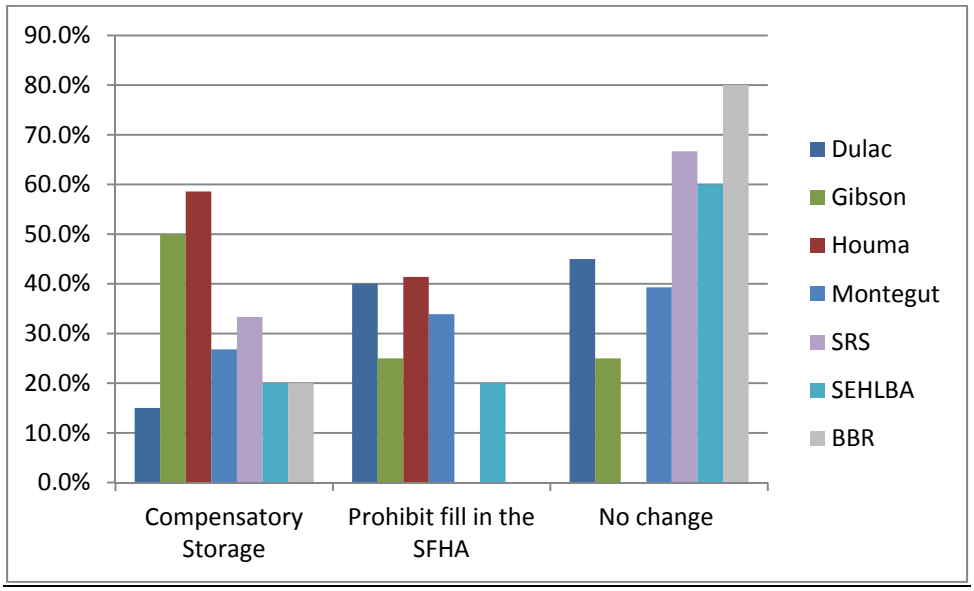
3. What storm level should be required for new developments to not increase runoff?



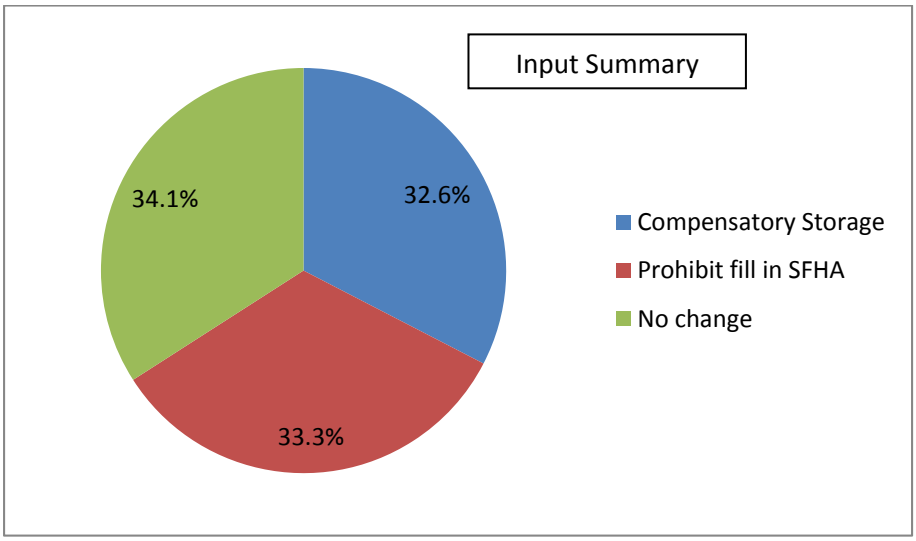
Question No. 4- Floodplain Fill Restrictions

Which activity would you prefer?

Answer Options	Response Percent	Response Count
For new developments, make a retention pond on the property to hold the extra water that is expected to flow off the property.	32.6%	44
Prohibit fill in the Special Flood Hazard Area.	33.3%	45
No change from current measure.	34.1%	46
	answered question	135
	skipped question	10

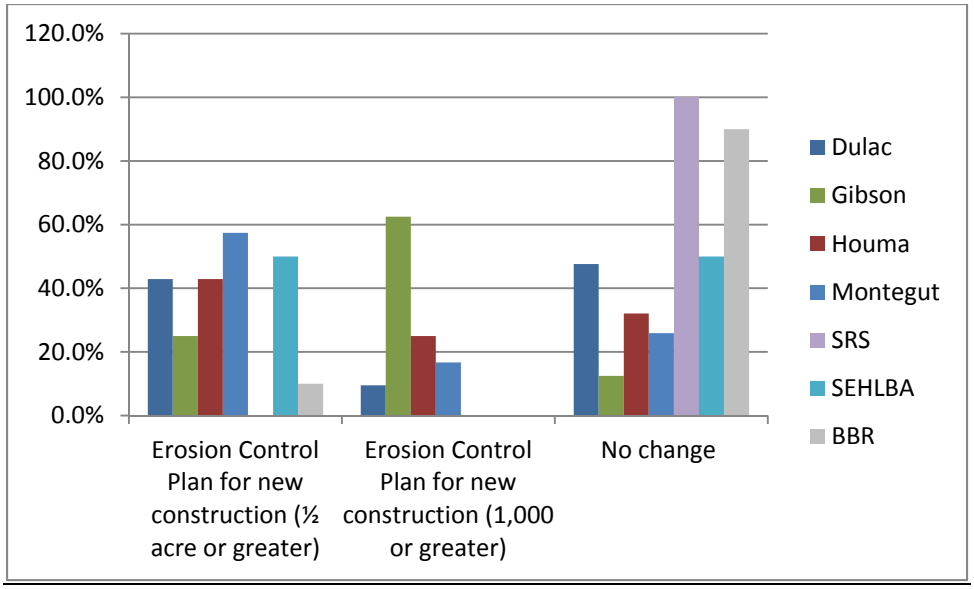


4. Which activity would you prefer to protect property from new flooding caused by fill?

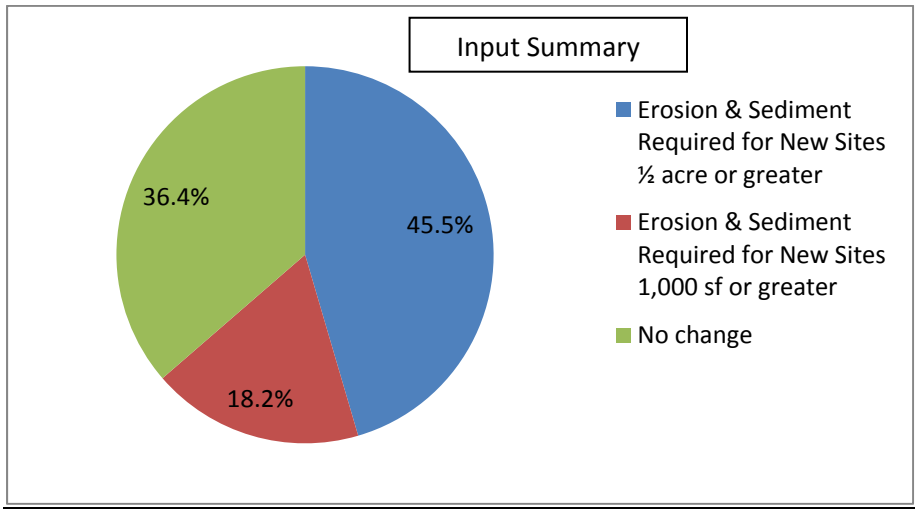


Question No. 5- Erosion & Sediment Control

Requiring that developments have an erosion and sediment loss prevention plan inside and out of the Special Flood Hazard Area will increase soil stability and water quality. Please select your answer from the following choices.		
Answer Options	**Response Percent**	**Response Count**
Require erosion and sediment controls measures for medium construction sites (½ acre or greater).	45.5%	60
Require erosion and sediment controls measures for small construction sites (over 1,000 square feet).	18.2%	24
No change from current measure.	36.4%	48
	answered question	132
	skipped question	13

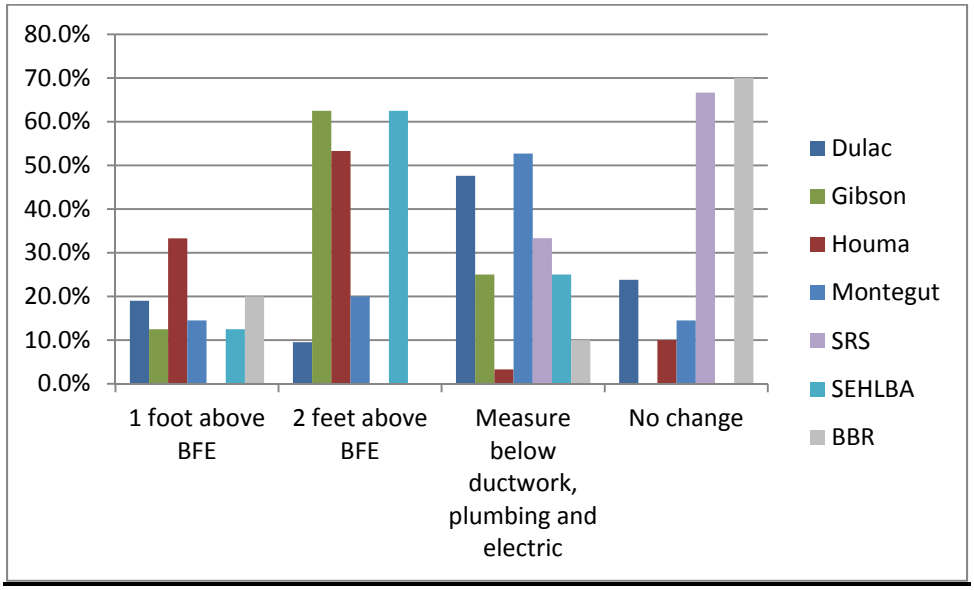


5. Size development to requiring an erosion and sediment loss prevention plan parishwide.

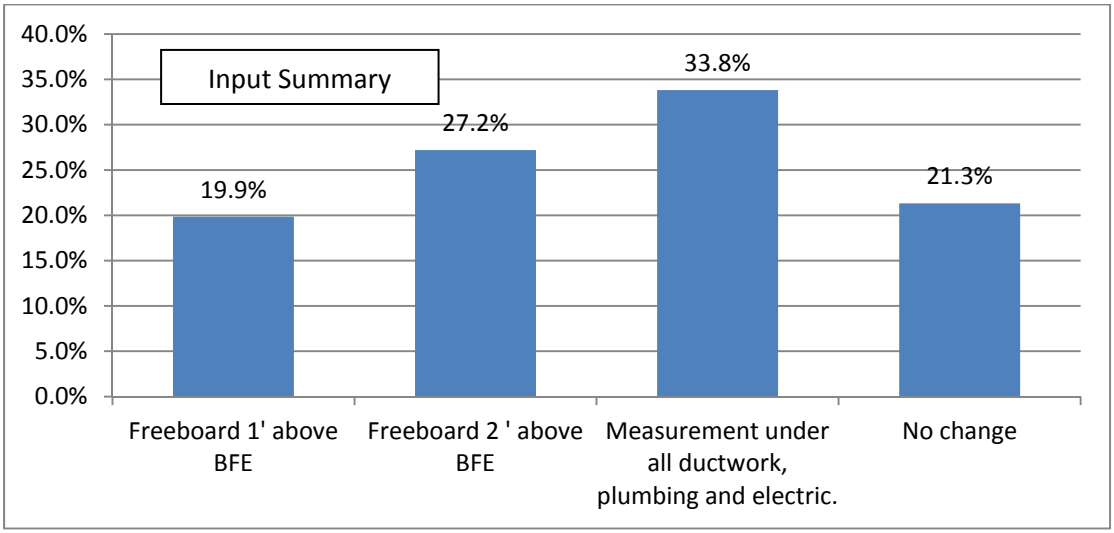


Question No. 6- Freeboard/Elevation above BFE

Do you agree with requiring additional height above the base flood elevation to provide an extra margin of protection in the event of a flood?		
Answer Options	**Response Percent**	**Response Count**
1 foot above BFE	19.9%	27
2 feet above BFE	27.2%	37
Change measurement to require all ductwork, plumbing and electrict to be above flood risk level.	33.8%	46
No change from current measure.	21.3%	29
	answered question	136
	skipped question	9

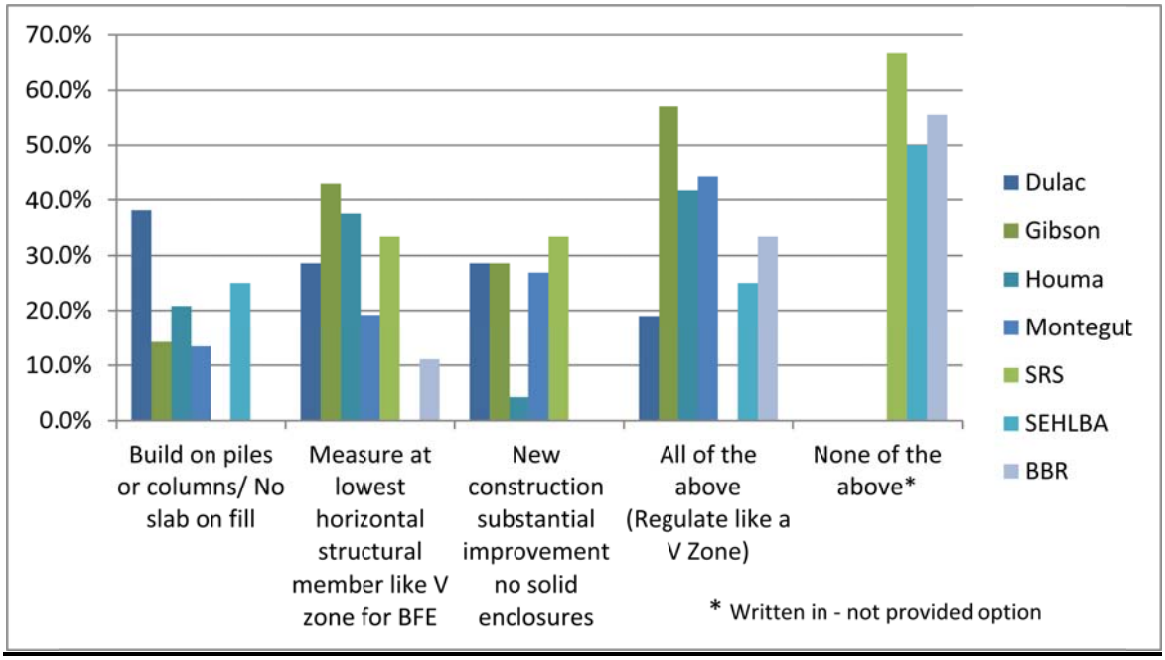


6. Do you agree with requiring additional height above the base flood elevation to provide an extra margin of protection in the event of a flood?

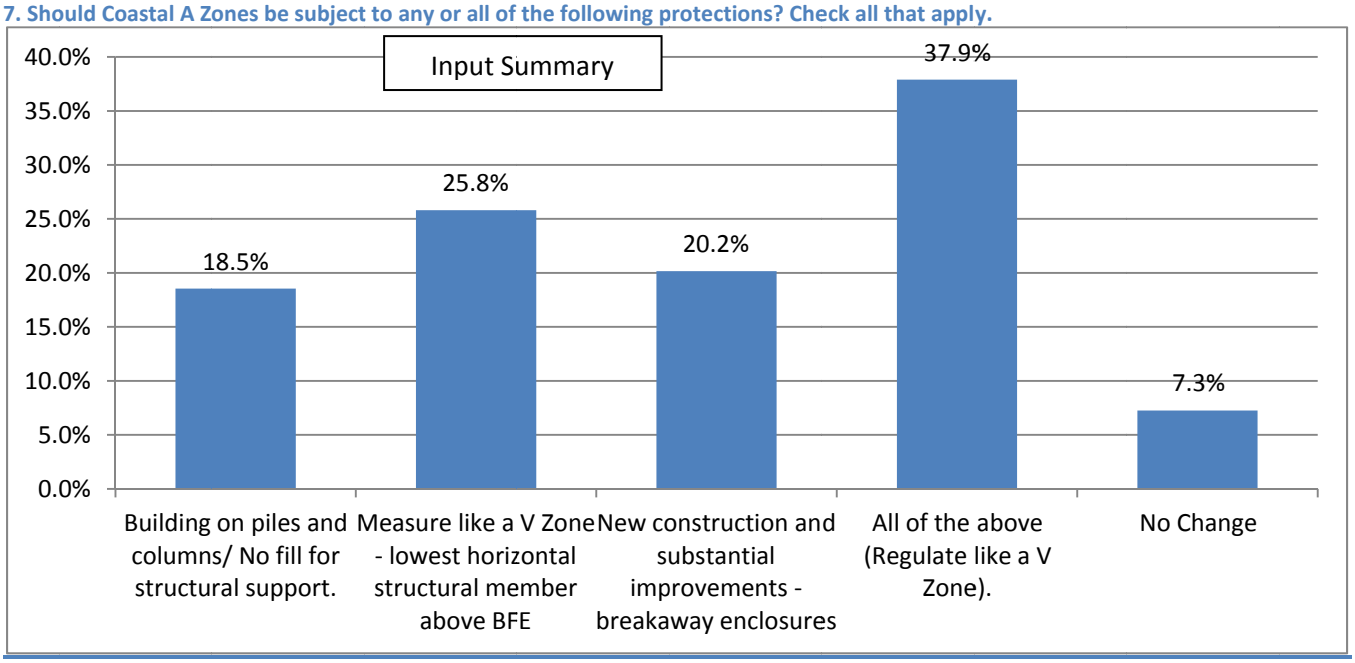


Question No. 7- Coastal A Zone Protections

Should Coastal A Zones be subject to any or all of the following protections? Check all that apply.		
Answer Options	**Response Percent**	**Response Count**
Building on piles and columns/ No fill for structural support.	18.5%	23
Measure like a V Zone - lowest horizontal structural member above BFE	25.8%	32
New & substantial improvements - breakaway enclosures	20.2%	45
All of the above (Regulate like a V Zone).	37.9%	47
No Change (written in)	7.3%	9
	answered question	124
	skipped question	21



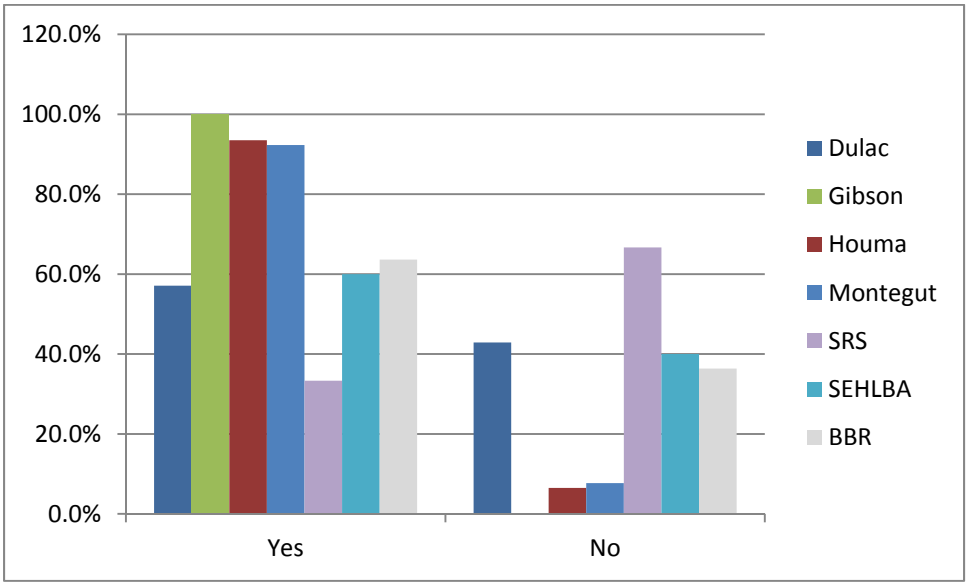
7. Should Coastal A Zones be subject to any or all of the following protections? Check all that apply.



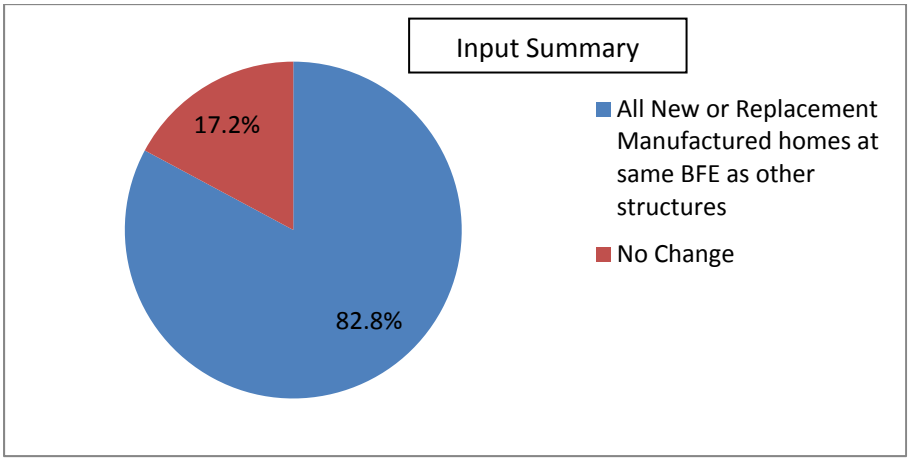
Question No. 8- Manufactured Home Protections

Do you agree that new and replacement manufactured homes in existing home parks or subdivisions should be properly anchored and elevated above the base flood elevation, including electrical components and ductwork?

Answer Options	Response Percent	Response Count
Yes	82.8%	111
No	17.2%	23
	answered question	134
	skipped question	11



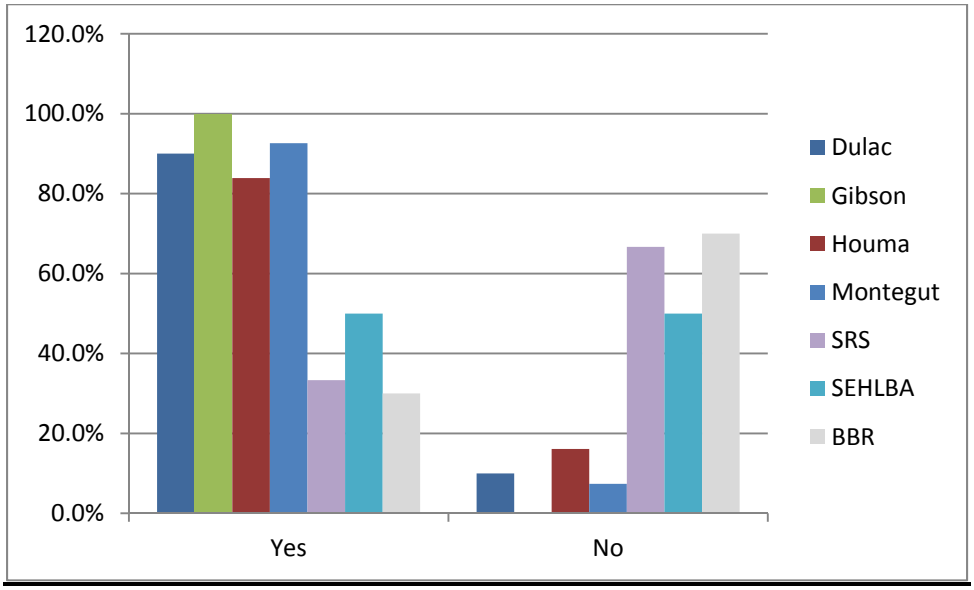
8. Should all new and replacement manufactured homes be elevated above the base flood elevation, including electrical components and ductwork?



