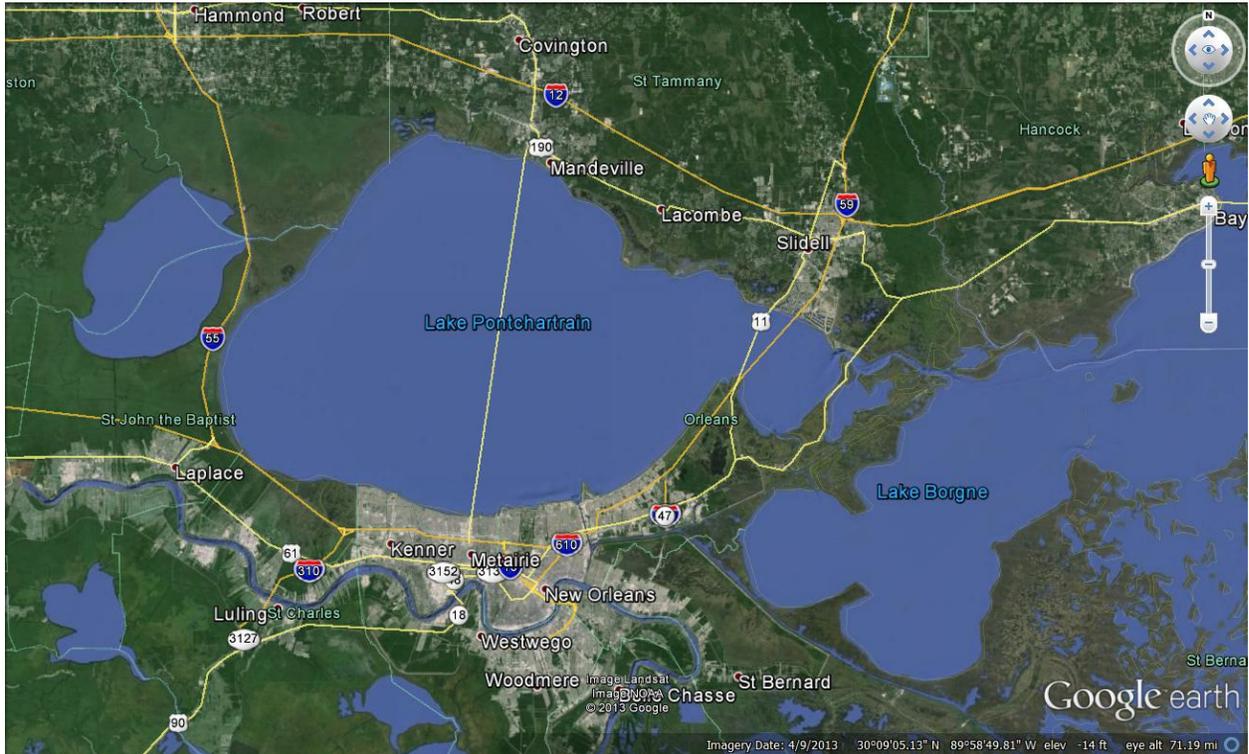


Lake Pontchartrain Basin Storm Surge Protection **WHY NOT?**



Support for storm protection structures at the Rigolets and Chef Menteur Pass:

- The Corps of Engineers states: “structures at the Rigolets and Chef Pass is a good plan and needs further study”
- Louisiana’s Master Plan for a Sustainable Coast identified the east lake structures to reduce surge from entering Lake Pontchartrain is the most cost effective storm surge project in the state
- The structures have the support of Louisiana’s Federal Representatives, State Representatives, Parish Presidents, City Mayors, and in October, 2012, six southeast parishes (St. John the Baptist, St. Tammany, St. Bernard, Tangipahoa, St. Charles and Jefferson) developed a “Storm Defense Compact,” plan with the key goal of the compact to complete the storm protection structures at The Rigolets and Chef Menteur Pass

So why isn’t there a comprehensive project to protect the entire Lake Pontchartrain Basin?