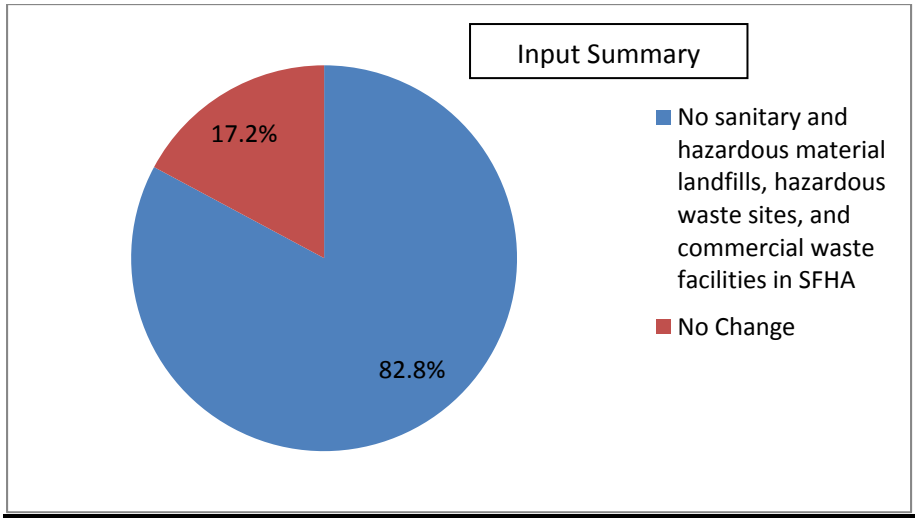
Question No. 9- Water Quality

Do you agree that all new sanitary and hazardous material landfills, hazardous waste sites, and commercial waste facilities should be prohibited from the Special Flood Hazard Area?

Answer Options	Response Percent	Response Count
Yes	82.8%	111
No	17.2%	23
	answered question	134
	skipped question	11



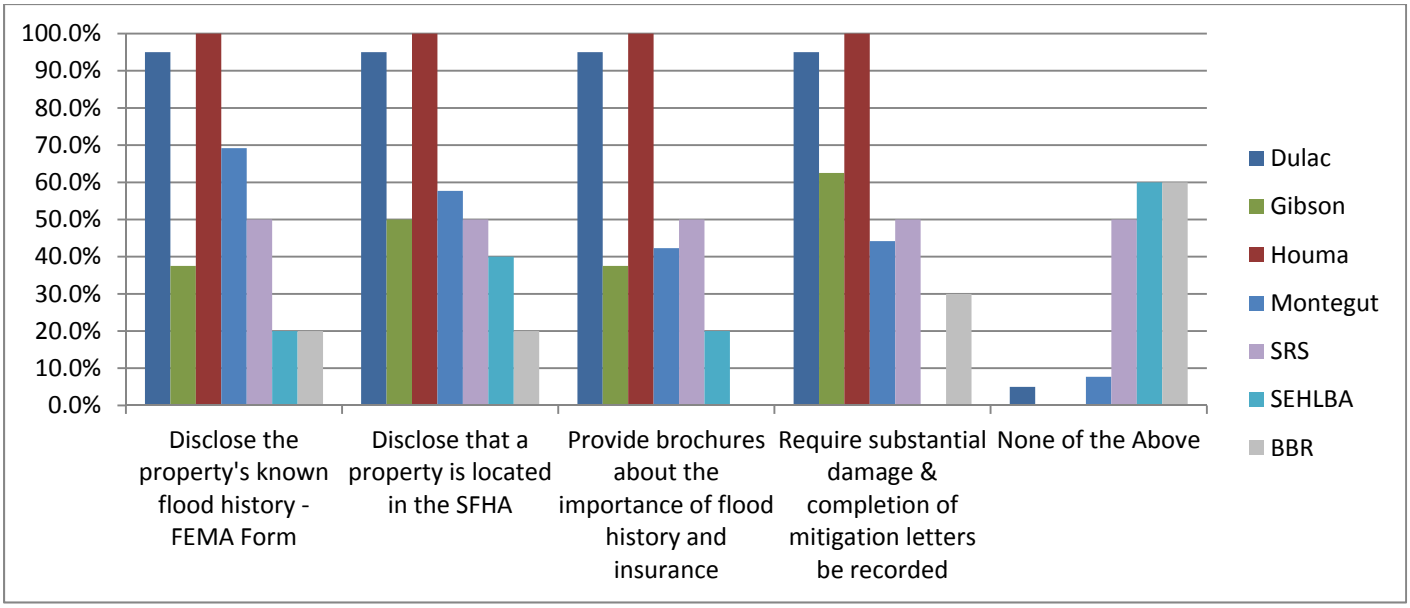
9. Do you agree that all new sanitary and hazardous material landfills, hazardous waste sites, and commercial waste facilities should be prohibited from the Special Flood Hazard Area?



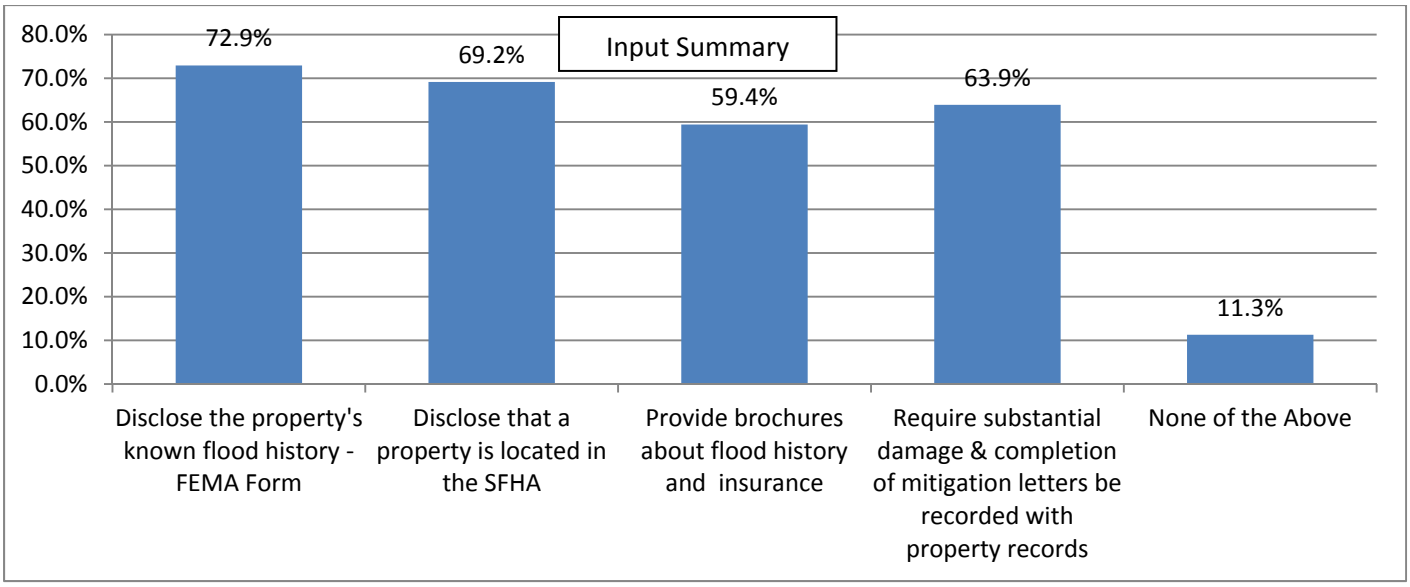
Question No. 10- Flood History Disclosure

Do you agree with any of the below requirements to allow for enhanced disclosure of flood history for property sales?

Answer Options * Respondents could make multiple selections.	Response Percent	Response Count
Require real estate agents/sellers to disclose the property's known flood history.	72.9%	97
Require real estate agents/sellers to notify potential buyers that a property is located in the Special Flood Hazard Area.	69.2%	92
Require real estate agents/sellers to provide brochures advising potential buyers to investigate property flood history and associated insurance requirements	59.4%	79
Require substantial damage and completion of mitigation letters be recorded with property records for the title search.	63.9%	85
None of the Above	11.3%	15
answered question		133
skipped question		12



10. Require real estate agents/Sellers to:



Flood Damage Prevention Ordinance Update Proposal

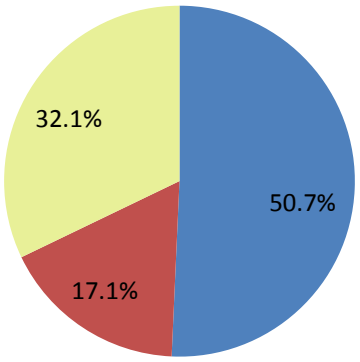
Department of Planning and Zoning

Jennifer C. Gerbasi

9/11/2013

Question No. 1- Building Below The House/Enclosure Limits

To what extent should enclosures be limited below the base flood elevation?		
Answer Options	**Response Percent**	**Response Count**
Limit enclosure to 299 square feet.	50.7%	71
No enclosure permitted.	17.1%	24
No change in current measure.	32.1%	45
answered question		140
skipped question		5



At issue: Noncompliance with current NFIP and Ordinance requirements. Lack of enforcement personnel and random inspections. Lack of understanding of the requirement and ramifications of enclosing under elevated structures.

Ordinance Language:[1]

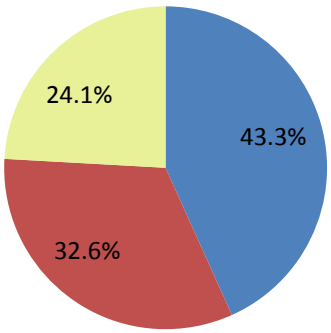
1) Include nonconversion agreement with permission to inspect in the permit itself to increase education on the matter and show that someone will be watching (60 pts)
2) Require the nonconversion agreement to be filed at the courthouse (5 pts.)
3) Limit enclosures to 299 sf for raises over 4 ft from grade (HAG). (100 pts). *Breakaway walls are enclosures. Structures open on one side or lattice/screening are not enclosures.*
4) Clearly incorporate enforcement mechanism by reference into the ordinance (refer to building code section regarding removal of noncompliant works).
5) Not applicable to detached accessory structures.

Maximum Points[2] **- CRS Activity. 432 g.** 160 **342 b6.** 5 **Current Projected Points:** 0

[1] All ordinance language is rough draft. If may be preferable to combine some of the options in the final text. Some text may be incorporated into other existing ordinances rather than the Flood Damage Prevention Ordinance.
[2] Points are the maximum available for the selected activities. Some are prorated based on the applicable area.

Question No. 2- Stormwater Reduction –May be achievable with restatement of current ordinance

To what extent should new developments be required to prevent and reduce the increase in runoff to provide greater protection for existing buildings and natural space? Please select your answer from the following choices.		
Answer Options	**Response Percent**	**Response Count**
Require runoff reduction for all new development 1/2 acre or greater except for single family residences.	43.3%	61
Require runoff reduction for all new development 1/2 acre or greater.	32.6%	46
No change from current measure.	24.1%	34
	answered question	**141**
	skipped question	**4**



At issue: Perception that new developments other than large developments are increasing flood risk on neighboring properties. In the aggregate, small property redevelopment can cause instability to properties in close proximity. Some of those lots are in areas already challenged by forced drainage issues.

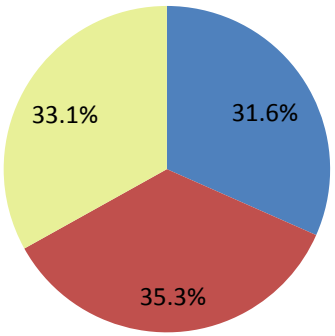
Ordinance Language:

1) All development required to require the peak runoff from new developments ½ acres or greater or impervious area of 5,000 sf or more to be no greater than the pre-development condition. *Predevelopment will be measured from the condition with the original structure in cases of redevelopment.*

Maximum Points – 452a1. 90 Current Projected Points: 15

Question No. 3- Development Design Guidelines

At what storm level should new developments be required to plan to not increase runoff?		
Answer Options	**Response Percent**	**Response Count**
50 Year event (12" of rain per 24 hour period)	31.6%	43
100 Year event (13.5" of rain per 24 hour period)	35.3%	48
No change from current measure.	33.1%	45
	answered question	136
	skipped question	9



At issue: Increase in storm frequency and severity, rains as well as storms, is increasing the demand to build to a higher standard in SFHA and forced drainage areas. Subdivisions built since Katrina to the 25 year standard are suffering flooding.

Ordinance Language:

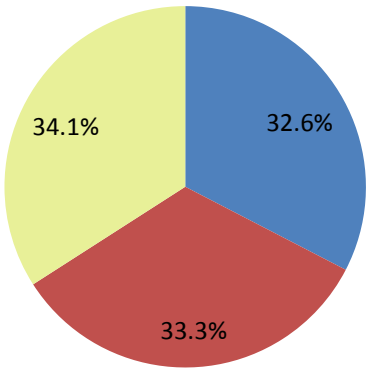
1) All new development within the Parish shall be designed to prevent any increase in peak flow, velocity, and total runoff volume during a 50-year rainfall event. Prior to development, the developer must submit hydrologic and hydraulic studies showing the nature and extent of runoff under present conditions and with the proposed development for that rainfall event.

Maximum Points - CRS Activity 452 a2. 54 Current Projected Points: 54 (10 in 2007 manual)

Question No. 4- Floodplain Fill Restrictions – Not recommended for broad application.

Which activity would you prefer to protect property from new flooding caused by fill?

Answer Options	Response Percent	Response Count
For new developments, make a retention pond on the property to hold the extra water that is expected to flow off the property.	32.6%	44
Prohibit fill in the Special Flood Hazard Area.	33.3%	45
No change from current measure.	34.1%	46
	answered question	135
	skipped question	10



At issue: Fill reduces floodplain storage capacity, and has an adverse impact on native vegetation, wetlands, drainage, and water quality. Also, aesthetic concerns with structures built on mounds in otherwise uniformly graded developments. Fill also encouraged slab on grade construction which is more difficult to mitigate should flood risks change or mitigation be required due to substantial damage. However - applicability to local roads, bridges, and highways and not proposed therefore.

The requirement for a stormwater management plan may dissuade building on fill and slab.

The Parish could require compensatory storage on site for building on slab to discourage the practice.

Ordinance Language:

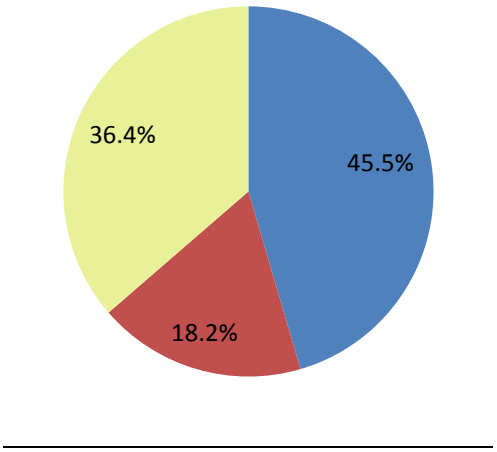
1) New developments to provide compensatory storage at hydrologically equivalent level in situ or another hydrologically equivalent site. (130)

Maximum Points – 432 a1. 130 Current Projected Points: 0

(Look @ p.430-8 for storage of hazardous materials)

Question No. 5- Erosion & Sediment Control

Requiring that developments have an erosion and sediment loss prevention plan inside and out of the Special Flood Hazard Area will increase soil stability and water quality. Please select your answer from the following choices.		
Answer Options	**Response Percent**	**Response Count**
Require erosion and sediment controls measures for medium construction sites (½ acre or greater).	45.5%	60
Require erosion and sediment controls measures for small construction sites (over 1,000 square feet).	18.2%	24
No change from current measure.	36.4%	48
answered question		132
skipped question		13



At issue: Runoff from grading or construction that removes vegetation or otherwise disturbs the soil leading to runoff on to neighboring properties, into bayous or the storm drain system causing clogging, maintenance costs, and damage to environmental and civic assets. Requiring smaller projects to submit and implement erosion control methods will decrease this issue.

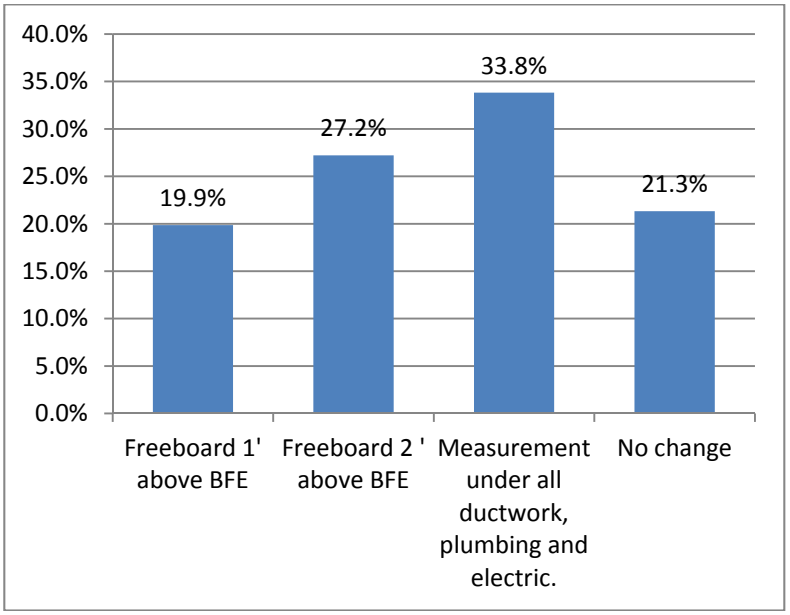
Ordinance Language:

1) Prior to any grading or other earthwork that affects a land area ½ acre or greater, the person performing such earthwork shall submit an erosion control plan. The plan shall be designed to prevent sediment from leaving the site during storms up to and including the 100-year storm and recover the ground after construction or other work to prevent or minimize erosion.

Maximum Points – CRS Activity 452 c1. 40 **Current Projected Points:** 30

Question No. 6- Freeboard/Elevation above BFE

Do you agree with requiring additional height above the base flood elevation to provide an extra margin of protection in the event of a flood?		
Answer Options	**Response Percent**	**Response Count**
1 foot above BFE	19.9%	27
2 feet above BFE	27.2%	37
Change measurement to require all ductwork, plumbing and electric to be above flood risk level.	33.8%	46
No change from current measure.	21.3%	29
answered question		136
skipped question		9



At issue: Freeboard adds height above the base flood elevation to provide an extra margin of protection to account for waves, debris, miscalculations, lack of data, or the ever changing regulations that do not recognize compliance at the time of construction. In addition, individuals can benefit directly from up to 62% off flood insurance rates. Current measurement allows some plumbing, insulation, and electric to be below the base flood elevation due to measurement at the top of the bottom floor.

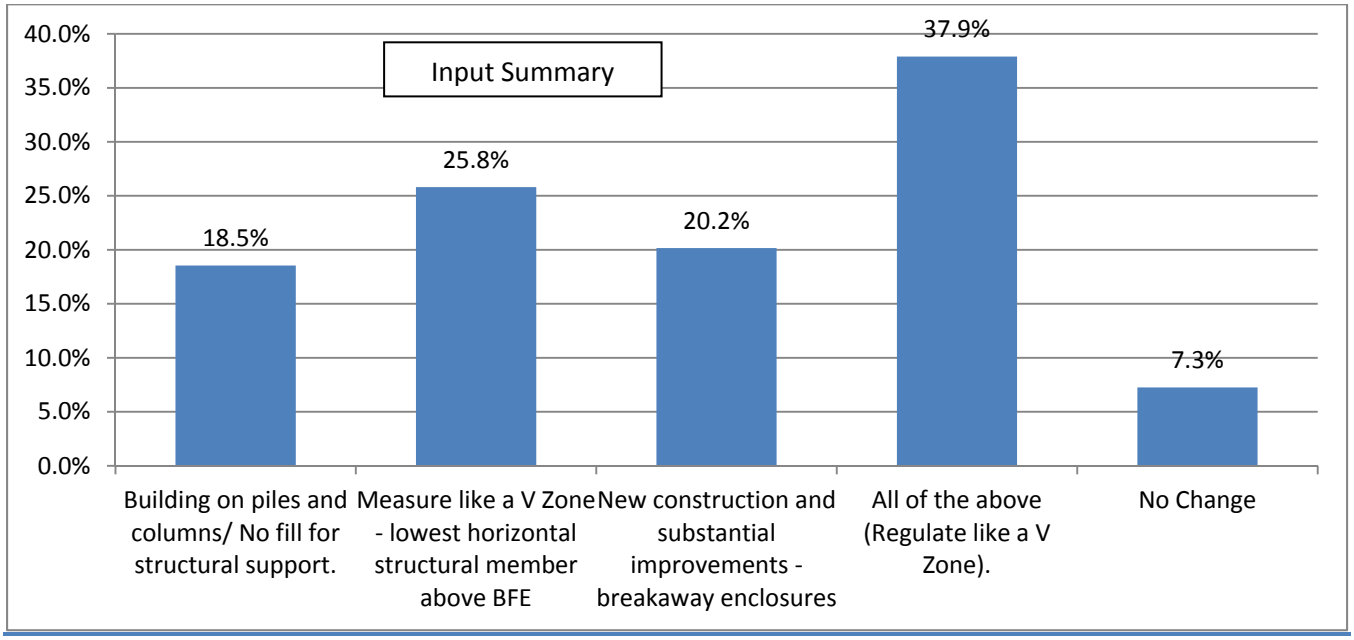
Ordinance Language:

1) New residential buildings and substantial improvements must elevate the structure ~~two~~ one ~~feet~~ foot higher than the base flood elevation and measured at the lowest horizontal cross member. (~~225~~ 100) Industrial structures may floodproof rather than elevate if necessary due to the nature of the business.

Maximum Points – CRS Activity 432 b. 100 Current Projected Points: 60

Question No. 7- Coastal A Zone Protections - (No change until Coastal A Zone mapped)

Should Coastal A Zones be subject to any or all of the following protections? Check all that apply.		
Answer Options	**Response Percent**	**Response Count**
Building on piles and columns/ No fill for structural support.	18.5%	23
Measure like a V Zone - lowest horizontal structural member above BFE	25.8%	32
New & substantial improvements - breakaway enclosures	20.2%	45
All of the above (Regulate like a V Zone).	37.9%	47
No Change (written in)	7.3%	9
	answered question	124
	skipped question	21



At issue: The Coastal A Zone is the portion of the SFHA that is expected to experience wave action from 1.5-2.99 ft. The recommendation from CRS is to regulate in some fashion like the V Zone to protect infrastructure and other assets from this limited moderate wave action.

Ordinance Language:

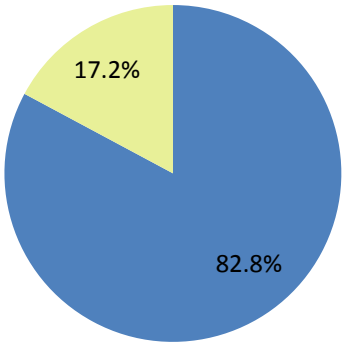
1) Regulate like a v zone (225 pts)
2) The bottom of the lowest horizontal structural member and the electrical and mechanical equipment servicing the building must be elevated above the base flood elevation. (100 pts)
3) A registered professional engineer or architect must develop or review the structural design, specifications, and plans and certify that the designs and methods of construction to be used meet accepted standards of practice for meeting the provisions of 44 CFR §60.3(e)(4)(iii) and breakaway walls (§60.3(e)(5). (125 pts)
4) Enclosures limited to 299sf. (50)

Maximum Points – CRS Activity 432 k. 400 **Current Projected Points:** 0

Question No. 8- Manufactured Home Protections

Do you agree that new and replacement manufactured homes in existing home parks or subdivisions should be properly anchored and elevated above the base flood elevation, including electrical components and ductwork?

Answer Options	Response Percent	Response Count
Yes	82.8%	111
No	17.2%	23
	answered question	134
	skipped question	11



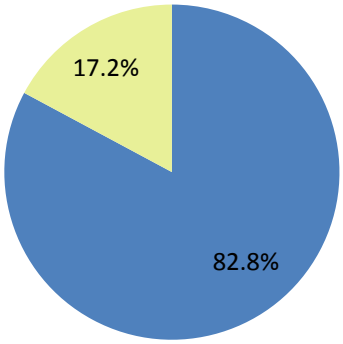
At issue: Manufactured homes in parks developed prior to 1974 that haven't flooded are not required to elevate to the base flood elevation. The ordinance would be written to state that flood compliance is required for all structures including manufactured homes.

Ordinance Language: Manufactured homes will be required to be elevated above the base flood elevation, including electrical components, ductwork, and the bottom of the chassis.

Maximum Points – CRS Activity 432.j 15 **Current Projected Points:** 0

Question No. 9- Water Quality

Do you agree that all new sanitary and hazardous material landfills, hazardous waste sites, and commercial waste facilities should be prohibited from the Special Flood Hazard Area?		
Answer Options	**Response Percent**	**Response Count**
Yes	82.8%	111
No	17.2%	23
	answered question	134
	skipped question	11



At issue: Protecting waterways, drinking water, public health and the environment from hazardous waste that could be dispersed by floodwaters during an event.

Ordinance Language:

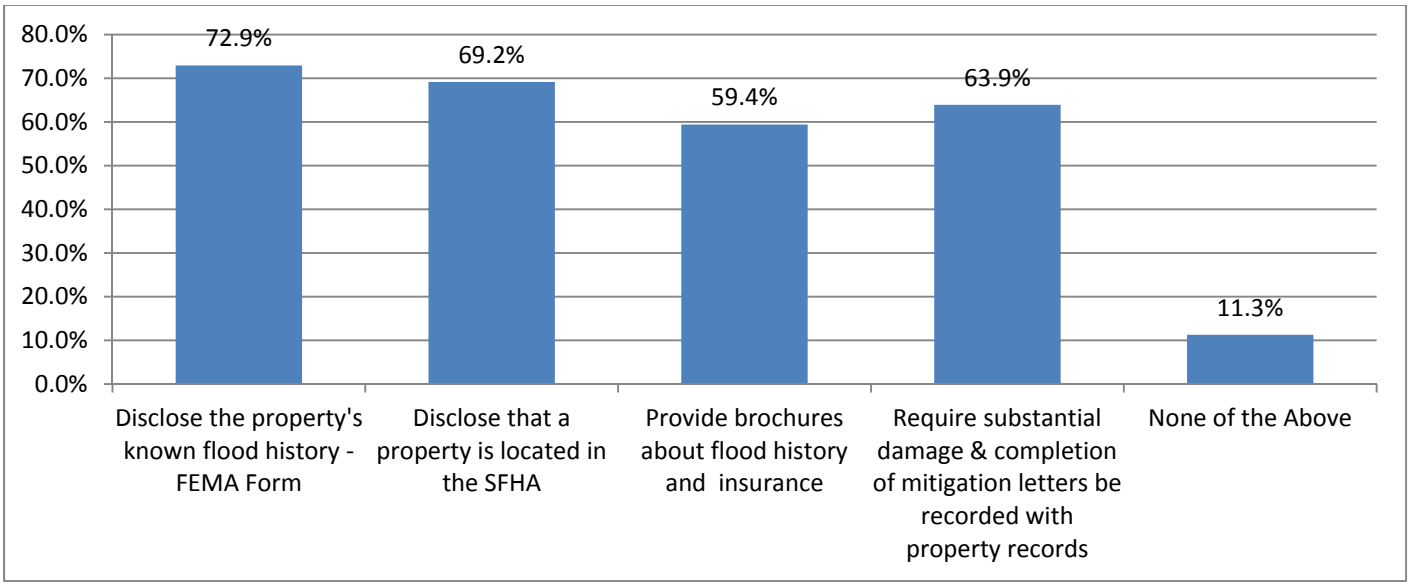
No new sanitary landfills or hazardous material landfills, hazardous waste sites, and commercial waste facilities will be permitted in the special flood hazard area.

Maximum Points – CRS Activity 452 d. 15 **Current Projected Points:** 0

Question No. 10- Flood History Disclosure

Do you agree with any of the below requirements to allow for enhanced disclosure of flood history for property sales?		
Answer Options * Respondents could make multiple selections.	**Response Percent**	**Response Count**
Require real estate agents/sellers to disclose the property's known flood history.	72.9%	97
Require real estate agents/sellers to notify potential buyers that a property is located in the Special Flood Hazard Area.	69.2%	92
Require real estate agents/sellers to provide brochures advising potential buyers to investigate property flood history and associated insurance requirements	59.4%	79
Require substantial damage and completion of mitigation letters be recorded with property records for the title search.	63.9%	85
None of the Above	11.3%	15
answered question		133
skipped question		12

1. Require real estate agents/Sellers to:



At issue: To disclose the potential flood hazard of a property to prospective buyers before the lender notifies them of the need for flood insurance.

Ordinance Language:

1) Require seller to provide insurance or FEMA history of property (5).
2) All sellers disclose if property is in the SFHA (5) & requires flood insurance for a mortgage (35)
3) Real estate agents will provide brochures about flood history (12)
4) Record flood zone on plats and permit or title restrictions in court house (5)
5) Record subdivision plats to display the flood hazard area (5)
6) Seller must advise if the structure is in the V Zone or Coastal A Zone. (8)

Maximum Points – CRS Activity 340. 75 Current Projected Points: 10

Summary of Community Rating System Points

CRS Review Projection
Comparison of Current Manual v. 2013 Manual

	c340	c430	c450	Total
Current	13	241	144	398
Projected	10	217	83	311
Difference	3	-23	-61	-81

CRS Recommendation Additional Points

1	432 g	Enclosures		160		
2	452 a1	Stormwater Plans			75	
3	452 a2	Design Storm			0	
4	432a	Fill Restrictions		130		
5	452 c1	Erosion Control Plans			10	
6	432 b	Freeboard		165		
7	432 k	Coastal A Zone**		400		
8	432 j	Manufactured Home BFE		15		
9	452 d	Water Quality			15	
10	340	Disclosure Requirements	70			
		New Points	70	870	100	1040
		Maximum Net Gain				**959**
		Planning Proposal*	70	740	100	**829**

* Eliminating numbers in gray from the totals - not proposed.
** Can't be implemented until map development complete.

Attachment c3-3
Repetitive Loss Structure Study – Roberta Grove and Senator Circle

The Roberta Grove – Senator Circle Repetitive Loss Area Analysis is presented on the following sixty one pages.

Roberta Grove – Senator Circle
Repetitive Loss Area Analysis
Houma, LA

June 25th, 2013

The University of New Orleans

Center for Hazards Assessment, Response and Technology

(UNO-CHART)

University of New Orleans

www.floodhelp.uno.edu

Supported by FEMA

Table of Contents

List of Figures

List of Tables

Terminology

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

1% chance flood: The flood having a 1% chance of being equaled or exceeded in any given year, is known as the "100-year" or "1% chance" flood

100-year flood: The flood that has one percent (1%) chance of being equaled or exceeded each year.

Base Flood: The base flood is a statistical concept used to ensure that all properties subject to the National Flood Insurance Program are protected to the same degree ("1% chance" or "100-year") against flooding.

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

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 the Base Flood Elevation (BFE) for purposes of floodplain management.

GIS: Geographic Information Systems; integrates hardware, software, and data for capturing, managing, analyzing, and displaying all forms of geographically referenced information in the form of maps, globes, reports, and charts.

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 being the structure into compliance in the event that it is substantially damaged by a flood.

NFIP: National Flood Insurance Program

Repetitive Loss property (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.

Severe Repetitive Loss Property (SRL): A 1-4 family residence that is a repetitive loss property that has had four or more claims of more than $5,000 or two claims that cumulatively exceed the reported building's value.

Substantial Improvement: The repair, reconstruction, or improvement of a structure, the cost of which equals or exceeds 50% of the market value of the structure either, (1) before the improvement or repair is started, or (2) if the structure has been damaged and is being restored, before the damage occurred**.**

UNO-CHART: The University of New Orleans - Center for Hazards Assessment, Response and Technology.

Acknowledgements:

The compilation of this report was managed by Erin P Merrick, CFM, a CHART Research Associate, and Nandini Seth, a Master's Candidate in Urban & Regional Planning at The University of New Orleans. Contributing to this report were French & Associates; FEMA Region VI; Solutient; Monica Farris, Director, UNO-CHART; Pat Gordon, Director, Planning and Zoning; Geoffrey Large MDipMS, CBO, CHCO, CCI, CSI, Assistant Director, Planning and Zoning; Lisa Ledet, CFM, Permits Specialist; Jennifer Gerbasi, CFM, Recovery Planner; Linda Henderson, Community Problem Solver; Duffy Duplantis, GIS Manager, Terrebonne Parish; Wayne Thibodeaux, Executive Director, Houma-Terrebonne Housing Authority; Jan Yakupzack, PHM, Assistant Executive Director, Houma-Terrebonne Housing Authority; Mary Aucoin, Roberta Grove Neighborhood Watch Association; LSU Sea Grant; and the residents of both Roberta Grove and Senator Circle.

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Roberta Grove – Senator Circle Repetitive Loss Area Analysis Executive Summary

Background

The National Flood Insurance Program (NFIP) is administered by the Federal Emergency Management Agency (FEMA) and is continually faced with the task of paying claims while trying to keep the price of flood insurance at an affordable level. It has a particular problem with repetitive and severe repetitive flood loss properties, which are estimated to have cost $13 billion nationwide and $3 billion in Louisiana alone[1] since 1978. Repetitive flood loss properties represent only 1.3% of all flood insurance policies, yet historically they have accounted for nearly one-fourth of the claim payments. Mitigating these repeatedly flooded properties will reduce the overall costs to the NFIP, the communities in which they are located, and the individual homeowners. Ultimately, mitigating repeatedly flooded properties benefits everyone.

Study Area

The study area is comprised of two separate neighborhoods; the Senator Circle and Roberta Grove neighborhoods, both located in the city of Houma. The Roberta Grove neighborhood is bounded to the north by Bayou Terrebonne and East Main Street, to the south by Bayou Chauvin, to the southwest by Senator Circle, and to the East by North Boundary Court. There are 103 buildings located in the Roberta Grove area. Of the 103 residential buildings, 62 (60.19 %) are on FEMA's repetitive loss list, and six (5.82%) of those are considered to be a severe repetitive loss property. The Senator Circle neighborhood in Houma is a public-housing complex. There are 197 units[2] in the circle, of which 50 (25.38 %) are on FEMA's repetitive loss list and none are considered to be severe repetitive loss properties.

Problem Statement

The following bullets summarize the repetitive flooding problems in the areas:

- Structures in both neighborhoods of the study area fall within a high-risk AE Special Flood Hazard Area;
- Flooding is caused by heavy rains, storm surge, and backwater flooding, and further aggravated by two problems:
    - Bayou Chauvin's limited capacity to carry water out of the areas due to being undersized, clogged with debris, and shallowness in some areas; and
    - Bayou Terrebonne overflowing into the study areas.
- The East Houma Surge Levee should add a level of protection from surge waters being funneled up from Lake Boudreaux;
- There are 300 homes and apartments subject to flooding. 112 of the insured properties have been flooded to the extent that they qualify as repetitive loss structures under the NFIP; six of which are severe repetitive loss properties.
- These 112 repetitive loss properties have made 270 flood insurance claims for a total of **$8,770,921.35** since 1978.
- There is an additional **$6,417,450.00** in *all flood insurance claims* (Roberta Grove- Senator Circle study area), of which, some properties meet the repetitive flood loss criteria, but are not on FEMA's repetitive loss list. This is problematic because:
    - It further clouds the true extent of the flooding issues in the areas;

[1] As of December 2012; FEMA, since 1978 when records began.
[2] Each building has at least one unit; most buildings are duplex units.

- Some of the repetitive loss properties in both areas may actually be severe repetitive loss (SRL) properties;
- Being designated as a SRL property triggers a certain mitigation funding mechanism only available to SRL properties.

Recommendations for Terrebonne Parish

- Adopt this Area Analysis according to the process detailed in the 2013 CRS Coordinator's Manual.
- Encourage the owner of repetitive flood loss structures to pursue mitigation measures.
- Continue to assist interested property owners in applying for mitigation grants.
- Improve the drainage out of Bayou Chauvin.
- Institute a ditch maintenance program that encourages homeowners to frequently clear their ditches of debris to ensure open flow for stormwater.
- Assist the Houma-Terrebonne Housing Authority in mitigating the Senator Circle properties.
- Continue to participate in Community Rating System (CRS) and increase the Parish's Class.
- Continue the CRS credited public information activities, such as outreach projects, website, and flood protection assistance, that help residents learn about and implement retrofitting measures.
- As the floodplain management ordinance is being revised, include provisions to provide higher flood protection levels and measures to trigger substantial improvements determinations after repetitive flooding.

Recommendations for the Houma-Terrebonne Housing Authority

- Make sure residents in Senator Circle are aware of the flood threat and what they can do to protect their belongings.
- Make sure residents in Senator Circle are aware of the availability of flood insurance for rental property.
- Review the ability of residents in Senator Circle to make structural changes to their apartments for flood protection purposes.
- Work with the Parish to identify structures eligible for mitigation.

Recommendations for the residents of Roberta Grove and Senator Circle

- Review the mitigation measures listed in this report and implement those that are appropriate.
- Stay up to date with what Terrebonne Parish is doing in regards to flood protection, available online at: www.tpcg.org.
- Purchase or maintain flood insurance policies on the home (if a homeowner) and/or on the contents (homeowner and renters).
- Read through the LSU Homeowner's Handbook to Prepare for Natural Hazards for more information on appropriate mitigation measures, available online at: www.lsu.edu/sglegal/pubs/handbook.htm.
- Keep informed about the changes being made to the NFIP by the implementation of the Biggert-Waters Flood Insurance Reform and Modernization Act of 2012, available online at: www.fema.gov/BW12 or www.floodsmart.gov.

Introduction

Flooding is a problem far too familiar to many people across the United States. Enduring the consequences of flooding over and over again can be quite frustrating. When the water rises, life is disrupted, belongings are ruined, and hard-earned money is spent.

This report has been created in collaboration with the Terrebonne Parish Consolidated Government and the residents in the Roberta Grove and Senator Circle neighborhoods that have repetitively flooded areas and who continually suffer the personal losses and stresses associated with living in a flood-prone house.

The goal is to help homeowners reduce their flood risk by providing a broader understanding of the flooding problems in their neighborhood, and the potential solutions to the continual suffering that results from repetitive flooding. The availability of possible funding sources for certain mitigation options is also discussed.

In this repetitive loss area analysis, flooding issues and potential mitigation measures are discussed for homes and apartments located in the Roberta Grove and Senator Circle neighborhoods. While the homes and apartments in this study are representative of other homes throughout the city of Houma, not all the mitigation measures reviewed in this report are appropriate for all homes in the study area.

There are many stresses associated with repetitive flooding including worry about how high the water may rise, the loss of personal belongings, the possibility of mold, and whether or not neighbors will return after the next event. Adding to this worry is the uncertainty related to the potential solutions:

- Should I elevate and, if so, how high?
- How much a mitigation project will cost?
- What will my neighborhood look like if I am the only one to mitigate, or the only one *not* to mitigate?
- Is there a solution that might work for the entire neighborhood?

Repetitive Loss Area Analysis (RLAA): An approach that identifies repetitive loss areas, evaluates mitigation approaches, and determines the most appropriate alternatives to reduce future losses.

Mitigation: Any sustained action taken to reduce or eliminate long-term risk to life and property from a hazard event (floods, fires, earthquakes, etc.).

Repetitive Loss property (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.

Severe Repetitive Loss Property (SRL): A 1-4 family residence that is a repetitive loss property that has had four or more claims of more than $5,000 or two claims that cumulatively exceed the reported building's value.

These questions are common, and this report attempts to answer them according to the specific situation faced by residents in the Roberta Grove and Senator Circle neighborhoods. Informed residents can become even stronger advocates for policy change at the neighborhood, city, parish, state and even federal levels. Overall, it is hoped that by gaining a better understanding of the flooding issues, neighborhoods can become safer and homeowners will be better able to confront the hazard of flooding

Background

The National Flood Insurance Program (NFIP) is administered by the Federal Emergency Management Agency (FEMA) and is continually faced with the task of paying claims while trying to keep the price of flood insurance at an affordable level.

It has a particular problem with repetitive and severe repetitive flood loss properties, which are estimated to have cost $13 billion nationwide and $3 billion in Louisiana alone[3] since 1978.

Repetitive flood loss properties represent only 1.3% of all flood insurance policies, yet historically they have accounted for nearly one-fourth of the claim payments. Mitigating these repeatedly flooded properties will reduce the overall costs to the NFIP, the communities in which they are located, and the individual homeowners. Ultimately, mitigating repeatedly flooded properties benefits everyone.

The University of New Orleans' Center for Hazards Assessment, Response and Technology (UNO-CHART) receives funding from FEMA to collate data and analyze the repetitive flood loss areas in Louisiana in partnership with local governments, elected officials, residents, and neighborhood associations. Using a Geographic Information System (GIS) and geo-coded flood insurance claims data, repeatedly flooded areas and properties are being prioritized for attention and analysis. In selected locations, UNO-CHART works with local officials and residents to conduct in-depth analyses of the causes and possible solutions to the flooding problem. These efforts are called "Repetitive Loss Area Analyses".

UNO-CHART conducted a repetitive loss area analysis case study in Houma, La. An area analysis follows FEMA guidelines to determine why an area has repeated flood losses and what alternative flood protection measures would help break the cycle of repetitive flooding.

Repetitive Loss Area Analyses are encouraged by and credited under the Community Rating System (CRS), as explained on page 33. Terrebonne Parish participates in the CRS and can receive the credit if this document is adopted and implemented.

The Area

The study area is comprised of the Senator Circle and Roberta Grove neighborhoods, both located in the city of Houma. The Roberta Grove neighborhood is bounded to the north by Bayou Terrebonne and East Main Street, to the south by Bayou Chauvin, to the southwest by Senator Circle, and to the east by North Boundary Court.

There are 103 buildings located in the Roberta Grove area. The area is low lying and predominantly residential. However, there are commercial properties to the north along East Main Street. Of the 103 residential buildings, 62 (60.19 %) are on FEMA's repetitive loss list, and six (5.82%) are considered to be severe repetitive loss properties. The Senator Circle neighborhood in Houma is a public-housing complex. It is bounded to the north by Camellia Avenue, to the south by Bayou Chauvin, and to the east by Prospect Boulevard. There are 197 units[4] in the circle, of which 50 (25.38 %) are on FEMA's repetitive loss list and none are considered to be severe repetitive loss properties. For definitions of repetitive and severe repetitive loss properties, refer to the terminology list on page 3. See the map on the next page for the location of the study areas.

[3] As of December 2012; FEMA, since 1978 when records began.
[4] Each building has at least one unit; most buildings are duplex units.

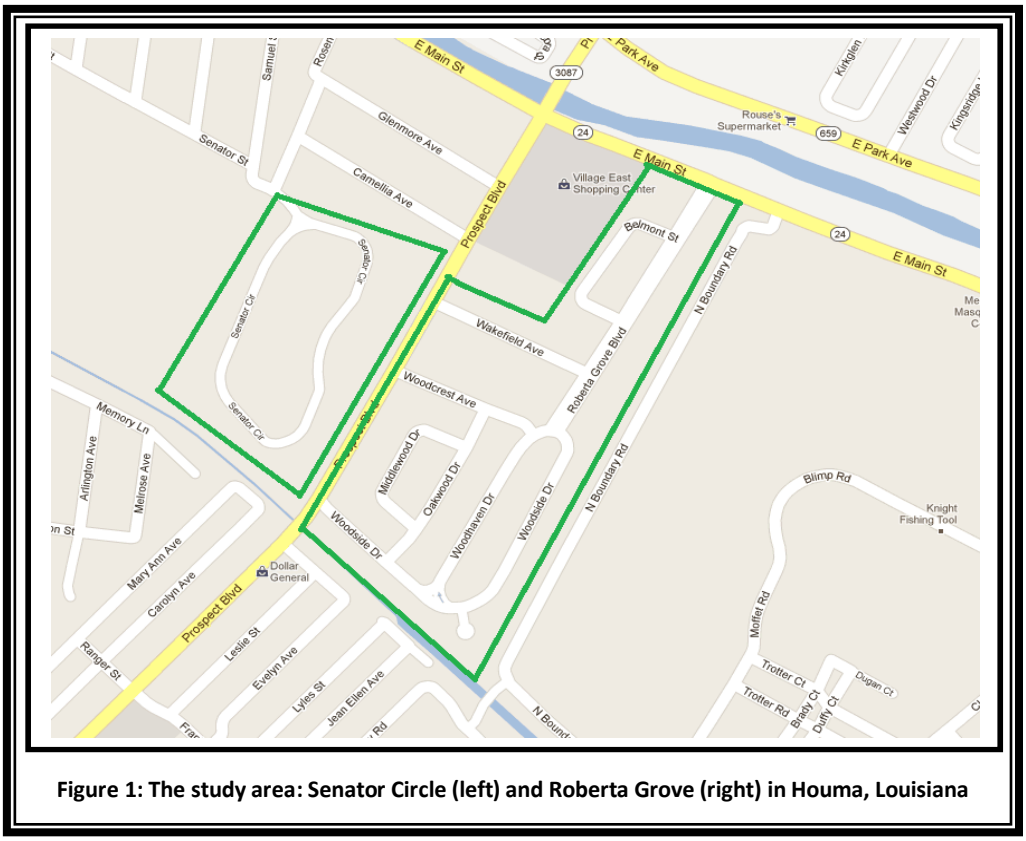


Figure 1: The study area: Senator Circle (left) and Roberta Grove (right) in Houma, Louisiana

The area was selected for this analysis due to the clustering of repetitive loss properties in the neighborhoods which indicates a recurring flooding problem. Local officials also expressed their interest in addressing the repetitive flooding issues in the area making these two neighborhoods ideal to conduct a repetitive loss area analysis.