- False information surrounding the feasibility and impact of Lake Pontchartrain Basin structures
- Failure to understand and recognize the risk
- Failure to understand and recognize the cost effectiveness of solving the problem
- Lack of accountability and a bloated bureaucracy within the U. S. Army Corps of Engineers
- A lack of strong political coalition at the federal, state and local level, along with voter apathy
- What needs to be done?

False Information

An environmental lawsuit stopped the Corps from building the structures – False:

Judge Schwartz did not stop or oppose the project; he simply said the Corps must submit a proper EIS and then he would allow the project to proceed.

Judge Charles Schwartz said: "The foregoing opinion should in no way be construed as precluding the Lake Pontchartrain project as proposed or reflecting on its advisability in any manner. Upon proper compliance with the law with regard to the impact statement this injunction will be dissolved and any hurricane plan thus properly presented will be allowed to proceed".

The Corps does not have the authority to study, design or build structures to keep storm surge out of Lake Pontchartrain – False:

- The Flood Control Act of 1965 authorized and funded the Corps to provide Lake Pontchartrain and vicinity hurricane protection
- After Hurricane Katrina (2005), the Corps was once again given the authority to construct a comprehensive hurricane protection system for the “greater New Orleans area”
- Col. Fleming, Commander of the Corps’ New Orleans District Office, stated that the Corps has the authority to request additional funding to precede with the Lake Pontchartrain structures

Surge structures would cost too much and there is no funding– False:

- The Southeast Louisiana Flood Protection Authority’s cost estimate for a 17 mile levee from Orleans to St. Tammany Parish is \$1.1 billion.
- An over-topping navigational structure at Chef Menteur pass would cost between \$300 and \$700 million
- An over-topping navigational structure at the Rigolets would cost approximately \$1 billion.
- The total cost of protecting the entire Lake Pontchartrain Basin (all 7 parishes that surround the lake basin and the 700,000 residents living within the basin) would cost approximately \$3 billion

Surge structures would harm Mississippi – False:

- The Corps’ own 2009 Hydraulics Report concluded that low level, over-topping Lake Pontchartrain structures would have little impact on populated areas of Mississippi.
- The Louisiana CPRA 2015 study validated and verified the Corps’ study with extensive modeling that showed little impact to populated areas of Mississippi
- Concerns that low level, over flowing structures on the eastern edge of Lake Pontchartrain would harm residents of Mississippi are unfounded and can not be substantiated by the modeling and studies conducted that have been conducted

Orleans and Jefferson Parishes now have hurricane storm surge protection – Not totally correct

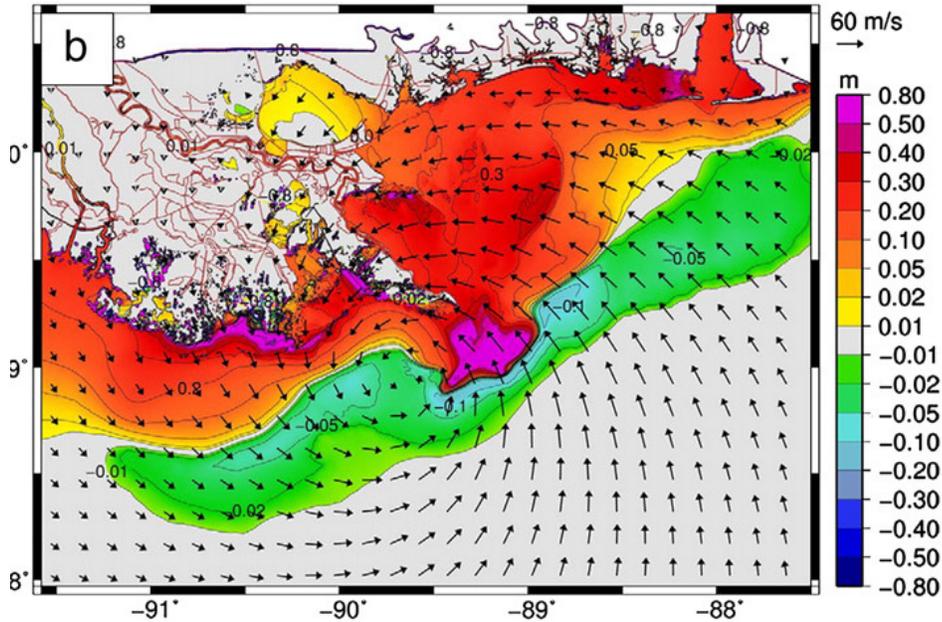
- The Corps has built a storm “risk reduction” system, not a storm “protection” system designed based on a 100 year storm model i.e. a storm that has a 1% chance of occurring in any given year with a 26% probability of a surge event within a standard 30 year mortgage time frame based upon statistical analysis. In reality, the south shore is one storm away from another Katrina event