The Process

In October 2012 after a careful review of repetitive flood loss properties throughout the State of Louisiana and discussions with FEMA Region VI, the UNO-CHART team and Terrebonne Parish officials conducted the repetitive loss area analysis (RLAA). Terrebonne Parish, a Community Rating System (CRS) Class 6 is one of only three Class 6 CRS Communities in the State of Louisiana. Given its obvious commitment to floodplain management excellence, Terrebonne Parish was viewed as a good community partner for this project. See page 33 for more information on the CRS program.

Figure 2: UNO-CHART team members presenting to Parish Officials

After meeting with Planning & Zoning officials, the Councilmen representing the proposed study areas, the Parish President, and other Parish officials, the final study area was selected. For the first time in the UNO-CHART Repetitive Loss Project, the study area consists of two separate and unique neighborhoods: Senator Circle and Roberta Grove.

This project follows a five step CRS process. UNO-CHART has always taken a social science perspective during the process, and FEMA recently offered a new approach to emergency management that melds the two methods: The Whole Community Approach.

The Whole Community Approach: FEMA has come out with a new approach to emergency management: The Whole Community Approach. This philosophical approach to emergency management seeks to leverage the social and cultural resources of a community along that of its private and non-profits. In essence, this approach brings together the *whole* community in order to generate a comprehensive view of the hazards to which that community is vulnerable too as well as to cooperatively develop solutions to mitigate those risks.[5] By applying the Whole Community Approach to RLAAs the hope is that the local officials and residents living in repetitively flooded communities will come to see the problem as a *shared* issue and not just one for the local government or residents to handle on their own.

The five step process in the 2013 *CRS Coordinator's manual* for conducting a RLAA is as follows:

> **Step 1:** Advise all the property owners in the repetitive flood loss area that the analysis will be conducted and request their input on the hazard and recommended action through informational meeting.
>
> **Step 2:** Contact agencies or organizations that may have plans that could affect the cause or impacts of the flooding.
>
> **Step 3**: Collect data on the analysis area and each building in the identified study area within the neighborhood to determine the cause(s) of the repetitive damage.
>
> **Step 4:** Review alternative mitigation approaches and determine whether any property protection measures or drainage improvements are feasible.
>
> **Step 5**: Document the findings, including information gathered from agencies and organizations, and relevant maps of the analysis area.

Step 1: Neighborhood Notification

The first step in five-step CRS process is to notify the residents in the area about the project. Considering that this study area contains two separate and unique neighborhoods; the decision was made by the UNO-CHART team to divide the study area into two in order to streamline the process.

On January 2nd and 3rd of 2013, Terrebonne Parish sent out a letter to the homeowners introducing them to UNO-CHART and the project. Accompanying the letter was a data sheet that asked residents basic questions about their building and their flooding history. The letters also invited residents to an "Informational Meeting" where the project process would be explained more in detail than it could be in the letter.

[5] FEMA *A Whole Community Approach to Emergency Management: Principles , Themes, and Pathways for Action*; FDOC104-008-1, 12/2011

Informational Meetings: Residents of both neighborhoods were given the opportunity to either return the data sheets at the Informational Meetings or to drop them off with a neighborhood representative if they were unable to make the meetings.

The UNO-CHART team worked with Terrebonne Parish and the Roberta Grove Neighborhood Watch Association to schedule the Informational Meeting for January 17th, with the letters being mailed out two weeks prior on January 3rd. Of the 134 letters mailed out, 31 came back as "undeliverable" or "vacant." Out of the remaining 103, 16 were returned at the Informational Meeting.

The UNO-CHART team scheduled the Informational Meeting for Senator Circle residents with The Houma-Terrebonne Housing Authority for January 16th. The letters were mailed to the residents on January 2nd, two weeks before the scheduled meeting. Of the 300 letters mailed out, 103 came back as "undeliverable" or "vacant." Out of the remaining 197 letters, eight were returned at the Informational Meeting.

Figure 3: Residents at the Senator Circle Informational Meeting (top); and the Roberta Grove Informational Meeting (bottom)

More detailed information on the data sheets is discussed on page 23, while the Informational Meetings are discussed on page 22 under "On-site Data Collection." Copies of the letters and data sheets and summary statistics are found in Appendices A, B, and C.

Step 2: Review Plans

The second step in the CRS process is reviewing of the plans and flood insurance data that pertain to the area. The plans, insurance maps and drainage information were collected from several agencies and departments. This report also includes a review of stakeholders who contributed to the project. Coordination with relevant agencies, offices, and organizations is an important step in the analysis process. The following agencies and organizations were contacted by the UNO-CHART team in order to complete this analysis:

- FEMA Region VI, Mitigation Division
- Terrebonne Parish President's Office
- Terrebonne Parish Council
- Terrebonne Parish Planning & Zoning Department
- Terrebonne Parish Public Works Department
- Roberta Grove Neighborhood Watch Association
- Houma-Terrebonne Housing Authority
- LSU Sea Grant

This step helps to open lines of communication among those interested in flood protection in the Roberta Grove and Senator Circle area, and to see what other groups are doing to address the flood problems.

The UNO-CHART team collected and reviewed the following reports/data:

A. Terrebonne Parish, Flood Damage Prevention Ordinance update, (in progress)
B. Terrebonne Parish Hazard Mitigation Plan Update, November 2009
C. Vision 2030: Building Sustainable Communities; Terrebonne's Plan for Its Future
D. Flood Insurance Data
E. Drainage Information

A. Terrebonne Parish, Flood Damage Prevention Ordinance:

In order to reduce flood losses, the Terrebonne Parish Flood Damage Prevention Ordinance requires the following in all areas of special flood hazards:

(1) All new construction and substantial improvements shall be designed (or modified) and adequately anchored to prevent flotation, collapse, or lateral movement of the structure resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy;

(2) All new construction or substantial improvements shall be constructed by methods and practices that minimize flood damage;

(3) All new construction or substantial improvements shall be constructed with materials resistant to flood damage;

(4) All new construction or substantial improvements shall be constructed with electrical, heating, ventilation, plumbing, and air conditioning equipment and other service facilities that are designed and/or located so as to prevent water from entering or accumulating within the components during conditions of flooding;

(5) All new and replacement water supply systems shall be designed to minimize or eliminate infiltration of floodwaters into the system;

(6) New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of floodwaters into the systems and discharge from the systems into floodwaters; and

(7) On-site waste disposal systems shall be located to avoid impairment to them or contamination from them during flooding.[6]

The ordinance also states that encroachments in adopted, regulatory floodways are prohibited unless it can be demonstrated that the proposed encroachment would not result in any increase in flood levels within the city during the occurrence of the base flood discharge. This is intended to limit encroachments such as fill, new construction, substantial improvements or other development that would otherwise increase flood heights on other properties. This means there are restrictions on the construction of new buildings, additions, levees, floodwalls, or placing fill on properties in the floodway.

[6] Municode, accessed online 01/22/13: http://library.municode.com/index.aspx?clientId=10737

Since local ordinances determine the threshold at which substantial damage and /or repetitive claims are reached, adopting language that would lower these thresholds would benefit the homeowners of repetitive loss properties.

According to the Ordinance, *substantial improvement* means any reconstruction, rehabilitation, addition, cumulative substantial improvement (CSI) or other improvement of a structure, the cost of which equals or exceeds fifty (50) percent of the market value of the structure before "start of construction" of the improvement, and shall be a cumulative cost of all previous permitted work and proposed work to the structure to determine a cumulative substantial improvement. This includes structures which have incurred "substantial damage," regardless of the actual repair work performed. The term does not, however, include either:

- Any project for improvement of a structure to correct existing violations of state or local health, sanitary, or safety code specifications which have been identified by the local code enforcement official and which are the minimum necessary conditions; or
- Any alteration of a "historic structure" provided that the alteration will not preclude the structure's continued designation as a "historic structure."

Adopting alternative language allows for cumulative damage to reach the threshold for federal mitigation resources more quickly, meaning that some of the properties in both study areas that sustain minor damage regularly would qualify for mitigation assistance.

As of March 2013, Terrebonne Parish is amending its Flood Damage Prevention Ordinance. Focus groups are being organized in order to shape and guide the ordinance amendments. Residents interested in the progress of this ordinance amendment should check the Parish's website for more information[7] or contact the Terrebonne Parish Planning & Zoning Department at (985) 873-6569.

B. Terrebonne Parish Hazard Mitigation Plan, November 2009**:**
In 2009, Terrebonne Parish ("the Parish") updated its Parish-wide hazard mitigation plan ("the Plan"). In the Plan, it is noted that in the Parish 94.6% of the total acreage is "forested, wetlands or water," and that only 5.6% is "urbanized and/or under cultivation".[8] With developed land being limited to less than 6% of the land in Terrebonne Parish, officials and residents alike share the risk and the need to be proactive in protecting themselves from the surrounding waters.

In the Plan, several hazards are identified and described as having the potential to affect the Parish. A subsequent list was developed detailing the hazards that were more likely to occur and expose the Parish and its residents to the risks associated with them.

There were six (6) hazards that made the list of "prevalent hazards to the community":[9]

(1) Levee Failure
(2) Flooding
(3) Hurricanes and Coastal/Tropical Storms

[7] www.tpcg.org
[8] Terrebonne Parish Hazard Mitigation Plan Update 2009; p 10
[9] Terrebonne Parish Hazard Mitigation Plan Update 2009; pc2-10

(4) Saltwater Intrusion
(5) Tornadoes
(6) Subsidence

Of these six hazards identified, flooding has been identified as the hazard with the greatest potential to affect the Parish and its communities. Flooding in the Parish has the probability to take many forms, and it is important for residents to understand the different types of flooding they are susceptible to and the ways they can mitigate themselves against flood loss.

Flooding in the Parish can come from any of the following sources:

- Levee failure resulting from extreme flood events
- Flooding from riverine sources, stormwater, tropical storms, and hurricanes in the following forms:
    - Riverine (primarily high water related to rivers and bayous)
    - Stormwater (rain fall)
    - Surge
    - Back water flooding (as the result of riverine flooding and surge)
- Wind damage resulting from hurricanes, tropical storms, and tornadoes
- Saltwater intrusion resulting from storm surge[10]

The Plan has a detailed "Hazard Mitigation Strategies" section that outlines the actions the Parish will pursue to protect its citizens and resources from the various hazards which the region is prone. There is one objective and three Action Items that are relevant to this project. They are as follows:[11]

Objective 3.1: Eliminate the threat of flood damage to structures in Terrebonne Parish including storm surge and levee failure

Action Item 3.1.1 Upgrade current drainage infrastructure

A project is in the works to provide protection to the study area. The Bayou Chauvin Drainage Improvements are currently under design, funded for 2013, and are designed to protect the study areas from rain events internal to the system. A hydraulic study was analyzed for the system improvements. More about this project is listed under the Step 2: review Plans section E: "Drainage Information" found on page 17.

Action Item 3.1.2 Construct new flood control structures and levees

The East Houma Surge Levee is a levee that stretches between LA 56 and LA 57 and acts as a barrier to surge waters being funneled up from Lake Boudreaux. The East Houma Surge Levee was built to 9-9.5 feet so that settlement and consolidation could take place and provide for a final levee elevation of +8.0 feet.

Action Item 3.1.3 Elevate or acquire all RL and SRL structures in Terrebonne Parish

The Parish has elevated 20 properties; 13 of which were RL and 5 of which were SRL in the Roberta Grove neighborhood.[12] The Parish has also acquired and cleared 5 properties, all of which were RL properties in the Roberta Grove neighborhood.

[10] Terrebonne Parish Hazard Mitigation Plan Update 2009, p 2c-10-11
[11] Only action items relevant to this report were included here; for a full list of the strategies, please see appendix E of this report located on page 43.

C. Vision 2030: Building Sustainable Communities; Terrebonne's Plan for Its Future**:**

Terrebonne's Comprehensive Plan "Vision 2030" does specifically mention hazard mitigation, but not in the same depths as the Parish's Hazard Mitigation Plan. "Vision 2030" does briefly discuss the Parish's involvement in the Community Rating System (CRS). The Parish's participation and more details about the CRS will be discussed on page 33 of this report.

D. Flood Insurance Data

The team reviewed three sources of flood insurance data. Those sources of data are:

A. Flood Insurance Rate Map (FIRM)
B. Preliminary Digital Flood Insurance Rate Map (DFIRM)
    I. DFIRM Appeal

A. Terrebonne Parish Flood Insurance Rate Map, May 19, 1981: A Flood Insurance Rate Map (FIRM), published by FEMA, shows identified flood risk according to zones of severity and is used in setting flood insurance rates. The regulatory floodplain used by FEMA for the floodplain management and insurance aspects of the NFIP is based on the elevation of the 1% chance flood or base flood. The base flood is a statistical concept used to ensure that all properties subject to the National Flood Insurance Program are protected to the same degree against flooding. For another frame of reference, the 100-year flood has a 26% chance of occurring over the life of a 30-year mortgage. It is becoming more common to refer to the 100-year storm as the 1% annual chance flood. It is important to note that more frequent flooding does occur in the 100-year floodplain, as witnessed by the number of repetitive loss properties. The study areas fall in the same flood zone, though they have differing base flood elevations (BFE). Roberta Grove and Senator Circle are in the AE Zone on the effective FIRM for Houma.

Roberta Grove is in an AE EL9 Zone, while Senator Circle is in an AE EL8 Zone; the numbers behind the "AE" indicate the BFE for that area which is the elevation of the 1% chance annual storm above sea level.[13]

It should also be noted that the BFE is above *mean sea level (MSL),* not above *ground level*. The ground elevation in both areas varies between 4.9 feet and 5.2 feet above MSL.[14] The only way to have an accurate reading of the ground elevation is to have a licensed land surveyor, architect, or engineer complete an elevation certificate.

[12] The remaining two properties were neither RL nor SRL properties
[13] FIRM & DFIRM images (Figure 4) from: http://www.lsuagcenter.com/en/family_home/home/design_construction/Laws+Licenses+Permits/Getting+a+Permit/Your+Flood+Zone/flood_maps/
[14] This is not exact information and should not be used for any building or insurances purposes. The information presented here is general.

Figure 4: The effective FIRM for the study areas

B. Preliminary Digital Flood Insurance Rate Map (DFIRM): As part of the FEMA Map Modernization Program, FEMA has been charged with updating and developing Digital Flood Insurance Rate Maps (DFIRMs).

The first DFIRMs for Louisiana were released beginning in 2008; some parishes saw little to no change, while some of the coastal parishes saw dramatic changes. Please see DFIRM in the following page:

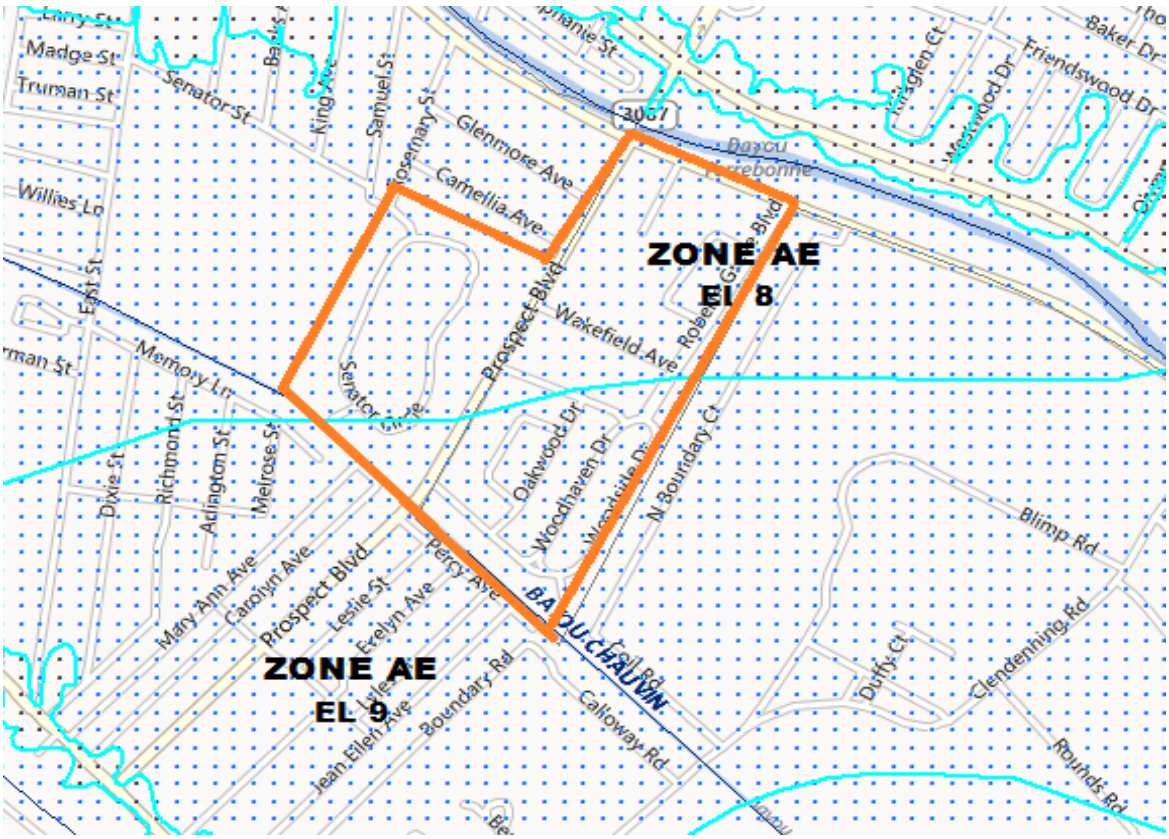


Figure 5: The Preliminary DFIRM for the study areas

BI. DFIRM Appeal: Terrebonne Parish appealed the release of its Preliminary DFIRMs after it was determined that a majority of the Parish would see a dramatic increase in the BFE. The Parish, along with Shaw Coastal Inc., examined the data used to develop the 2009 Preliminary DFIRMS and found deficiencies that warranted an official appeal of the new DFIRM for Terrebonne Parish.[15]
At this time, the effective FIRM for the City of Houma is still May 1981 and May 1985 for the rest of Terrebonne Parish. Residents who are interested in reading the official appeal in its entirety can find it on Terrebonne Parish's website under the Planning & Zoning section, or available online at http://www.tpcg.org/view.php?f=planning

E. Drainage Information

Terrebonne Parish relies heavily on levees for forced drainage and pumping stations throughout the parish, much like the rest of Southeast Louisiana. Given the relatively flat ground elevation, Terrebonne Parish uses levees not only to reduce storm surge, but also "to force water to drain in certain patterns".[16]

[15] Terrebonne Parish Appeal of FEMAs 2009 Preliminary DFIRMs, September 2009, pg. 42
[16] Terrebonne Parish Hazard Mitigation Plan Update 2009, pc2-22

There are 157 pump stations located in the Parish that work in conjunction with the levees to move water out of the parish during a storm or rain event. The forced drainage, levees, and the drainage pumps form 61 individual drainage systems that are managed by the Terrebonne Parish Department of Public Works.[17]

As previously mentioned, both study areas have two bayous near them: Bayou Chauvin and Bayou Terrebonne. Residents in both areas mentioned that Bayou Chauvin is in need of dredging, widening in parts, and clearing. Bayou Chauvin actually runs through Senator Circle, though it is shallow to the point of being considered a swale (see Figure 6).

Figure 6: Bayou Chauvin in Senator Circle

UNO-CHART reviewed Terrebonne Parish's Hazard Mitigation Plan's Action Items where the Parish listed the projects they would pursue to reduce risk in the parish. One of those action items, "Upgrade current drainage infrastructure" included a study that addresses Bayou Chauvin. The details of this study are discussed under Step 4 - Mitigation Measures; under Drainage Improvements on page 31.

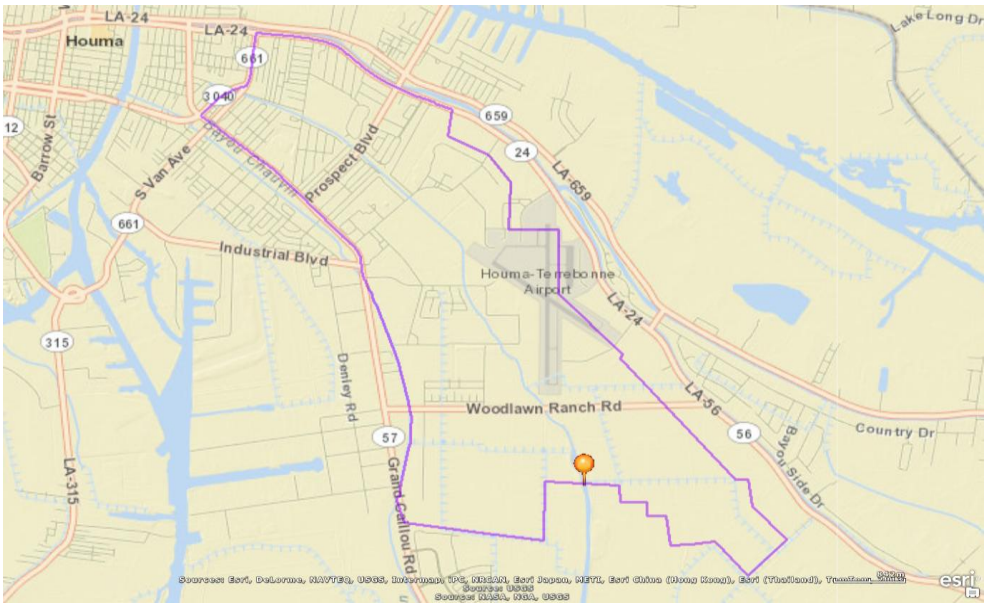


Figure 7: The forced drainage area and location of the Woodlawn Pump Station

[17] Terrebonne Parish Appeal of FEMAs 2009 Preliminary DFIRMs, September 2009, pg 14
[17] Terrebonne Parish Hazard Mitigation Plan Update 2009
[17] Tropical Cyclone Report: Hurricane Lili, National Oceanic and Atmospheric Administration (NOAA)

Step 3: Building Data

A. Claims 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 claims 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 data for any individual property. Rather, it discusses them only in summary form. UNO-CHART obtained claims data from FEMA Region VI for all repetitive loss properties in the Roberta Grove-Senator Circle study area. The results are presented below and separated by neighborhood:

Roberta Grove: There are 62 (60.19%) properties within the 103 property study area that qualify as repetitive loss. Of those 62 repetitive loss properties, six are considered to be severe repetitive loss property. The homeowners for the 62 repetitive loss properties have made 170 claims, and received $7,785,536.02 in flood insurance payments since 1978. The average repetitive flood loss claim is $45,797.27.

Senator Circle: There are 50 (25.38%) units within the 197 building units of the study area that qualify as repetitive loss. Of those 50 repetitive loss properties, none of them are considered to be severe repetitive loss properties. The homeowners for the 50 repetitive loss properties have made 100 claims, and received $ 985,385.33 in flood insurance payments since 1978. The average repetitive flood loss claim is $19,707.70.

***Major Flood Events**:* There have been five major flood events in the Roberta Grove- Senator Circle study area: Hurricane Lili in September 2002, Hurricanes Katrina and Rita in September 2005 and Hurricanes Gustav and Ike in September 2008. In September 2002, 100 properties/units out of combined total of 112 repetitive loss properties/units in the Roberta Grove-Senator Circle study area filed a claim. The total loss amount for this event is the second largest for the study area, totaling $2,618,200.80.

Lili became a hurricane on September 30, 2002 while passing over Cayman Brac and the Little Cayman Islands. With a wind speed of approximately 80-knots, Hurricane Lili made landfall on the Louisiana coast on October 3, 2002 as a category 1 hurricane. Strong winds toppled trees onto houses and into roadways, stripped shingles from roofs, and blew out windows. A combination of storm surge and rain caused levees to fail in the southeastern part of the state. Lili also temporarily curtailed all oil production in the Gulf of Mexico. The latest insured property damage total from the American Insurance Services Group is $415 million for Louisiana.[18] Terrebonne Parish was declared a major disaster area by the President because of Hurricane Lili.

The storm was responsible for damage associated with both wind (greater than 78 miles per hour) and storm surge (6 to 8 feet) in Terrebonne Parish. The strongest effects of the storm were experienced in the southern portion of the parish. Damage included widespread power outages, destruction of approximately 35% of the parish sugarcane crop, substantial damage of more than 300 homes, and breached levees.[19]

[18] Tropical Cyclone Report: Hurricane Lili, National Oceanic and Atmospheric Administration (NOAA)

[19] Terrebonne Parish Hazard Mitigation Plan Update 2009

Event Date	Claims Made	Total Loss ($)
September 1998 (Heavy Rain event)	16	$220,947.97
September 2002 (Hurricane Lili)	50	$1,917,145.66
September 2005 (Hurricane Katrina and Rita)	37	$ 1,699,596.05
September 2008 (Hurricane Ike and Gustav)	55	$ 3,829,502.43

Table 1: Major Repetitive Loss Claims for the Roberta Grove Study Area

Event Date	Claims Made	Total Loss
September 2002 (Hurricane Lili)	50	$701,055.14
September 2005 (Hurricane Katrina and Rita)	49	$215,693.41

Table 2: Major Repetitive Loss Claims for the Senator Circle Study Area

In August and September 2005, 86 of the 112 repetitive flood loss properties filed a claim. Hurricane Katrina made U.S. landfall for the second time on August 29, 2005, near Buras/Triumph, Louisiana. The hurricane was a Category 3 storm with wind speeds of 125 miles per hour. Much of that damage, which was limited to southeast Louisiana and Terrebonne Parish, was caused by high winds and storm surge[20]. Hurricane Rita made landfall on September 24, 2005, along the Louisiana-Texas border near Johnsons Bayou, Louisiana. The hurricane came ashore as a Category 3 storm with sustained winds of 120 mph. Hurricane Rita initially followed a path along the western Louisiana-Texas border and then turned northwest. It caused an estimated $10 billion in damage.[21] Despite the fact that the eye of the storm made landfall approximately 190 miles west of Houma, Hurricane Rita had a significant impact on Terrebonne Parish—a greater impact than Hurricane Katrina.

The impact was largely a result of storm surge that caused extensive flooding, primarily south of Houma. Reportedly, all levees south of the Intracoastal Canal were breached and more than 10,000 homes and businesses were flooded. Interestingly, there were just two claims during Hurricane Katrina in our Roberta Grove- Senator Circle study area.

In September 2008, Hurricanes Gustav and Ike impacted the state of Louisiana. Gustav, a strong Category 2 hurricane, made landfall on September 1st in Terrebonne Parish and on September 12th and 13th Ike's storm surge battered most of the state's coastline. Hurricane Gustav emerged into the southeast Gulf of Mexico as a major category 3 Hurricane with rainfall considerably ranging from around

[20] Terrebonne Parish Hazard Mitigation Plan Update 2009

[21] National Oceanic and Atmospheric Administration

4 to 10 inches. Hurricane Ike made a landfall as a Category 2 hurricane with a surge height of 4-6 ft. affecting east Houma and flooding the Intracoastal Waterway and Houma Navigation Canal.

Louisiana Economic Development (LED) reported that Gustav: "followed a northwest path into central Louisiana, causing widespread physical damage, power outages, and/or flooding across the vast majority of parishes in Louisiana."

Preliminary estimates of the combined total physical damage in Louisiana from Hurricanes Gustav and Ike range from roughly $8 billion to $20 billion. Hurricane Gustav caused severe damage to Terrebonne Parish including scattered power outages, knocking down trees, smashing roofs and burning of houses. 56 repetitive loss properties out of the combined total of 112 repetitive flood loss properties filed a claim. The total loss amount for this event is the largest at $3,898,139.21.

All Claims: The NFIP tracks all flood insurance claims, not just the repetitive loss flood insurance claims. The UNO-CHART team investigated whether or not properties in the study areas were *not* considered to be repetitive loss properties, but had still made flood insurance claims. The reason for this was to show the extent to which the study areas were susceptible to flooding.

Senator Circle	**# of properties**	**# of claims made**	**Total Loss**
All Claims List	150	389	$5,251,474.00
RL properties	50	100	$985,385.33
Roberta Grove	**# of properties**	**# of claims made**	**Total Loss**
All Claims List	13	21	$1,165,976.00
RL properties	62	170	$ 7,785,536.00

Table 3: Repetitive loss properties that had claims placed in the wrong file

What was found, however, was that not only were there other properties in the area that had made flood insurance claims, there were also repetitive loss properties that had made claims but did *not appear* on the repetitive loss list. This means that there are properties on the repetitive loss list that have *additional* claims that are not included in the repetitive loss totals. Looking at the table above, there were 150 units[22] in Senator Circle that have made 389 claims. Of those 150 units, some of them seem to meet the repetitive loss criteria.

[22] Because of how the data was entered, it is impossible to decipher if the claims were made by one or both.

That means, for Senator Circle there is additional $5,251,474.00 worth of flood insurance claims payments, of which some of the buildings seem to meet Repetitive flood loss criteria but do not show up on the FEMA repetitive loss list. For Roberta Grove, there is additional $ 1,165,976 worth of repetitive loss flood insurance claims, some of the properties seems to meet the repetitive flood loss but are not included on the FEMA list.

The implications of this are that:

a) The true extent of the flooding issue is not clear;

b) Some of these repetitive loss properties may *actually be* severe repetitive loss properties; and

c) Being designated as a severe repetitive loss property opens certain funding mechanisms that are not open to regular repetitive loss properties.

This is an issue that is common across the nation. It can be difficult to ensure that flood insurance claims from a single property are entered in the same manner because it is hardly ever the same person who is entering the information into the system each time a claim is filed. One person may write down an address using an abbreviation, while another person writes out the full address. This can result in multiple, but different, entries for the same address.

B. <u>On-site Data Collection</u>

On January 16th and 17th, 2013 the UNO-CHART team visited the study areas and collected data on each property. The team collected information such as the estimated elevation of each structure above the street and the grade, the type of foundation, and the type of structure.

- In Roberta Grove, 90 (82%) structures in the area are built slab-on-grade and 22 (20%) are elevated on a crawlspace. The average height above grade is actually at grade (0-1 feet) for most structures in the area (81.81%).
    - 4.5% of the structures are elevated 1-2 feet above grade.
    - 0.90% of the structures are elevated 2-4 feet above grade.
    - 10% of the structures are elevated 4-5 feet above grade.
    - 2.7% of the structures are elevated 5-6 feet above grade.

  109 buildings (98.19%) in Roberta Grove are at the street level; 97% of all structures are single-story, and a good number (42.69%) are wood frame buildings. A summary of this data is found in Appendix D.

- All the structures in Senator Circle are built slab-on-grade. The average height is actually at ground level (0-1 feet) for all the structures in the area while just the security complex is elevated 1-2 feet above grade. Average elevation above street is approximately 1-2 feet for all the housing units. All of them (100%) are single-story and brick-faced buildings. A Summary of this data is found in Appendix D.

<u>Informational Meetings:</u> After the on-site data collection, UNO-CHART along with the Parish invited residents to Informational Meetings to explain the project and process in more detail than what was in the introductory letter.

The Roberta Grove neighborhood Informational Meeting was scheduled in conjunction with its Neighborhood Watch organization. That meeting was held on January 17th at the Gymnastics Development Center. Representatives from the Parish were in attendance as well as 27 residents.

The Senator Circle neighborhood Informational Meeting was held on January 16th at the Community Center located within the neighborhood. Representatives from the Housing Authority and the Parish were in attendance as well as Councilman John Navy and eight residents from the neighborhood.

Residents at both meetings were presented with an overview of the process and purpose of the RLAA. They were also given the opportunity to fill out and return their data sheets and ask questions. Residents at both meetings expressed concern over the flooding issues and the possibility of exacting real change to address the risk.

C. Data Sheets

As discussed in Step 1: Neighborhood Notification, the letter that was mailed out to the residents included a data sheet. This data sheet offered residents the opportunity to provide UNO-CHART with details about their flooding experiences and to voice their concerns regarding the flooding in the area.

The UNO-CHART team mailed 134 letters and data sheets in the Roberta Grove neighborhood; 31 came back as "undeliverable" or "vacant." Of the remaining 103, 16 were returned filled out at the Informational Meeting. The Roberta Grove neighborhood had a return rate of 15.5% for the data sheets. The residents in Roberta Grove who completed their data sheet and turned them in to the UNO-CHART team offered insight into the flooding issues in the area:

- 62.5% have reported their property being flooded or having a water problem.
- The most reported flood events were Hurricane Gustav and on September 1st, 2008.
- 31.25% of respondents cite drainage from a nearby home as the reason they have flooded.
- 43.75% of respondents cite a clogged or undersized drainage ditch as the source of their flooding.
- 75% of respondents have reported taking on a mitigation measure to protect their property.

The UNO-CHART team mailed out 300 letters and data sheets in the Senator Circle neighborhood with 103 returned as "undeliverable" or "vacant." Out of the remaining 197 letters, eight were returned at the Informational Meeting. Senator Circle had a return rate of 4% for the data sheets. For those residents who turned in their data sheets, it was reported that:

- 37.5% have reported their property being flooded or having a water problem.
- The most reported flood events were Hurricane Ike on September 12th and 13th, 2008.
- 62.5% of respondents cite drainage from a nearby home as the reason they have flooded.
- 62.5% of respondents cite a clogged or undersized drainage ditch as the source of their flooding.
- 50% of respondents have reported taking on a mitigation measure to protect their property.

The full results of the homeowners' data sheets are found in Appendices A and B of this report.

Problem Statement

Based on the data collected from the five sources of information (community reports and plans, flood insurance data, drainage information, on-site surveying, and property owners), the following bullets summarize the repetitive flooding problems in the areas:

- Structures in both neighborhoods of the study area fall within a high-risk AE Special Flood Hazard Area;
- Flooding is caused by heavy rains, storm surge, and backwater flooding, and further aggravated by two problems:
    - Bayou Chauvin's limited capacity to carry water out of the areas due to being undersized, clogged with debris, and shallowness in some areas;
    - Bayou Terrebonne overflowing into the areas;
- The East Houma Surge Levee should add a level of protection from surge waters being funneled up from Lake Boudreaux;
- There are 300 homes and apartments subject to flooding. 112 of the insured properties have been flooded to the extent that they qualify as repetitive loss structures under the NFIP; six of which are severe repetitive loss properties.
- These 112 repetitive loss properties have made 270 flood insurance claims for a total of **$8,770,921.35** since 1978.
- There is an additional **$6,417,450.00** in all flood insurance claims, some of which meet the repetitive flood loss criteria, but are not on FEMA's repetitive loss list. This is problematic because:
    - It further clouds the true extent of the flooding issues in the areas;
    - Some of the repetitive loss properties in both areas may actually be severe repetitive loss (SRL) properties;
    - Being designated as a SRL property triggers a certain mitigation funding mechanism only available to SRL properties.

Step 4: Mitigation Measures

Knowing the flooding history, and the types and condition of buildings in the area leads to the third step in the area analysis procedure – a review of alternative mitigation approaches to protect properties from flood damage.

Property owners should consider the following alternatives, but understand they are not all guaranteed to provide protection at different levels of flooding. Nine approaches were reviewed:

I. Elevating the houses above the 100-year flood level
II. Barriers to floodwaters
III. Dry floodproofing
IV. Utility protection
V. Drainage improvements
VI. Drainage maintenance
VII. Maintaining flood insurance coverage on the building

It should be noted that the residents in Senator Circle are limited to what mitigation measures they can implement as they are renters. This applies to renters in Roberta Grove as well. There is also a section that covers funding following the discussion of mitigation measures.

I. Elevation

Raising the structure above the flood level is generally viewed as the best flood protection measure, short of removing the building from the floodplain. All damageable portions of the building and its contents are high and dry during a flood, which flows under the building instead of into the house. Houses can be elevated on fill, posts/piles, or a crawlspace. A house elevated on fill requires adding a specific type of dirt to a lot and building the house on top of the added dirt. A house elevated on posts/piles is either built or raised on a foundation of piers that are driven into the earth and rise high enough above the ground to elevate the house above the flow of flood water. Terrebonne Parish has already raised a number of properties in Roberta Grove, and is currently developing a grant application on behalf of the Houma-Terrebonne Housing Authority to try and raise some units in Senator Circle.

Figure 8: An elevated home in the Roberta Grove study area; no buildings in Senator Circle are elevated

A house elevated on a crawlspace is built or raised on a continuous wall-like foundation that elevates the house above the flood level. If a crawlspace is used, it is important to include vents or openings in the crawlspace that are appropriately sized: one square inch for each square foot of the building's footprint. Figure 8 shows an elevated structure in the Roberta Grove study area. No structures in Senator Circle were elevated.

A. Cost: Most of the cost to elevate a building is in the preparation and foundation construction. The cost to elevate six feet is little more than the cost to go up two feet. Elevation is usually cost-effective for wood frame buildings on posts/piles or crawlspace because it is easiest to get lifting equipment under the floor and disruption to the habitable part of the house is minimal.

Figure 9: Example of Roberta Grove Neighborhood, TS Lee 2011

Elevating a slab house is much more costly and disruptive. In Senator Circle, 100% of the buildings in the study area are slab-on-grade, while in Roberta Grove, 82% of the homes are slab-on-grade. The actual cost of elevating a particular building depends on factors such as its condition, whether it is masonry or brick faced, and if additions have been added on over time.

While the cost of elevating a home can be high, there are funding programs that can help. The usual arrangement is for a FEMA grant to pay 75% of the cost while the owner pays the other 25%. In the case of elevating a slab foundation, the homeowner's portion could be as high as $25,000 or more. In some cases, assistance can be provided by the Increased Cost of Compliance (ICC) provision of a flood insurance claim payment, which is discussed on page 35, or state funds.

B. Feasibility: Federal funding support for an elevation project requires a study that shows that the benefits of the project exceed the cost of the elevation. Project benefits include future savings in insurance claims that would otherwise be paid on the structure. Elevating a masonry home or a slab can cost over $100,000, which means that benefit/cost ratios may be low. Looking at each property individually could result in funding for the worst case properties, i.e., those that are lowest, subject to the most frequent flooding, and in good enough condition to elevate.

II. Barriers to Floodwaters

Small floodwalls, levees, or berms constructed around one or more properties are more dependable if flood depths are less than 3 feet and floodwaters rise and fall quickly. Small floodwalls are appropriate for some of the homes in the Roberta Grove study area, since 60% of the respondents in Roberta Grove and 12.5% in Senator Circle said they had experienced up to 3 feet of floodwater during a flood event.

Homes that typically receive 3 feet of floodwater or less, or where the water does not stay up for a considerable amount of time, can benefit from small floodwalls, levees or berms. Levees and berms are more suitable for larger lots, and small floodwalls that are located close to the house are appropriate for suburban style neighborhoods with front and side yard space. Given the suburban setting in both study areas, floodwalls are more appropriate than levees and berms that take up space in the smaller lots. Given the flood depths reported by residents on the returned data sheets, barriers could be an appropriate mitigation measure for some homes in both areas. However, the residents in the Senator Circle study area are not allowed to make structural changes to their properties as they are renters.

In Roberta Grove, barriers could also be appropriate, although residents who experience floodwaters that remain for several hours or days should include internal drainage provisions, as seepage can occur and water will end up inside the barrier. The more permeable the soil, the more floodwaters seep under the barrier. It is important to have a soil sample checked by an engineer to determine rate of permeability. Homeowners who are interested in constructing a barrier to protect their house should consider the following requirements:

- A method to close openings, such as the door in the photo in Figure 16 on page 29. Generally, this requires "human intervention," meaning someone needs to be available and have enough time to take action.
- A system to prevent sanitary sewer backup from flowing into the building.
- Internal drainage provisions are also recommended, including:
    - A system of drain tile (perforated pipes) that collects water that falls or seeps into the protected area and sends it to a collecting basin or "sump,"
    - A sump pump to send the collected water outside the barrier (Figure 11), and
    - Power to operate the sump pump around the clock during a storm.

Figure 10: This home is surrounded by a floodwall that doubles as a planter. The garage door must be sandbagged during a flood event

Figure 11: Water collects in this basin, or sump, and is pumped out by a sump pump

A. Cost: The cost of a local barrier depends on the depth of flooding and the amount of engineering put into the design. Where flooding is only inches deep and of short duration, almost any barrier of concrete or earth will work. The most conservative cost estimate for a floodwall is based on a two foot high engineered cantilevered concrete floodwall. A cantilevered wall has a footing to provide stability and keep the water pressure from pushing it over. The budget shown in Table 4 is for a 40'x 40' home with a wall one foot outside the building wall. Labor accounts for about half of the price in the cost estimate.

It should be noted that smaller, non-engineered walls such as the ones in Figures 10 and 11 have been built by their owners for less than $10,000. FEMA does not fund individual floodwalls for residential properties; therefore, the homeowner must pay 100% of the cost for a floodwall. However, each person can determine how much of its own labor they want to contribute (which reduces out-of-pocket costs) and whether the cost of the wall is worth the protection from flooding that it provides.

Table 4: Floodwall Cost Estimate

Two Foot high reinforced concrete cantilever wall, 168 feet @ $200/foot	$33,600
Internal drainage and sump pump system	$5,000
Sewer backup valve	$4,500
Generator for power outages	$900
TOTAL	**$44,000**

III. Dry Floodproofing

This measure keeps floodwaters out of a building by modifying the structure. Walls are coated with waterproofing compounds or plastic sheeting. Openings (e.g., doors, windows, and vents) are closed either permanently, or temporarily with removable shields or sandbags.

A floodproofing project has three components:

- The walls are made watertight. This is easiest to do for masonry or brick faced walls. The brick or stucco walls can be covered with a waterproof sealant and bricked or stuccoes over with a veneer to camouflage the sealant. Houses with wood, vinyl, or metal siding need to be wrapped with plastic sheeting to make walls watertight, and then covered with a veneer to camouflage and protect the plastic sheeting.

- Provide closures, such as removable shields or sandbags, for the openings; including doors, windows, dryer vents, and weep holes.
- Account for sewer backup and other sources of water entering the building. For shallow flood levels, this can be done with a floor drain plug or standpipe; although a valve system is more secure.

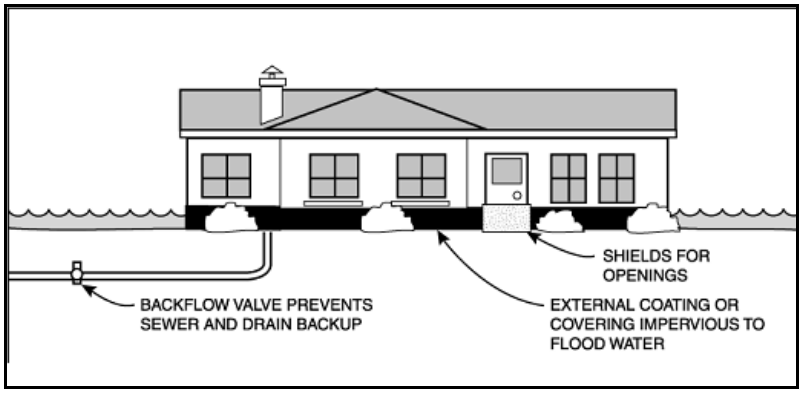


Figure 12: A Dry Floodproofed house

As seen in Figure 12, dry floodproofing employs the building itself as part of the barrier to the passage of floodwaters, and therefore this technique is only recommended for buildings with slab foundations that are not cracked. The solid slab foundation prevents floodwaters from entering a building from below. Also, even if the building is in sound condition, tests by the US Army Corps of Engineers have shown that dry floodproofing should not be used for depths greater than 2 feet over the floor, because water pressure on the structure can collapse the walls and/or buckle the floor.