South shore structures built by the Corps have no impact to the north shore – Maybe Yes, Maybe No

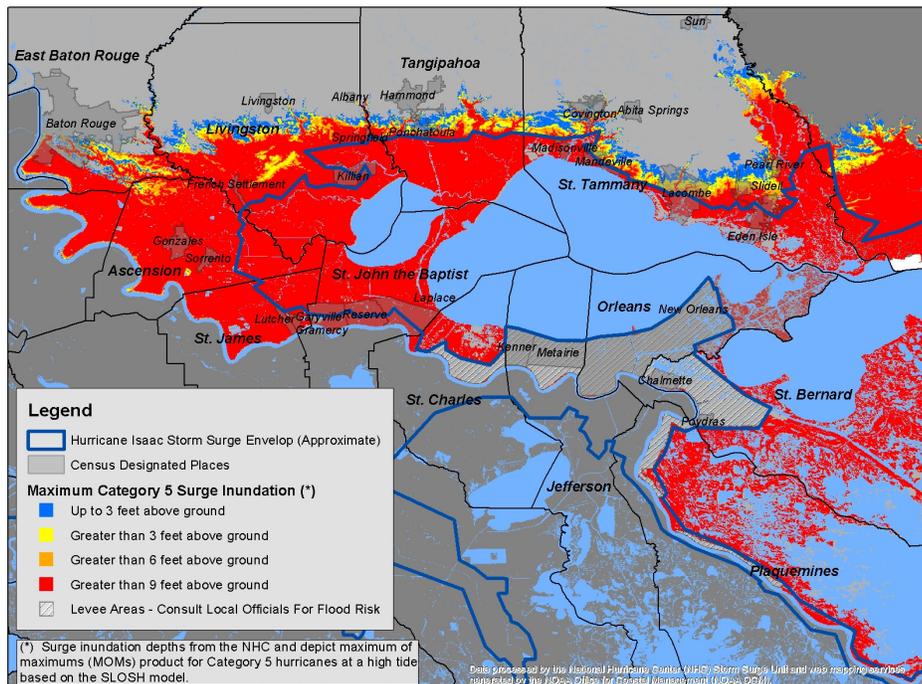
- Ten years after Katrina, the Corps has yet to release their Environmental Impact Study on what impact their south shore risk reduction system has on north shore flooding