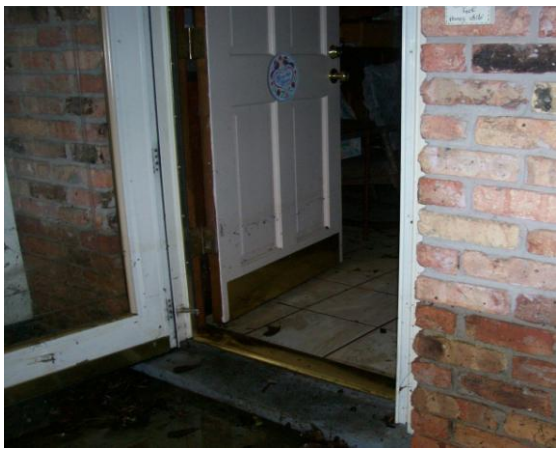


Figure 13: Flooding of the house up to 1 ½ feet. Damage could be prevented by dry floodproofing

Figure 14: This dry floodproofed building in Mandeville, LA had the walls waterproofed and removable shields placed in the windows.

Figure 15: This home in Jefferson Parish, LA has permanent shields sealing the space under the windows.

Figure 16: This Baton Rouge home has a steel door with gaskets that seal when closed

Figure 17: The same Baton Rouge home has thin facing brick placed over the waterproofing materials

Dry floodproofing is a mitigation technique that is appropriate for some houses in the both study areas: those with slab foundations that typically receive floodwater up to three feet in the house. From the fieldwork it was found that 82% of the houses in Roberta Grove and 100% in Senator Circle are slab-on-grade foundations, and according to the data sheet responses, 60% of the respondents in Roberta Grove and 12% of respondents in Senator Circle experienced flooding.

Not all parts of the building need to be floodproofed. It is difficult to floodproof a garage door, for example, so some owners let the garage flood and floodproof the walls between the garage and the rest of the house. Appliances, electrical outlets, and other damage-prone materials located in the garage should be elevated above the expected flood levels. Examples of floodproofed houses can be seen in the above Figures 14 through 17.

Dry floodproofing has the following shortcomings as a flood protection measure:

- It usually requires human intervention, i.e., someone must be home to close the openings.
- Success of dry floodproofing depends on the building's condition, which may not be readily evident. It is very difficult to tell if there are cracks in the slab under the floor covering.

- Periodic maintenance is required to check for cracks in the walls and to ensure that the waterproofing compounds do not decompose.
- There is no government financial assistance programs available for the dry floodproofing of residential buildings, therefore the entire cost of the project must be paid by the homeowner.
- The NFIP will not offer a lower insurance rate for dry floodproofed residences.

A. Cost: The cost for a dry floodproofing project can vary according to the building's construction and condition. It can range from $5,000 to $20,000, depending on how secure the owner wants to be. Owners can do some of the work by themselves, although an experienced contractor provides greater security. Each property owner can determine how much of its own labor they can contribute and whether the cost and appearance of a project is worth the protection from flooding that it may provide.

B. Feasibility: As with floodwalls, floodproofing is appropriate where flood depths are shallow and are of relatively short duration. It can be an effective measure for some of the structures and flood conditions found in the analysis areas. It can also be more attractive than a floodwall around a house.

IV. Utility Protection

This measure applies to several different utilities that can be adversely affected by floodwaters such as:

- Heating, Ventilation, and Air Conditioning (HVAC) systems
- Fuel meters and pipes
- Electrical service boxes, wiring and fixtures
- Sewage systems
- Water systems

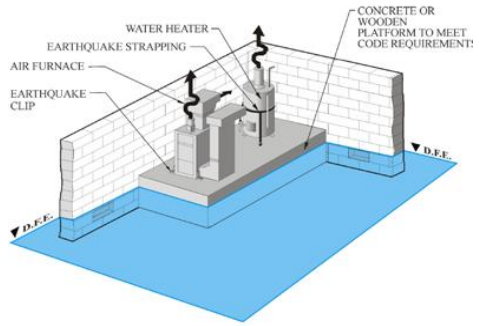


Figure 18: Elevation of mechanical equipment

Damage to utilities can prevent a residence that remains structurally sound after a flood from being reoccupied. Retrofitting utilities includes things as simple as raising them above the flood level and building small walls around furnaces and water heaters to protect from shallow flooding as shown in Figure 18.

According to the homeowner's data sheets, 25 (41%) of respondents in Senator Circle and 6% of respondents in Roberta Grove answered that they had moved utilities and/or contents to a higher level as a mitigation measure. There is a FEMA publication that is tailored towards protecting utilities from floodwaters. FEMA document 348: *Protecting Building Utilities from Flood Damage* covers various ways to protect utilities; whether the building is a new construction, declared substantially damaged, or simply an existing structure in need of retrofitting, this document covers different techniques used in protecting utilities.

A. Cost: The cost for protecting utilities varies and is dependent upon the measure itself, condition of the system, structure, and foundation. Although, methods for protecting utilities can be performed by the homeowners themselves, it is always a good idea to consult a professional contractor and/or

engineer (depending on the project). The costs can be lower when done as part of a repair or remodeling project.

Residents interested in pursuing a retrofitting measure to protect their utilities should contact the Terrebonne Parish to determine whether a permit is required.

B. Feasibility: Given that the flooding experienced by the residents in the study areas includes both shallow and deep flooding, utility protection is a recommended mitigation measure. It should be incorporated even if the building will be protected by a levee or dry floodproofing to provide an extra layer of protection.

V. Drainage Improvements

Residents in both neighborhoods commented that a main reason they flood is due to the poor drainage in the area, namely from Bayou Chauvin. As previously mentioned on page 17 a study was recently completed and the Parish will be implementing recommendations from the study by:

- Digging a 30 acre retention pond north of the Woodlawn pump station; the 30 acres retention pond reduces the peak tail waters by 12 inches;
- Widening the earthen channel of Bayou Chauvin and removing heavy overgrowth which causes debris, build up, and restricts flow; the widening of the channel in addition to the 30 acre retention pond further reduces the peak flows by 2 additional inches.

Coupled with the East Houma Surge Levee, the Bayou Chauvin improvements should provide more protection for the residents of Roberta Grove and Senator Circle than before. While the East Houma Surge Levee is complete, work has not yet begun on the Bayou Chauvin improvements as of this report.

VI. Drainage Maintenance Program

Roberta Grove - Senator Circle's drainage system covers a fairly large area and includes stream channels, backyard, swales, ditches and bayous. The system may not be able to perform to its capacity if trash and debris are allowed to clog storm sewer inlets or the sewer lines. A regular program of drainage system inspections can catch problems in the system before they turn into major obstructions. Therefore, Terrebonne Parish and City of Houma have a drainage maintenance program. They have divided the drainage system into two separate systems:

A. Gravity drainage system
B. Forced drainage system.

<u>A. Gravity Drainage system</u>:

This system includes all the canals, roadside and lateral ditches, culverts and catch basins in the gravity drainage area within the City of Houma and the developed areas of Terrebonne Parish. Gravity Drainage staff inspect and maintain drainage system components on public property and along state highways. Drainage ditches, canals, etc. on private property are the responsibility of the property owner, however, the parish has the authority to perform required maintenance when it is not accomplished by the owner or is an emergency. Gravity drainage staff will also perform required maintenance on drainage components along state highways when it is not provided in a timely manner by the State of Louisiana Department of Transportation.

B. Forced Drainage System:
Forced Drainage staff covers all the pumps stations, canals and laterals within the forced drainage area of the City of Houma and developed areas of Terrebonne Parish.
Most of the Roberta Grove- Senator Circle study area is in the Forced Drainage System because of the levee protection. However, certain parts of it could also be categorized under Gravity Drainage System; especially around Bayou Chauvin and the ditch near the Roberta Grove subdivision.

Inspection and Maintenance:
The drainage system components within the Gravity Drainage and Forced Drainage areas are inspected at least monthly. The drainage system is also inspected within 24 hours after any storm event that could have an adverse impact on the capacity of the system. Drainage staff also responds to citizen's complaints or notifications of problems with the drainage system. These complaints are usually handled within 1-2 hours.

In addition to regular inspections, screw gates and culverts not associated with pump stations are inspected once per month due to recurring accumulation of debris. Whenever a problem is noted during a routine inspection or responding to a citizen's complaint, a work order is completed and workers are assigned to correct the problem. All trash, garbage, rubber tires or other materials, vegetative growth, and any type of minor or major obstruction are removed. The materials removed from the drainage canals, ditches, etc. are transported to a landfill or suitable repository.
A record of the inspections performed and maintenance work orders is kept to document that problems have been corrected.

VII. Maintaining Flood Insurance

Although not a mitigation measure that reduces property damage from a flood, a NFIP policy has the following advantages for the homeowner or renter:

- A flood insurance policy covers surface flooding from the overflow of inland or tidal waters or from storm water runoff.
- Flood insurance may be the only source of assistance to help owners of damaged property pay for cleanup and repairs.
- Once in effect there is no need for human intervention.[23]
- Coverage is available for the contents of a home as well as for the structure.
- Renters can buy contents coverage, even if the building owner does not buy coverage for the structure itself.

A. Cost: Flood insurance rates are based on several factors including what flood zone the building falls in and the age of the structure. All the structures in both areas fall in the AE Zone. Homes constructed before May 19, 1981 in the City of Houma are "pre-FIRM" buildings, which mean that they were built before the date of the first Flood Insurance Rate Map (FIRM) for the community.

A building that is located in the Special Flood Hazard Area (SFHA) and constructed or substantially improved after the date of the most current FIRM - such as one built or substantially improved in 1982 –

[23] There is a 30-day waiting period for a new flood insurance policy before it goes into effect.

is required to be built above the base flood elevation and is therefore subject to rates based on the actual risk rather than a subsidized rate. Rates on pre-FIRM buildings that are currently insured are subsidized because the flood risk was unknown at the time of construction.

Biggert-Waters Flood Insurance Reform and Modernization Act of 2012 ("BW12"): Congress passed, and the President subsequently signed into law, BW12 on July 6, 2012. The main purpose of the Act is to phase out subsidies paid on flood insurance policy premiums with the end goal of making the NFIP financially sound. This is a complicated and intricate act. Certain provisions are already being implemented, and more provisions that will be implemented over 2013 and 2014.

Any resident who wants to know more should go to: www.fema.gov/BW12 .[24] It is also important to talk with your flood insurance agent to make sure your policy is up-to-date and to learn more about the impending changes.

B. Community Rating System (CRS): The CRS is a voluntary program that incentivizes NFIP participating communities to go above and beyond the minimum requirements for floodplain management. Participating communities are rewarded with reduced insurance premiums. Communities that join the CRS complete floodplain management activities that are worth a certain amount of credit. The more credit earned, the better the class ranking of that community. The CRS has 10 classes; a Class ranking of 10 carries the lowest flood insurance premium reduction, whereas a Class 1 carries the maximum discount. Terrebonne Parish is currently a Class 6; one of only three Class 6 communities in the State of Louisiana.[25] Class 6 is the highest CRS Class achieved by any community in Louisiana.

CRS Class	Discount on SFHA premiums	Discount on non-SFHA premiums
10	0%	0%
9	5%	5%
8	10%	5%
7	15%	5%
6	20%	10%
5	25%	10%
4	30%	10%
3	35%	10%
2	40%	10%
1	45%	10%

Table 5: CRS Classes and their discounts

Possible Funding Sources: There are several possible sources of funding for mitigation projects:

A. FEMA grants
B. Flood Insurance
C. Rebates
D. Small Business Administration Mitigation Loans

A. FEMA grants: Most of the FEMA programs provide 75% of the cost of a project. In most Gulf communities, the 25% non-FEMA share is paid by the benefitting property owner. Each program has different Congressional authorization and slightly different rules.

[24] Also, www.floodsmart.gov
[25] The other communities are Jefferson Parish and East Baton Rouge Parish

1. The Hazard Mitigation Grant Program (HMGP):[26] The HMGP provides grants to states and local governments to implement long-term hazard mitigation measures after a major disaster declaration. Projects must provide a long-term solution to a problem (e.g., elevation of a home to reduce the risk of flood damage as opposed to buying sandbags and pumps to fight the flood). Examples of eligible projects include acquisition and elevation, as well as local drainage projects.

2. The Severe Repetitive Loss Program (SRL):[27] The SRL grant program funds mitigation projects for properties on the severe repetitive loss list. Eligible flood mitigation projects include:

- Acquisition and demolition or relocation of structures that are listed on FEMA's severe repetitive loss list and conversion of the property to open space.
- Elevation of existing SRL structures to at least the Base Flood Elevation (BFE).

3. The Flood Mitigation Assistance Program (FMA):[28] FMA funds assist states and communities in implementing measures that reduce or eliminate the long-term risk of flood damage to structures insured under the NFIP.

- **Project Grants** to implement measures to reduce flood losses, such as elevation, acquisition, or relocation of NFIP-insured structures. States are encouraged to prioritize FMA funds for applications that include repetitive loss properties; these include structures with 2 or more losses each with a claim of at least $1,000 within any ten-year period since 1978.

Types of Projects Funded	HMGP	FMA	PDM	RFC	SRL	ICC	SBA
Acquisition of the entire property by a gov't agency	✓	✓	✓	✓	✓		
Relocation of the building to a flood free site	✓	✓	✓	✓	✓	✓	✓
Demolition of the structure	✓	✓	✓	✓	✓	✓	✓
Elevation of the structure above flood levels	✓	✓	✓		✓	✓	✓
Replacing the old building with a new elevated one	✓				✓	✓	✓
Local drainage and small flood control projects	✓				✓		
Dry floodproofing (nonresidential or historic buildings)		✓	✓		✓	✓	✓
Percent paid by Federal program	75%	75%	75%	100%	75%	100%	0

Table 6: Different FEMA grants and the projects covered under each

4. Pre-Disaster Mitigation Program (PDM): The PDM program provides funds to states, territories, Indian tribal governments, communities, and universities for hazard mitigation planning and the implementation of mitigation projects prior to a disaster event. There are several requirements that must be met in order to receive PDM funding. For more information please visit http://www.fema.gov/government/grant/pdm/index.shtm.

[26] For more information please visit http://www.fema.gov/government/grant/hmgp/index.shtm
[27] For more information please visit http://www.fema.gov/government/grant/srl/index.shtm
[28] For more information please visit: http://www.fema.gov/government/grant/fma/index.shtm

These FEMA grants and the mitigation projects that they cover are summarized in table 6 below summarize the different FEMA grants and the projects they cover.

The Biggert-Waters Act has provisions in it that would consolidate certain grant programs into one umbrella grant program. As previously mentioned in this report, BW12 is complex and still being sorted at this time;[29] and as such, FEMA has not made an official statement regarding the proposed changes to these grant programs.

B. Flood insurance: There is a special funding provision in the NFIP for insured buildings that have been substantially damaged by a flood, "Increased Cost of Compliance (ICC)". ICC coverage pays for the cost to comply with floodplain management regulations after a flood if the building has been declared substantially damaged. ICC will pay up to $30,000 to help cover elevation, relocation, demolition, and (for nonresidential buildings) floodproofing. It can also be used to help pay the 25% owner's share of a FEMA funded mitigation project.

The building's flood insurance policy must have been in effect during the flood. This payment is in addition to the damage claim payment that would be made under the regular policy coverage, as long as the total claim does not exceed $250,000. Claims must be accompanied by a substantial or repetitive damage determination made by the local floodplain administrator. For more information, contact the insurance agent who wrote your flood insurance policy or visit www.fema.gov/plan/prevent/floodplain/ICC.shtm.

Coverage under the ICC does have limitations:

- It covers only damage caused by a flood, as opposed to wind or fire damage,
- The building's flood insurance policy must have been in effect during the flood,
- ICC payments are limited to $30,000 per structure.
- Claims must be accompanied by a substantial damage determination made by the local floodplain administrator.
- Homeowners should make themselves aware of the approximate value of their homes, and in the case of incurring flood damage, be aware of the need for a substantial damage declaration in order to receive the ICC coverage.

Alternative language adopted into the local floodplain management ordinance would enable residents with shallower flooding to access ICC funding. Since local ordinances determine the threshold at which substantial damage and /or repetitive claims are reached, adopting language that would lower these thresholds would benefit the homeowners of repetitive loss properties. Adopting alternative language allows for cumulative damage to reach the threshold for federal mitigation resources more quickly, meaning that some of the properties in both study areas that sustain minor damage regularly would qualify for mitigation assistance through ICC.

C. Rebates: A rebate is a grant in which the costs are shared by the homeowner and another source, such as the local government, usually given to a property owner after a project has been completed. Many communities favor it because the owner handles all the design details, contracting, and payment

[29] April 2013

before the community provides funding. The owner ensures that the project meets all of the program's criteria, has the project constructed, and then goes to the community for the rebate after the completed project passes inspection. Rebates are more successful where the cost of the project is relatively small, e.g., under $5,000, because the owner is more likely to be able to afford the bulk of the cost. The rebate acts more as an incentive, rather than as needed financial support.[30]

D. Small Business Administration Mitigation Loans: The Small Business Administration (SBA) offers mitigation loans to SBA disaster loan applicants who have not yet closed on their disaster loan. Applicants who have already closed must demonstrate that the delay in application was beyond their control. Measures eligible for SBA mitigation loans may only protect real estate property, not personal items, from the same type of future declared disaster. For more information visit the website http://www.sba.gov/home or call 1-800-827-5722. For example, mitigation loans made following a flood can only be used for a measure to protect against future flooding, not a tornado. If the measure existed prior to the declared disaster, an SBA mitigation loan will cover the replacement cost. If the measure did not exist prior to the declared disaster the mitigation loan will only cover the cost of the measure if it is deemed absolutely necessary for repairing the property by a professional third-party, such as an engineer[31].

Step 5: Findings and Recommendations

I. Findings

Properties in both study areas are subject to flooding due to storm surge, heavy rains, and drainage issues. Bayou Chauvin is unable to move water out of the areas quickly enough due to being undersized, clogged with debris, and shallow in some areas. There are plans in the works currently that aim to address Bayou Chauvin limited capacity. The East Houma Surge Levee has also been completed and should protect the study areas from storm surge coming from the south.

The mitigation recommendations are based on the data shown in the table (Appendices H & I) and data not included in this report (the photographs of the properties, responses on the data sheets, and insurance data subject to the Privacy Act).

II. Recommendations

For Terrebonne Parish

Implemented by: Terrebonne Parish.
Project duration: As needed
Funding sources: FEMA, Flood Insurance and Small Business Administration Loans.

- Adopt this Area Analysis according to the process detailed in the CRS Coordinator's Manual, 2013.
- Encourage the owners of repetitive flood loss structures to pursue a mitigation measure.

[30] More information on rebates can be found in the Corps of Engineers' report Local Flood Proofing Programs found at: http://www.nwo.usace.army.mil/nfpc/NFPC_Publications.htm.
[31] For more information visit the SBA Disaster Loans home page on the web at http://www.sba.gov/services/disasterassistance/

- Continue to assist interested property owners in applying for a mitigation grant.
- Improve the drainage out of Bayou Chauvin.
- Institute a ditch maintenance program that encourages homeowners to frequently clear their ditches of debris to ensure open flow for stormwater.
- The proposed drainage improvements to Bayou Chauvin will alleviate standing water from heavy rains in both neighborhoods.
- Assist the Houma-Terrebonne Housing Authority in order to mitigate Senator Circle properties.
- Continue to be a part of the CRS and improve the Parish's Class.
- Continue the CRS credited public information activities, such as outreach projects, website, and flood protection assistance, to help residents learn about and implement retrofitting measures.
- As the floodplain management ordinance is being revised, include provisions to provide higher flood protection levels and measures to trigger substantial improvements determinations after repetitive flooding. Also, building of low flood walls around several buildings, rather than addressing each building individually could be useful.

For the Houma-Terrebonne Housing Authority

Implemented by: Houma-Terrebonne Housing Authority
Project duration: As needed
Funding sources: FEMA, Flood Insurance, Rebates and Small Business Administration Loans

- Make sure residents in Senator Circle are aware of the flood threat and what they can do to protect their belongings.
- Make sure residents in Senator Circle are aware of the availability of renters flood insurance.
- Review the ability of residents in Senator Circle to make structural changes to their apartments for flood protection purposes.
- Work with the Parish to identify structures eligible for mitigation.

For the residents of Roberta Grove and Senator Circle

Implemented by: Residents of Roberta Grove and Senator Circle
Project duration: As needed
Funding source: NA

- Review the mitigation measures listed in this report and implement those that are appropriate.
- Stay up to date with what Terrebonne Parish is doing in regards to flood protection: www.tpcg.org
- Purchase or maintain flood insurance policies on the home (if a homeowner) and/or on the contents (homeowner and renters). More information can be found at www.floodsmart.gov
- Keep informed about the changes being made to the NFIP by the implementation of the Biggert-Waters Flood Insurance Reform and Modernization Act of 2012: www.fema.gov/BW12 or www.floodsmart.gov

Appendix A – Data sheet responses for Senator Circle

Total Respondents = 8	%	Answer	Number out of 8
In what year did you move into the apartment/home at this address?	12.5	1971-1980	1
	12.5	1981-1990	1
	50	2001-2012	4
	25	No Response	2
What type of foundation does your home have?	62.5	Slab	5
	12.5	Post/Piles	1
	25	No Response	2
Has the property ever been flooded or have a water problem?	37.5	Yes	3
	37.5	No	3
	25	No Response	2
In what years did it flood? **(multiple answers were allowed)**	37.5	2008 (Gustav and Ike)	3
	12.5	2009 (Rain event)	1
	12.5	2012 (Isaac)	1
	37.5	No Response	3
What was the deepest the water ever got?	25	0-2 feet; yard only	2
	Aren't all Senator Circle properties on slab? How would this apply? 12.5	3-6 feet; In crawlspace/under first floor	1 (5ft. CS;5 ft. First floor)
	12.5	over first floor	1 (3 inches)
	50	No Response	4

Total Respondents =8	%	**Answer**	**Number out of 8**
What was the longest time water stayed in the house?	12.5	1 day	1
	12.5	3 days	1
(**Multiple answers were allowed)**	75	No Answer/Not sure	6
What do you feel was the cause of you flooding?	62.5	Drainage from nearby properties	5
(Multiple answers were allowed)	62.5	Storm surge	5
	37.5	Clogged/undersized drainage ditch/canal	3
	62.5	Overbank flooding	5
	25	Storm sewer backup	2
	25	Other	2 (Sanitary sewer backup)
	25	No Answer/Not sure	2
Have you taken any flood mitigation protection measures on your property?	25	Sandbagged when water threatened	2
(Multiple answers were allowed)	25	Moved utilities/ contents to a higher level	2
	62.5	No answer	5
Do you have flood insurance?	87.5	No	7
	12.5	No answer	1
Are you interested in learning more about mitigation?	50	Yes	4
	25	No	2
	25	Not sure/No Answer	2

Appendix B: Data sheet responses for Roberta Grove

Total Respondents = 15	%	Answer	Number out of 15
In what year did you move into the apartment/home at this address?	40	1970-1980	6
	6.6	1981-1990	1
	20	1991-2000	3
	20	2001-2012	3
	13.33	No Response	2
What type of foundation does your home have?	100	Slab	15
	6.6	Post/Piles	1 (Originally slab)

Has the property ever been flooded or have a water problem?	60	Yes	9
	40	No	6
In what years did it flood? **(multiple answers were allowed)**	26.6	2002 (Lili & Isadore)	4
	33.33	2005 (Katrina & Rita)	5
	53.33	2008 (Gustav and Ike)	8
	6.66	2009 (Rain event)	1
	13.33	2012 (Isaac)	2
	26.66	No Response	4
What was the deepest the water ever got? **(Multiple answers were allowed)**	40	0-2 feet; yard only	6
	60	over first floor	9
	26.66	No Response	4

Total Respondents =15	%	Answer	Number out of 15
What was the longest time that the water stayed in the house?	13.33	2 days	2 (Ike)
	13.33	5 days	2 (Gustav, Rita)
	26.66	7 days	4 (Ike)
	6.6	weeks	1
	6.6	Never Flooded	1
(**Multiple answers were allowed)**	40	No Answer/Not sure	6
What do you feel was the cause of you flooding? **(Multiple answers were allowed)**	33.33	Drainage from nearby properties	5
	73.33	Storm surge	11
	46.66	Clogged/undersized drainage ditch/canal	7
	60	Overbank flooding	9
	13.33	Storm sewer backup	2
	13.33	Standing water	2
	6.66	Other	1 (water rise in canals, sanitary back up, pumps not working)
	13.33	No Answer/Not sure	2

Have you taken any flood mitigation protection measures on your property? **(Multiple answers were allowed)**	33.33	Sandbagged when water threatened	5
	20	elevated all parts of the building	3
	6.66	Regraded yard	1
	6.66	Installed Drains	1
	6.66	Moved utilities/ contents to a higher level	1
	6.66	other	1 (house above sea-level)
	26.66	No answer	4
Do you have flood insurance?	0	No	0
	100	Yes	15
Are you interested in learning more about mitigation?	73.33	Yes	11
	6.66	No	1
	20	Not sure/No Answer	3

Appendix C: Letter to residents in Senator Circle

P. O. BOX 6097
HOUMA, LOUISIANA 70361
(985) 868-5050

P. O. BOX 2768
HOUMA, LOUISIANA 70361
(985) 868-3000

TERREBONNE PARISH
CONSOLIDATED GOVERNMENT

PLANNING & ZONING DEPARTMENT
REGULATORY DIVISION

January 2nd, 2013

Dear Senator Circle Resident:

Terrebonne Parish has partnered with the University of New Orleans' Center for Hazards Assessment, Response and Technology (UNO-CHART) to conduct a study that looks into the repetitive flooding of your neighborhood. The purpose of this study is to get a better understanding of what the flooding issues in the neighborhood are, as well as to offer ideas about how to mitigate the flood losses.

Terrebonne Parish, The Housing Authority, and UNO-CHART would like to invite you to an informative meeting being held on **Wednesday, January 16th, 2013 at 6:00pm in the Management and Maintenance (M&M) Auditorium** located at 100 Senator Circle, Houma, LA 70363. At this meeting, there will be a short presentation explaining the study and how it will be carried out.

This work would be greatly improved with additional information that you might be able to provide. Attached is a data sheet that we hope you will complete. After you fill the form out, please bring it with you to the meeting on January 16th, 2013 – **or** – bring it to the Office in the Management and Maintenance (M&M) Building if you are unable to attend the meeting.

Before the meeting on January 16th 2013, UNO-CHART will be in the area doing "fieldwork:" taking pictures from the street of each building noting the foundation type, estimated elevation above the street, etc. If you would like to talk to the research team about your flooding experiences, this information would greatly enhance this study. The research team **will not** enter your home unless you invite them.

After the study is completed, some preliminary recommendations will be developed. You will be invited to a final meeting with the UNO-CHART team to review the findings. The meeting time and location will be announced once the analysis is near completion. If you have any questions about this project, please feel free to call Lisa Ledet with the Planning & Zoning Department at (985)873-6789 or if you want to talk to the research team call Erin Merrick from UNO-CHART at (504)280-1404.Thank you for your assistance in helping us to complete this project.

Geoffrey Large, MDipMS, CBO, CHCO, CCI, CSI.
Assistant Director, Planning and Zoning
Head of Regulatory Division & Parish Building Code Administrator
Terrebonne Parish Consolidated Government

Appendix D: Letter to residents in Roberta Grove

P. O. BOX 6097
HOUMA, LOUISIANA 70361
(985) 868-5050

P. O. BOX 2768
HOUMA, LOUISIANA 70361
(985) 868-3000

TERREBONNE PARISH
CONSOLIDATED GOVERNMENT

PLANNING & ZONING DEPARTMENT
REGULATORY DIVISION

January 3, 2013

Dear Roberta Grove Resident:

Terrebonne Parish has partnered with the University of New Orleans' Center for Hazards Assessment, Response and Technology (UNO-CHART) to conduct a study that looks into the repetitive flooding in your neighborhood. The purpose of this study is to get a better understanding of what flooding issues in the neighborhood are, as well as to offer ideas about how to mitigate the flood losses.

Terrebonne Parish and UNO-CHART would like to invite you to the Roberta Grove Neighborhood Watch Meeting being held on **Thursday, January 17, 2013 at 6:00pm at The Gymnastics Development Center, 110 Rome Commercial Place, Houma, LA 70363.** At this meeting, UNO-CHART will give a short presentation explaining the study and how it will be conducted.

This work would be greatly improved with additional information that you might be able to provide. Attached is a data sheet that we hope you will complete. After you fill the form out, please bring it with you to the meeting on January 17, 2013 – **or** – bring it to Mrs. Mary Aucoin's home at 201 Garden Lane, Houma, LA, 70363 by the meeting date if you are unable to attend.

Before the meeting on January 17, 2013, UNO-CHART will be in the area doing fieldwork: taking pictures from the street of each building, noting the foundation type and estimating elevation above the street, etc. If you would like to talk to the research team about your flooding experiences, this information would greatly enhance this study. The research team **will not** enter your home unless you invite them.

After the study is completed, some preliminary recommendations will be developed. You will be invited to a final meeting with the UNO-CHART team to review the findings. The meeting time and location will be announced once the analysis is near completion. If you have any questions about this project, please feel free to call Lisa Ledet with the Planning & Zoning Department at (985)873-6789 or if you want to talk to the research team call Erin Merrick from UNO-CHART at (504)280-1404.

Thank you for your assistance in helping us to complete this project.

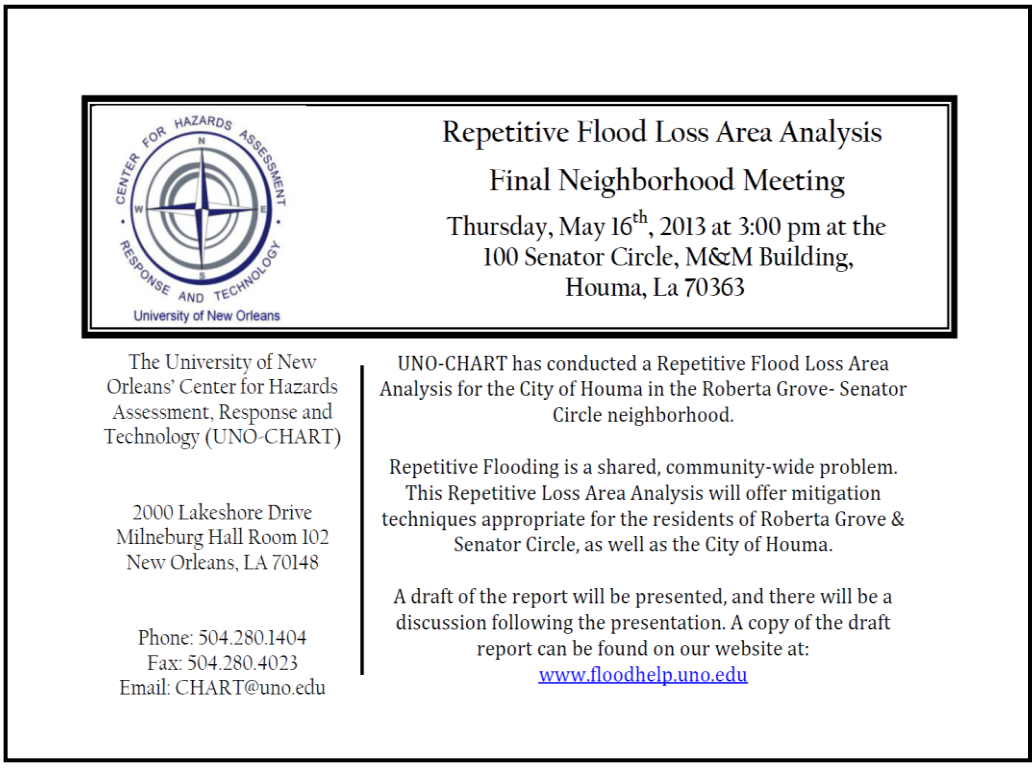
Geoffrey Large, MDipMS, CBO, CHCO, CCI, CSI.
Assistant Director, Planning and Zoning
Head of Regulatory Division & Parish Building Code Administrator
Terrebonne Parish Consolidated Government

Appendix E: Terrebonne Parish Hazard Mitigation Goals

GOAL #	Objective	Action Items	Timeframe	Funding	Staff
1	**1.1** Ensure existing structures are structurally sound to endure hurricane-force winds	**1.1.1** wind harden structures	1-5 years as funding permits	HMGP; local, regional, federal	Existing parish administration
	1.2 ensure all citizens and employees of Terrebonne Parish are safe from high winds	**1.2.1** Construct safe rooms at critical facilities	1-5 years as funding permits	HMGP; local, regional, federal	Existing parish administration
		1.2.2 Install a hazard early warning system	1-5 years as funding permits	HMGP; local, regional, federal	Parish administration
	1.3 ensure all 1st responders are adequately equipped to respond to a storm even	**1.3.1** Purchase communication devices	1-5 years as funding permits	HMGP; local, regional, federal	Existing Parish administration
		1.3.2 Purchase generators for critical facilities to ensure operation during and after a hazard event	1-5 years as funding permits	HMGP; local, regional, federal	Existing Parish administration
	1.4. Protect citizens from saltwater intrusion	**1.4.1** Maintain dual potable water intakes	Ongoing	Local	Existing Parish administration
		1.4.2 Acquire bottled water in event of saltwater intrusion	As needed	Local, federal	Existing Parish administration
		1.4.3 Pursue Morganza to the Gulf surge protection levee which would in turn reduce the effects of saltwater intrusion	1-5 years	Local, federal	Existing Parish administration
	1.5 Reduce the effects of Land Subsidence	**1.5.1** Pursue coastal protection projects to reduce land subsidence in coastal areas	Ongoing	Local	Existing Parish administration
		1.5.2 Ensure accurate survey points are located throughout the parish to monitor continued subsidence	Ongoing	Local, federal	Existing Parish administration
		1.5.3 Monitor agricultural activities and encourage smart farming practices to reduce soil compaction and acceleration of subsidence	As needed	Local, federal	Existing Parish administration
2	**2.1** Increase public awareness of hazard areas and educate the public on mitigation	**2.1.1** Continue to advertise public meetings during the hazard mitigation planning process	3-5 years	HMGP	Parish administration

3	**3.1** Eliminate threat of flood damage to structures in Terrebonne Parish including storm surge and levee failure	**3.1.1** Upgrade current drainage infrastructure	1-5 years	HMGP	Existing designated full-time personnel in public works department
		3.1.2 Construct new flood control structures and levees	1-10 years	Local, regional, federal	Existing Parish administration
		3.1.3 Elevate or acquire all RL and SRL structures in Terrebonne Parish	1-10 years, as funding permits	HMGP	Existing Parish administration
		3.1.4 Elevate equipment that is vulnerable to flood damage	1-5 years	HMGP	Existing Parish administration
		3.1.5 Flood proof all public buildings vulnerable to flood damage	1-5 years, as funding permits	HMGP	Existing Parish administration
		3.1.6 Construct Morganza to the Gulf Hurricane Protection Levee which would protect both new and current developments	1-10 years, as funding permits	Local, regional, federal	Existing Parish administration
4	**4.1** Promote and permit commercial and industrial development, including public critical facilities, outside of hazard areas to limit business interruption, property damage, and impairment to critical facilities in strict accordance with the parish zoning, flood management, and other applicable state and federal regulations	**4.1.1**Ensure that future development does not increase hazard losses by enforcing building codes	Ongoing	No additional funds required	Parish Administration
		4.1.2 guide future development away from hazard areas using zoning regulations while maintaining other parish goals such as economic development and improving the quality of life	Ongoing	No additional funds required	Parish Administration
		4.1.3 Enforce the International Building Code requirements for all new construction to strengthen buildings against high wind damage	Ongoing	No additional funds required	Parish Administration
		4.1.4 Examine current zoning regulations and determine what new regulations could be passed to reduce the effects of hazards on new buildings and infrastructure	Ongoing	No additional funds required	Parish Administration

Appendix F: Roberta Grove- Senator Circle Invitation Postcard



Repetitive Flood Loss Area Analysis

Final Neighborhood Meeting

Thursday, May 16th, 2013 at 3:00 pm at the 100 Senator Circle, M&M Building, Houma, La 70363

The University of New Orleans' Center for Hazards Assessment, Response and Technology (UNO-CHART)

2000 Lakeshore Drive
Milneburg Hall Room 102
New Orleans, LA 70148

Phone: 504.280.1404
Fax: 504.280.4023
Email: CHART@uno.edu

UNO-CHART has conducted a Repetitive Flood Loss Area Analysis for the City of Houma in the Roberta Grove- Senator Circle neighborhood.

Repetitive Flooding is a shared, community-wide problem. This Repetitive Loss Area Analysis will offer mitigation techniques appropriate for the residents of Roberta Grove & Senator Circle, as well as the City of Houma.

A draft of the report will be presented, and there will be a discussion following the presentation. A copy of the draft report can be found on our website at:
www.floodhelp.uno.edu

Repetitive Flood Loss Area Analysis
Final Neighborhood Meeting

Thursday, May 16th, 2013 at 6:00 pm at the Gymnastic Development Center, 110 Rome Commercial Place; Houma, La 70363

The University of New Orleans' Center for Hazards Assessment, Response and Technology (UNO-CHART)

2000 Lakeshore Drive
Milneburg Hall Room 102
New Orleans, LA 70148

Phone: 504.280.1404
Fax: 504.280.4023
Email: CHART@uno.edu

UNO-CHART has conducted a Repetitive Flood Loss Area Analysis for the City of Houma in the Roberta Grove-Senator Circle neighborhood.

Repetitive Flooding is a shared, community-wide problem. This Repetitive Loss Area Analysis will offer mitigation techniques appropriate for the residents of Roberta Grove & Senator Circle, as well as the City of Houma.

A draft of the report will be presented, and there will be a discussion following the presentation. A copy of the draft report can be found on our website at:
www.floodhelp.uno.edu

Appendix G: Houma Terrebonne Housing Authority Newsletter about Informational meeting

Houma Terrebonne Housing Authority

7491 Park Avenue
Houma, LA 70364

P.O. Box 3816
Houma, LA 70361

Your Editors,

HTHA Staff

PRESORTED STANDARD
U.S. POSTAGE PAID
Houma, LA
Permit No. 458

H.T.H.A Board of Commissioners

Allan Luke- Chairman
Pat Cazes-Vice Chairperson
Melissa Ardoin-Commissioner
Chester Dillard-Commissioner
Joe Thompson-Commissioner

Don't judge each day by the harvest you reap but by the seeds that you plant.
~Robert Louis Stevenson

Words from the Executive Director

HUD's Quality Housing and Work Responsibility Act (QHWRA) of 1998 mandates that each and every Public Housing adult Head of Household and household members, with certain exceptions, are required to volunteer and contribute no less than **8 hours of work per month** within the community in which they reside, or to participate on an ongoing basis in an economic self-sufficiency or job training program. All residents should know that Annual Leases are required in public housing and Annual Compliance Reviews are required for the work requirement and your **Dwelling Leases Shall Not Be Renewed** unless the resident, **YOU**, are in compliance with the work requirement. All should know that **This Rule** will be enforced by the Housing Authority! Exceptions from community service work are provided for working families, senior citizens (62 and older), disabled families (must provide proof of the disability) persons attending school or vocational training, or physically impaired persons and tenants who believe they are covered by any of these exceptions should immediately present evidence supporting their claim to the housing manager.

Senator Circle Residents are urged to attend a very important informational meeting on Thursday, May 16, 2013, 3:00 p.m. in the Senator Circle M & M Auditorium which deals with flood Hazards faced while living in the Senator Circle Development and hazard mitigation funding and plans that may affect you. Tenants who have lived in the Development through storms such as Allison, Katrina, Rita, Gustav, Ike, etc. should attend because you may learn of available funding sources pertinent to any losses had during these events and financial assistance previously unknown to you. FEMA officials will be present as well as Terrebonne Parish personnel and elected officials including District 1 council member, the Honorable John Navy.

Finally, tenants should read and become familiar with their dwelling lease. It and it alone represent the legal agreement between you and the PHA. It explains your obligations to the Authority and the Authority's duty to you. Issues such as your failure to report problems inside your unit to housing someone not reported by you as a member of your household, is cause for eviction. The Housing Authority is adopting a zero tolerance position for these type violations. If discovered, these violations will subject you to eviction!

Wayne Thibodeaux
985-876-4755

Appendix H: Senator Circle Data Collection and Findings

Building number	Street Name	APT_LOT	Occupied?	# of Stories	Elevated above grade	Elevated above street	Structure type	Foundation Type	Foundation Condition	Retrofitted	Mitigation recommendations
100	SENATOR CIRCLE	A	YES	1	1--2	2--3	BF	S	GOOD	NO	FW
100	SENATOR CIRCLE	B	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
101	SENATOR CIRCLE	A	NO	1	0-1	1--2	BF	S	GOOD	NO	FW
101	SENATOR CIRCLE	B	NO	1	0-1	1--2	BF	S	GOOD	NO	FW
102	SENATOR CIRCLE	A	NO	1	0-1	1--2	BF	S	GOOD	NO	FW
102	SENATOR CIRCLE	B	NO	1	0-1	1--2	BF	S	GOOD	NO	FW
103	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
103	SENATOR CIRCLE	B	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
104	SENATOR CIRCLE	A	NO	1	0-1	1--2	BF	S	GOOD	NO	FW
104	SENATOR CIRCLE	B	NO	1	0-1	1--2	BF	S	GOOD	NO	FW
105	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
105	SENATOR CIRCLE	B	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
106	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
106	SENATOR CIRCLE	B	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
107	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
107	SENATOR CIRCLE	B	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
108	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
108	SENATOR CIRCLE	B	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
109	SENATOR CIRCLE	B	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
109	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
110	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
110	SENATOR CIRCLE	B	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
111	SENATOR CIRCLE	B	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
111	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
112	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
112	SENATOR CIRCLE	B	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
113	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
113	SENATOR CIRCLE	B	YES	1	0-1	1--2	BF	S	GOOD	NO	FW

Building number	Street Name	APT_LOT	Occupied?	# of Stories	Elevated above grade	Elevated above street	Structure type	Foundation Type	Foundation Condition	Retrofitted	Mitigation recommendations
114	SENATOR CIRCLE	B	NO	1	0-1	1--2	BF	S	GOOD	NO	FW
114	SENATOR CIRCLE	A	NO	1	0-1	1--2	BF	S	GOOD	NO	FW
117	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
117	SENATOR CIRCLE	B	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
118	SENATOR CIRCLE	B	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
118	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
119	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
119	SENATOR CIRCLE	B	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
120	SENATOR CIRCLE	B	NO	1	0-1	1--2	BF	S	GOOD	NO	FW
120	SENATOR CIRCLE	A	NO	1	0-1	1--2	BF	S	GOOD	NO	FW
121	SENATOR CIRCLE	A	NO	1	0-1	1--2	BF	S	GOOD	NO	FW
121	SENATOR CIRCLE	B	NO	1	0-1	1--2	BF	S	GOOD	NO	FW
122	SENATOR CIRCLE	B	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
122	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
123	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
130	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
130	SENATOR CIRCLE	B	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
131	SENATOR CIRCLE	B	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
131	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
132	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
132	SENATOR CIRCLE	B	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
133	SENATOR CIRCLE	B	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
133	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
134	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
134	SENATOR CIRCLE	B	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
135	SENATOR CIRCLE	B	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
135	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
146	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
147	SENATOR CIRCLE	B	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
147	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
148	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
149	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW

Building number	Street Name	APT_LOT	Occupied?	# of Stories	Elevated above grade	Elevated above street	Structure type	Foundation Type	Foundation Condition	Retrofitted	Mitigation recommendations
150	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
151	SENATOR CIRCLE	B	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
151	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
152	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
153	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
153	SENATOR CIRCLE	B	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
154	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
154	SENATOR CIRCLE	B	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
155	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
159	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
160	SENATOR CIRCLE	B	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
160	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
161	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
162	SENATOR CIRCLE	B	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
162	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
163	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
164	SENATOR CIRCLE	B	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
164	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
165	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
166	SENATOR CIRCLE	A	NO	1	0-1	1--2	BF	S	GOOD	NO	FW
167	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
168	SENATOR CIRCLE	B	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
168	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
169	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
170	SENATOR CIRCLE	B	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
170	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
171	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
172	SENATOR CIRCLE	B	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
172	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
173	SENATOR CIRCLE	A	NO	1	0-1	1--2	BF	S	GOOD	NO	FW
178	SENATOR CIRCLE	B	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
178	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
179	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW

Building number	Street Name	APT_LOT	Occupied?	# of Stories	Elevated above grade	Elevated above street	Structure type	Foundation Type	Foundation Condition	Retrofitted	Mitigation recommendations
179	SENATOR CIRCLE	B	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
180	SENATOR CIRCLE	B	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
180	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
181	SENATOR CIRCLE	A	NO	1	0-1	1--2	BF	S	GOOD	NO	FW
181	SENATOR CIRCLE	B	NO	1	0-1	1--2	BF	S	GOOD	NO	FW
182	SENATOR CIRCLE	B	NO	1	0-1	1--2	BF	S	GOOD	NO	FW
182	SENATOR CIRCLE	A	NO	1	0-1	1--2	BF	S	GOOD	NO	FW
185	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
185	SENATOR CIRCLE	B	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
186	SENATOR CIRCLE	B	NO	1	0-1	1--2	BF	S	GOOD	NO	FW
186	SENATOR CIRCLE	A	NO	1	0-1	1--2	BF	S	GOOD	NO	FW
187	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
187	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
188	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
188	SENATOR CIRCLE	B	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
189	SENATOR CIRCLE	A	NO	1	0-1	1--2	BF	S	GOOD	NO	FW
189	SENATOR CIRCLE	B	NO	1	0-1	1--2	BF	S	GOOD	NO	FW
190	SENATOR CIRCLE	B	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
190	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
191	SENATOR CIRCLE	A	NO	1	0-1	1--2	BF	S	GOOD	NO	FW
191	SENATOR CIRCLE	B	NO	1	0-1	1--2	BF	S	GOOD	NO	FW
192	SENATOR CIRCLE	A	NO	1	0-1	1--2	BF	S	GOOD	NO	FW
192	SENATOR CIRCLE	B	NO	1	0-1	1--2	BF	S	GOOD	NO	FW
193	SENATOR CIRCLE	A	NO	1	0-1	1--2	BF	S	GOOD	NO	FW
193	SENATOR CIRCLE	B	NO	1	0-1	1--2	BF	S	GOOD	NO	FW
194	SENATOR CIRCLE	B	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
194	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
195	SENATOR CIRCLE	A	NO	1	0-1	1--2	BF	S	GOOD	NO	FW
195	SENATOR CIRCLE	B	NO	1	0-1	1--2	BF	S	GOOD	NO	FW
196	SENATOR CIRCLE	B	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
196	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
197	SENATOR CIRCLE	B	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
198	SENATOR CIRCLE	B	YES	1	0-1	1--2	BF	S	GOOD	NO	FW

Building number	Street Name	APT_LOT	Occupied?	# of Stories	Elevated above grade	Elevated above street	Structure type	Foundation Type	Foundation Condition	Retrofitted	Mitigation recommendations
198	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
200	SENATOR CIRCLE	B	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
200	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
201	SENATOR CIRCLE	A	NO	1	0-1	1--2	BF	S	GOOD	NO	FW
201	SENATOR CIRCLE	B	NO	1	0-1	1--2	BF	S	GOOD	NO	FW
202	SENATOR CIRCLE	B	NO	1	0-1	1--2	BF	S	GOOD	NO	FW
202	SENATOR CIRCLE	A	NO	1	0-1	1--2	BF	S	GOOD	NO	FW
203	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
203	SENATOR CIRCLE	B	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
204	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
204	SENATOR CIRCLE	B	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
209	SENATOR CIRCLE	B	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
210	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
210	SENATOR CIRCLE	B	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
213	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
214	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
214	SENATOR CIRCLE	B	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
217	SENATOR CIRCLE	B	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
217	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
218	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
218	SENATOR CIRCLE	B	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
219	SENATOR CIRCLE	B	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
219	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
220	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
221	SENATOR CIRCLE	B	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
221	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
222	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
222	SENATOR CIRCLE	B	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
225	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
225	SENATOR CIRCLE	B	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
226	SENATOR CIRCLE	B	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
226	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
229	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW

Building number	Street Name	APT_LOT	Occupied?	# of Stories	Elevated above grade	Elevated above street	Structure type	Foundation Type	Foundation Condition	Retrofitted	Mitigation recommendations
229	SENATOR CIRCLE	B	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
230	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
233	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
233	SENATOR CIRCLE	B	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
234	SENATOR CIRCLE	B	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
234	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
237	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
237	SENATOR CIRCLE	B	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
238	SENATOR CIRCLE	B	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
238	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
241	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
241	SENATOR CIRCLE	B	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
242	SENATOR CIRCLE	B	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
242	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
244	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
244	SENATOR CIRCLE	B	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
245	SENATOR CIRCLE	B	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
245	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
246	SENATOR CIRCLE	A	NO	1	0-1	1--2	BF	S	GOOD	NO	FW
246	SENATOR CIRCLE	B	NO	1	0-1	1--2	BF	S	GOOD	NO	FW
247	SENATOR CIRCLE	B	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
247	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
248	SENATOR CIRCLE	A	NO	1	0-1	1--2	BF	S	GOOD	NO	FW
250	SENATOR CIRCLE	A	YES	1	0-1	1--2	BF	S	GOOD	NO	FW
250	SENATOR CIRCLE	B	YES	1	0-1	1--2	BF	S	GOOD	NO	FW

Appendix I: Roberta Grove Data Collection and Findings

Building number	Street Name	Occupied?	# of Stories	Elevated above grade	Elevated above street	Structure type	Foundation Type	Foundation Condition	Adeq. Vents	Retrofitted	Mitigation recommendations
2	GOODWOOD	YES	1	5--6	0-1	BF	CS	GOOD	YES	YES	MITI
3	GOODWOOD	YES	2	0-1	0-1	BF	S	GOOD	NA	NO	DF/FW
4	GOODWOOD	YES	1	0-1	0-1	BF	S	GOOD	NA	NO	DF/FW
5	GOODWOOD	YES	1	3--4	0-1	BF	CS	GOOD	YES	YES	MITI
100	ROBERTA GR	YES	1	0-1	3--4	BF	S	GOOD	NA	YES	DF/FW
103	ROBERTA GR	YES	1	0-1	0-1	BF	S	GOOD	NA	YES	DF/FW
200	ROBERTA GR	YES	1	0-1	0-1	BF	S	GOOD	NA	YES	DF/FW
201	ROBERTA GR	YES	1	0-1	0-1	BF	S	GOOD	NA	YES	DF/FW
201	GARDEN LN	YES	2	1--2	0-1	BF	CS	GOOD	YES	YES	ELVT
203	ROBERTA GR	NO	1	0-1	0-1	BF	S	GOOD	NA	YES	DF/FW
203	GARDEN LN	YES	1	0-1	0-1	BF	S	GOOD	NA	YES	DF/FW
204	ROBERTA GR	YES	1	0-1	0-1	BF	S	GOOD	NA	YES	DF/FW
205	ROBERTA GR	YES	1	0-1	0-1	BF	S	GOOD	NA	YES	DF/FW
205	GARDEN LN	YES	1	0-1	0-1	BF	S	GOOD	NA	YES	DF/FW
206	ROBERTA GR	YES	1	0-1	0-1	BF	S	GOOD	NA	YES	DF/FW
207	GARDEN LN	YES	1	0-1	0-1	BF	S	GOOD	NA	YES	DF/FW
209	ROBERTA GR	YES	2	0-1	0-1	BF	S	GOOD	NA	YES	DF/FW
301	ROBERTA GR	YES	2	0-1	0-1	BF	S	GOOD	NA	YES	DF/FW
302	WAKEFIELD	YES	1	0-1	0-1	BF	S	GOOD	NA	YES	DF/FW
304	ROBERTA GR	YES	1	4--5	0-1	BF	S	GOOD	YES	YES	MITI
309	ROBERTA GR	YES	2	4--5	0-1	BF	CS	GOOD	YES	YES	MITI
401	ROBERTA GR	YES	1	0-1	0-1	BF	S	GOOD	NA	YES	DF/FW
402	ROBERTA GR	YES	1	0-1	0-1	BF	S	GOOD	NA	YES	DF/FW
403	ROBERTA GR	YES	2	1--2	0-1	?	CS	GOOD	?	YES	ELEVT
499	WOODSIDE	YES	1	0-1	0-1	BF	S	GOOD	NA	NO	DF/FW
500	MIDDLEWOOD	YES	1	0-1	0-1	BF	S	GOOD	NA	NO	DF/FW

Building number	Street Name	Occupied?	# of Stories	Elevated above grade	Elevated above street	Structure type	Foundation Type	Foundation Condition	Adeq. Vents	Retrofitted	Mitigation recommendations
501	WOODSIDE	YES	1.5	0-1	0-1	BF	S	GOOD	NA	NO	DF/FW
502	MIDDLEWOOD	YES	1	0-1	0-1	WF	S	GOOD	NA	NO	MITI
503	WOODSIDE	YES	1	0-1	0-1	BF	S	GOOD	NA	NO	DF/FW
504	WOODHAVEN	YES	1	4--5	0-1	BF	CS	GOOD	YES	YES	MITI
504	WOODSIDE	NO	2	0-1	0-1	BF	S	FAIR	NA	NO	DF/FW
505	WOODHAVEN	YES	2	0-1	0-1	BF	S	GOOD	NA	NO	DF/FW
505	MIDDLEWOOD	YES	1	0-1	0-1	BF	S	GOOD	NA	NO	DF/FW
505	WOODSIDE	YES	1.5	0-1	0-1	BF	S	GOOD	NA	NO	DF/FW
506	WOODHAVEN	YES	1	0-1	0-1	BF	S	GOOD	NA	NO	DF/FW
506	OAKWOOD	YES	1	4--5	0-1	BF	CS	GOOD	YES	YES	MITI
507	OAKWOOD	YES	2	0-1	0-1	BF	S	GOOD	NA	NO	DF/FW
507	MIDDLEWOOD	YES	1	0-1	0-1	BF	S	GOOD	NA	NO	DF/FW
507	WOODSIDE	YES	1	0-1	0-1	BF	S	GOOD	NA	NO	DF/FW
509	OAKWOOD	YES	2	0-1	0-1	BF	S	GOOD	NA	NO	DF/FW
509	WOODSIDE	YES	1	0-1	0-1	BF	S	GOOD	NA	NO	DF/FW
510	WOODHAVEN	YES	1	4--5	0-1	BF	CS	GOOD	?	YES	MITI
510	MIDDLEWOOD	YES	1	5--6	0-1	BF	CS	GOOD	YES	YES	MITI
510	WOODSIDE	NO	1	0-1	0-1	BF	S	GOOD	NA	NO	TO BE MITI
511	WOODHAVEN	YES	2	1--2	0-1	BF	S	GOOD	NA	NO	DF/FW
511	OAKWOOD	YES	1	0-1	0-1	BF	S	GOOD	NA	NO	DF/FW
511	WOODSIDE	YES	2	5--6	0-1	BF	CS	GOOD	YES	YES	MITI
512	WOODHAVEN	YES	1	0-1	0-1	BF	S	GOOD	NA	NO	DF/FW
512	MIDDLEWOOD	YES	1	1--2	0-1	WF	CS	GOOD	NA	NO	ELEVT
512	WOODSIDE	YES	1	0-1	0-1	BF	S	GOOD	NA	NO	DF/FW
513	OAKWOOD	YES	2	0-1	0-1	BF	S	GOOD	NA	NO	DF/FW
514	WOODHAVEN	YES	1	4--5	0-1	BF	CS	GOOD	YES	YES	MITI
514	OAKWOOD	YES	1	0-1	0-1	BF	S	GOOD	NA	NO	DF/FW
515	WOODHAVEN	YES	1	0-1	0-1	BF	S	GOOD	NA	NO	DF/FW
515	OAKWOOD	YES	1	0-1	0-1	BF	S	GOOD	NA	NO	DF/FW
515	WOODSIDE	YES	1	0-1	0-1	BF	S	GOOD	NA	NO	DF/FW

Building number	Street Name	Occupied?	# of Stories	Elevated above grade	Elevated above street	Structure type	Foundation Type	Foundation Condition	Adeq. Vents	Retrofitted	Mitigation recommendations
516	WOODHAVEN	YES	1	0-1	0-1	BF	S	GOOD	NA	NO	DF/FW
516	MIDDLEWOOD	YES	1	0-1	0-1	BF	S	GOOD	NA	NO	DF/FW
516	WOODSIDE	YES	1	0-1	0-1	BF	S	GOOD	NA	NO	DF/FW
517	WOODHAVEN	YES	1	0-1	0-1	BF	S	GOOD	NA	NO	DF/FW
517	WOODSIDE	YES	1	0-1	0-1	BF	S	GOOD	NA	NO	DF/FW
518	WOODHAVEN	YES	1	4--5	0-1	BF	CS	GOOD	YES	NO	MITI
518	OAKWOOD	YES	1	4--5	0-1	BF	CS	GOOD	YES	YES	MITI
518	MIDDLEWOOD	YES	1	0-1	0-1	BF	S	GOOD	NA	NO	DF/FW
518	WOODSIDE	YES	1	0-1	0-1	BF	S	GOOD	NA	NO	DF/FW
519	OAKWOOD	YES	1	0-1	0-1	BF	S	GOOD	NA	NO	DF/FW
519	WOODSIDE	YES	1	0-1	0-1	BF	S	GOOD	NA	NO	DF/FW
520	MIDDLEWOOD	YES	1	0-1	0-1	WF	S	GOOD	NA	NO	FW
520	WOODSIDE	YES	1	0-1	0-1	BF	S	GOOD	NA	NO	DF/FW
521	OAKWOOD	YES	1	0-1	0-1	BF	S	GOOD	NA	NO	DF/FW
521	WOODSIDE	YES	1	0-1	0-1	BF	S	GOOD	NA	NO	DF/FW
522	MIDDLEWOOD	YES	1	0-1	0-1	BF	S	GOOD	NA	NO	DF/FW
522	WOODSIDE	YES	1	0-1	0-1	BF	S	GOOD	NA	NO	DF/FW
523	OAKWOOD	YES	1	4--2	0-1	WF	CS	GOOD	YES	YES	MITI
524	MIDDLEWOOD	YES	2	0-1	0-1	BF	S	GOOD	NA	NO	MITI
525	MIDDLEWOOD	YES	1	0-1	0-1	BF	S	GOOD	NA	NO	DF/FW
528	MIDDLEWOOD	YES	1	0-1	0-1	BF	S	GOOD	NA	NO	DF/FW
530	MIDDLEWOOD	YES	1	5--6	0-1	BF	CS	GOOD	YES	YES	MITI
601	WOODSIDE	YES	1	0-1	0-1	BF	S	GOOD	NA	NO	DF/FW
605	WOODSIDE	NO	1	0-1	0-1	WF	S	GOOD	NA	NO	FW
606	WOODSIDE	NO	1	0-1	0-1	BF	S	GOOD	NA	NO	DF/FW
607	WOODSIDE	YES	1	0-1	0-1	BF	S	GOOD	NA	NO	DF/FW
608	WOODSIDE	NO	1	0-1	0-1	BF	S	GOOD	NA	NO	DF/FW
609	WOODSIDE	YES	2	0-1	0-1	BF	S	GOOD	NA	NO	DF/FW
613	WOODSIDE	YES	2	0-1	0-1	BF	S	GOOD	NA	NO	DF/FW
614	WOODSIDE	YES	1	0-1	0-1	BF	S	GOOD	NA	NO	DF/FW
616	WOODSIDE	YES	1	0-1	0-1	WF	S	GOOD	NA	NO	DF/FW

Building number	Street Name	Occupied?	# of Stories	Elevated above grade	Elevated above street	Structure type	Foundation Type	Foundation Condition	Adeq. Vents	Retrofitted	Mitigation recommendations
617	WOODSIDE	YES	1	0-1	0-1	BF	S	GOOD	NA	NO	DF/FW
620	WOODSIDE	YES	1	0-1	0-1	BF	S	GOOD	NA	NO	DF/FW
621	WOODSIDE	YES	1	0-1	0-1	BF	S	GOOD	NA	NO	DF/FW
622	WOODSIDE	NO	1	0-1	0-1	BF	S	GOOD	NA	NO	DF/FW
3008	WOODCREST	YES	2	0-1	0-1	BF	S	GOOD	NA	NO	DF/FW
3009	WOODCREST	YES	1	1--2	0-1	WF	CS	GOOD	NO	NO	MITI
3301	WAKWFIELD	YES	2	0-1	0-1	BF	S	GOOD	NA	NO	DF/FW
3302	WAKWFIELD	YES	1	0-1	0-1	BF	S	GOOD	NA	NO	DF/FW
3304	WAKWFIELD	YES	1.5	0-1	0-1	BF	S	GOOD	NA	NO	DF/FW
3304	WOODCREST	YES	1	0-1	0-1	BF	S	GOOD	NA	NO	DF/FW
3305	WOODCREST	YES	1	3--4	0-1	BF	CS	GOOD	YES	YES	MITI
3306	WAKEFIELD	YES	1	4--5	1--2	BF	CS	GOOD	YES	YES	MITI
3306	WOODCREST	YES	1	0-1	0-1	WF	S	GOOD	NA	NO	DF
3307	WAKEFIELD	YES	1	0-1	0-1	BF	S	GOOD	NA	NO	DF/FW
3308	WAKEFIELD	YES	1	0-1	0-1	BF	S	GOOD	NA	NO	DF/FW
3309	WOODCREST	YES	1	1--2	0-1	WF	S	GOOD	NA	NO	MITI
3311	WOODCREST	YES	1	4--5	0-1	BF	CS	GOOD	YES	YES	MITI
3313	WOODCREST	YES	2	4--5	0-1	WF	CS	GOOD	YES	YES	MITI
3400	WAKEFIELD	YES	1	0-1	0-1	BF	S	GOOD	NA	NO	DF/FW
3401	BELMONT	YES	2	0-1	0-1	BF	S	GOOD	NA	NO	DF/FW
3402	WOODCREST	YES	2	0-1	0-1	WF	S	GOOD	NA	NO	DF
3403	WAKEFIELD	YES	1	0-1	0-1	BF	S	GOOD	NA	NO	DF/FW
3403	WOODCREST	YES	1	0-1	0-1	BF	S	GOOD	NA	NO	DF/FW
3419	BANCROFT	YES	1	2--3	0-1	WF	CS	GOOD	YES	YES	MITI
3500	WOODSIDE	YES	1	0-1	0-1	BF	S	GOOD	NA	NO	DF/FW
9496	MAIN ST	YES	1	0-1	3--4	BF	S	GOOD	NA	NO	DF/FW
9470	E MAIN ST	YES	1	0-1	0-1	BF	S	GOOD	NA	NO	DF/FW

BF = Brick Faced; WF = Wood Frame; S = Slab; FW = Flood Wall; DF = Dry floodproofing; CS = Crawl Space
ELVT = Elevated; MITI = Mitigated

Final Informational Meeting, May 16th, 2013

A pre-draft-submission informational meeting was held at Roberta Grove and Senator Circle neighborhoods on May 16th, 2013. Neighborhood Residents, Department of Planning and Zoning, Terrebonne Parish Council District 1 and District 8, Homeowners Association (Roberta Grove), Housing Authority (Senator Circle), LSU Sea Grant and FEMA Region VI were notified (3) three weeks prior to the meeting dates. Senator Circle Housing Authority had also sent out a notice on their newsletter to remind the residents about the meeting. Copies of the notice and the invitation post card can be found in Appendices F and G.

Erin Merrick and Nandini Seth undertook the Repetitive Flood Loss Area Analysis (RLAA) for the neighborhood and represented UNO-CHART at the meeting. The following were presented and explained:

- The intent of the informational meeting requirement in a RLAA was explained to the community,
- Copies of Repetitive Loss Area Analysis (RLAA) draft were handed out to the residents to encourage them to send feedbacks to the UN0-CHART team,
- Project findings were discussed in detail,
- Alternative mitigation measures were suggested by UNO-CHART team of experts,
- Community Rating System (CRS) was discussed in relation to earning credits by utilizing RLAA.
- Recommendations were explained for both the neighborhoods separately.

The following is the summary of attendees concern/ comments:

- Many attendees stated that cleaning, widening and deepening of Bayou Chauvin can alleviate flooding problems in the study area.
- The institution of Wal-Mart and the new subdivision was discussed. The residents suggested that building a retention pond near the new subdivision will be used to capture excess runoff that Bayou Chauvin cannot contain.

Figure 19: Final Informational meeting at Roberta Grove

Figure 20: Final Informational meeting at Senator Circle

Attachment c3-4
HMPU – Code Enforcement

STRUCTURE INVENTORY

In 2008/9 Terrebonne Parish funded and resourced pilot program covering 10,941 built structures within the lower bayou special flood hazard area (SFHA). In a field survey, these structures were catalogued by street address and GPS coordinates and by standard reference methods, the extent of damage, dilapidation and standing floodwater level was estimated and documented. This project was highly successful in providing a base-line for future needs assessment and, within the limited area of study; and has served data needs for a wide range of hazard mitigation planning projects within the parish

Some of the key outcomes of value from the pilot project have been:

- Reduction in future risk of injury to persons and property: and
- Reduction in future claims on public expenditure for remedial action; and
- Reduction in future claims on NFIP, with resultant reductions in premium rates: and
- Facilitation of the planning of floodplain mitigation strategies; and
- Facilitation of cost benefit analyses to support major remedial activity proposals
- Facilitation of improvements in post-event damage assessments (RDA and PDA); and
- Facilitation of timely and reliable SD and CSD determinations.

On the basis of experience with the Pilot Project, it is clear that there is a high level of potential benefit to be gained from further development and application of this proactive approach to structure inventory tracking. However, the parish does not have the resources necessary to expand this approach from pilot are to whole parish; and the development of its computerized permitting system to store and use this data as a routine hazard mitigation tool.

When fully developed and proven, this tool could be available to any jurisdiction wishing to replicate such a proactive hazard mitigation approach to its structure inventory.

Estimated Project Cost: $ 850,000

STORM RECOVERY PHASE CODE ENFORCEMENT CAPACITY

One of the key strategies to mitigation of future storm related losses from structural damage lies in the comprehensive enforcement of current construction code requirements during the renovation and reconstruction processes. However, no jurisdiction can afford to carry the levels of staffing to respond to post-storm demand for assistance to property owners in the proper planning and execution of their construction projects.

This surge in service demand is also concurrent with the immediate storm related damage assessment programs which have to be serviced in order to meet state and federal reporting requirements for the establishment of anticipatory cost estimates, as well as RDA/PDA and SD/CSD determination, all of which activity is generally undertaken by the very field inspection staff whose critical services are concurrently in demand for code advisory and enforcement activity.

In addition, a high proportion of post-storm construction activity is undertaken by owners who, for a variety of reasons, do not apply for construction permits. With the limited resources of building departments, this sudden and extreme increase in service demand leads to a concentration on only certain key code requirements in relation to restoration work for which permits are issued. There is certainly no spare capacity to patrol the jurisdictional area in order to identify and forestall unpermitted activity.

Moreover, these excessive service demand periods coincide with severe reductions in revenue receipts for the jurisdiction, in consequence of immediate and ongoing community disruptions caused by the same storms. External financing through grant support would be essential to the maintenance of code enforcement standards throughout the recovery period.

There is a significant hazard mitigation impact to be gained from immediate jurisdictional recourse to supplementary applicant advisory, plan review, building inspection, and preventive enforcement patrol services during the period of exaggerated demand following a major, declared, storm event. The development of a plan to meet this peak demand would, ideally be based on pre-positioned contingency contracts.

Estimated costs would be variable, on a storm to storm basis, dependent on the level of damage sustained by structures within the jurisdiction.