Failure to Understand and Recognize the Vulnerability and Risk

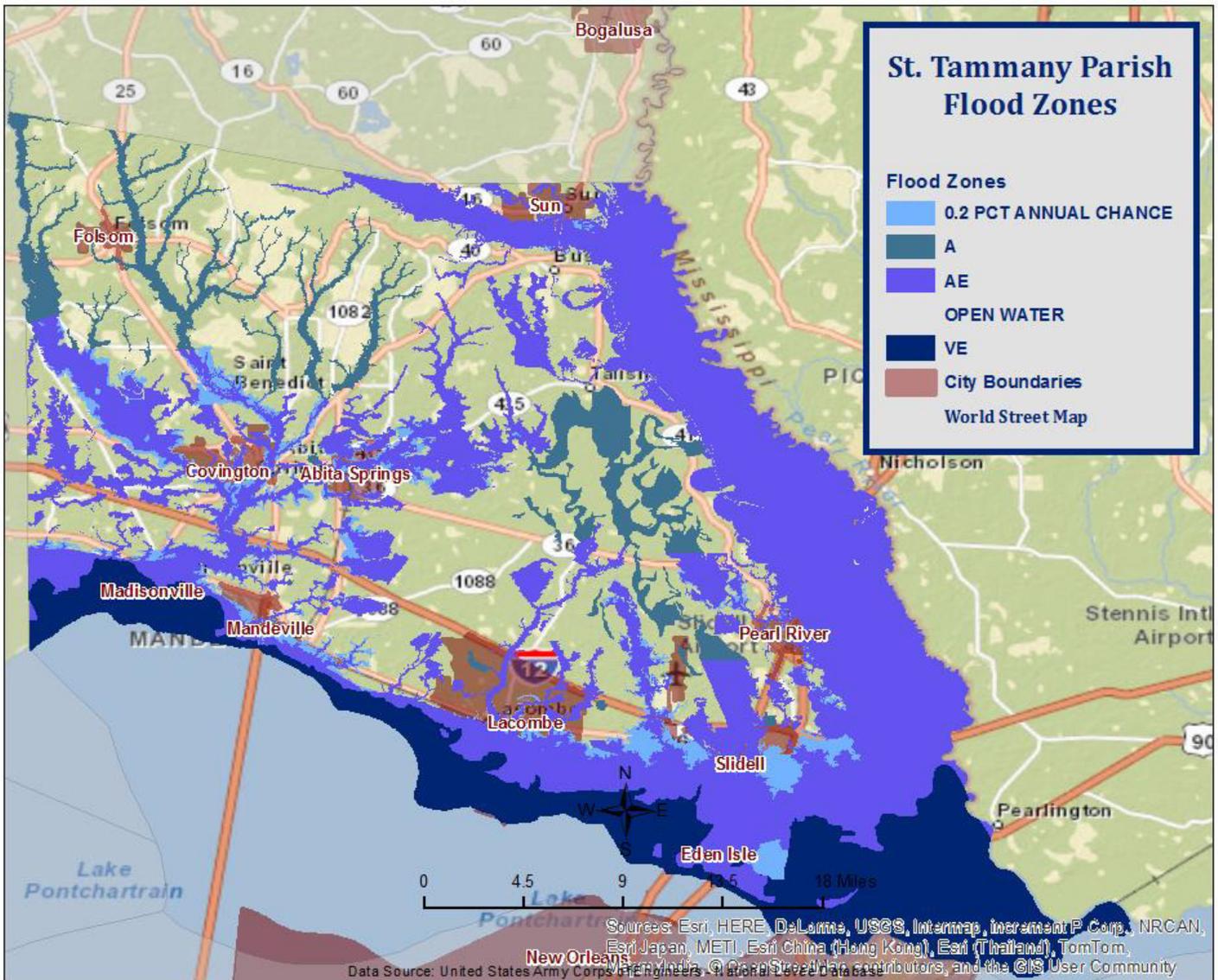
Due to its unique topography, southeast Louisiana is extremely vulnerable to storm surge. The counterclockwise rotation of the hurricane pushes surge into a funnel created by Mississippi's coast line to the north and the hurricane protection walls built along St. Bernard Parish in conjunction with the Mississippi River Levee to the west. This funnel sends the storm surge build-up into the Lake Pontchartrain Basin.



Hurricane Katrina wave-driven set-up contours. From Coastal Engineering 58 (2011) 45-65



The National Hurricane Center's projected maximum storms surge impact to the nine parishes outside of the existing hurricane reduction system exposed to flooding greater than 9 feet. This risk will increase as the marsh and barrier islands continue to erode and sea levels rise.



St. Tammany Parish communities that are fully located in the 100-year floodplain include Madisonville and nearly all of Slidell. Those that are partially located in the floodplain are Abita Springs, Covington, Folsom, Mandeville, Pearl River and Sun. Data from St. Tammany Parish’s 2015 Hazard Mitigation Plan.

The storm surge risk is not just to the north shore of the Lake Pontchartrain Basin

The vulnerability and risk of not providing a comprehensive Lake Pontchartrain Basin storm surge reduction system is not just for the north shore. Orleans and Jefferson Parishes still do not have adequate storm surge protection. The current south shore 100 year “risk reduction” system is the minimum FEMA requirements and even those minimum standards are at risk with continued coastal erosion, rising sea levels and levee sinkage.

The proposed CPRA “Land Bridge” would not only provide minimum protection for the north shore of the Lake Pontchartrain Basin, but also provide maximum protection for Orleans and Jefferson Parishes.

Failure to Recognize the Cost Effectiveness Of Solving the Problem

This Lake Pontchartrain Basin flood risk can be greatly reduced if not eliminated with the construction of the CPRA's proposed "Land Bridge" along the eastern edge of Lake Pontchartrain for a cost of \$3 billion.



Illustration from the Time Picayune News Paper

Flood Insurance Statistics Within St. Tammany Parish Only	
Data from St. Tammany Parish's 2015 Hazard Mitigation Plan	
Total Insurance Coverage Value	Total Loss Payments
\$13.3 Trillion	\$1.6 Trillion

Exposure Based On The National Flood Insurance Program (NFIP)		
1% Flood Zone		
Five of the Nine Parishes Outside Protection System	Population within the 1% Flood Zone	Houses
St. Tammany	102,133	41,467
Livingston	13,439	6,697
Tangipahoa	7,981	3,393
Ascension	3,281	1,336
St. James	2,063	772
Total	128,897	53,665

After Katrina the federal government paid out an average of \$68,000* per household. When applying this average to the 53,665 homes in the 1% flood zone outside the Lake Pontchartrain Basin protection system the potential federal liability equals \$3.6 Trillion.

* <https://sayanythingblog.com/entry/katrina-victims-have-gotten-federal-payouts-averaging-68000-per-household/>

Lack of Accountability and a Bloated Bureaucracy Within The U. S. Army Corps of Engineers

When the Flood Control Act of 1965 first authorized and funded the Corps to provide Lake Pontchartrain and vicinity hurricane protection the Corps new the best, most logical and cost effective method of accomplishing that goal was to restrict surge from entering Lake Pontchartrain and that is why they selected the “Barrier Plan”.

When the Corps submitted a grossly inadequate, four page, Environmental Impact Statement (EIS) that failed to meet even the Army’s own rules and regulations, Judge Schwartz had no choice but to tell the Corps they could not proceed until they submitted a proper EIS.

Why didn’t the Corps simply revise their EIS and resubmit? The answer is as simple as it is pathetic; the Corps bowed to political pressure from a St. Tammany Parish Senator and abandoned the far superior Barrier Plan.

In a Times-Picayune editorial on June 22, 2007, Lieutenant General Elvin Heiberg III, former commander of the Corps of Engineers New Orleans District, confessed that he decided to stop fighting for the barriers and stated that abandoning the Barrier Plan was the biggest mistake he made in his 35 years as an army officer.

After Hurricane Katrina (2005), the Corps once again had the opportunity, authority and funding to construct a comprehensive hurricane protection system for the “Greater New Orleans Area” (For U.S. Census purposes, St. Tammany Parish is one of the seven parishes designated as the “Greater New Orleans Area”)

The political and environmental climate after Hurricane Katrina was completely different than it was in 1977. The entire north shore political community from federal representatives and senators to town mayors all wanted surge protection and requested the Barrier Plan be implemented.

Why didn’t the Corps re-initiate the Barrier Plan?

After Hurricane Katrina the Corps was once again embarrassed when their levee system around New Orleans, Jefferson and St. Bernard failed.

The Corps was under intense pressure to fast tract a project to Do Something!

The Corps’ response was once again to take the path of least resistance and stick with the old existing inferior “High Level” plan of raising levels around the south shore and ignore the cost effectiveness of a comprehensive Lake Pontchartrain Basin plan, which was directed by Congress twice.

- The High Level plan had already acquired right-of-ways for levees
- The High Level plan had proposed levee projects already in place
- The High Level plan could be implemented immediately, regardless of its cost effectiveness or environmental impact or the added surge impact to the north shore
- The Lake Pontchartrain Basin High Level plan did not face political opposition from Mississippi

The Corps did authorize a study to evaluate a new Barrier System, but the study was not completed until 2009, four years after the Corps had committed themselves to the new High Levee system.

The Corps' 2009 Hydraulics Report concluded that low level, over-topping, structures on the eastern edge of Lake Pontchartrain would restrict the pre-storm surge enough to prevent significant flooding within the entire Lake Pontchartrain Basin while have minimum flood impact to populated areas in Mississippi.

The Corps subsequently ignored their own report and never seriously considered resurrecting the Barrier Plan. Even more disturbing, the Corps has done nothing to dispel the unfounded concerns raised by Mississippi.

Why?

In order for the Corps to re-initiate a new low level Barrier Plan they would first have to:

- Admit they committed a huge mistake in abandoning the Barrier Plan
- Admit that the Barrier Plan is cost effective and environmentally acceptable
- Respond to unfounded concerns from a politically powerful and vocal Mississippi delegation
- Redirect a portion of the \$14.5 billion allocated to other projects and deal with the political fallout associated with that redirection of funding or go back to Congress and ask for additional funding to build the comprehensive storm surge protection system that they were directed to build forty years earlier
- Admit that their decision to redirect Congress's authority and funding for a comprehensive, greater New Orleans, Lake Basin protection plan for a "south shore only" plan resulted in the worst hurricane disaster in the country's history

Once again the logic of a cost effective comprehensive Lake Pontchartrain Basin protection system fell to expediency, political pressure and the lack of courage and strong professional leadership within the Corps of Engineers bureaucracy.

How much environmental damage has been caused by the south shore barriers?

The Corps spent \$14.5 billion on south shore structures without first completing an Environmental Impact Study (EIS) to determine what impact their barriers have on the environment or on the increased flood risk to the unprotected areas within the Lake Pontchartrain Basin. As of 2015 (ten years after Hurricane Katrina), the Corps still has not released their final EIS on the impact of their south shore barriers.

Why?

At the Corps' public meeting held on November 14, 2012, Colonel Fleming stated, "If we build a system that has significant impacts on somebody else then we have to, I'll use the phrase mitigate for, probably not in terms of wetlands migration, but in terms of some other type of project....if it is not federal law it is at least part of our policy".

Lack of a Strong Political Coalition at the Federal and Local Level In Addition to Complacency among Voters

At the Federal Level:

Even though Louisiana's delegation in Washington recognizes and supports the cost effectiveness and need for a comprehensive Lake Pontchartrain Basin surge protection project they are either unwilling or unable to accomplish this task.

Funding for the much needed, cost effective Land Bridge project will face multiple obstacles in Washington:

- A federal deficit of over \$18 Trillion
- A federal delegation with little seniority, influence or power
- A strong Mississippi delegation with concerns over a Land Bridge impact to their state
- Two previous authorizations and funding grants for comprehensive Lake Pontchartrain Basin surge protection have been given and redirected by the Corps for south shore projects only
- The Corps is unwilling to support a request for the Land Bridge project
- The Corps and Washington are quick to point out that the Lake Pontchartrain Basin Barrier Plan had its chance 40 years ago, but was opposed by the St. Tammany Parish government

At the State Level:

Louisiana State officials also recognize and support the cost effectiveness and need for a comprehensive Lake Pontchartrain surge protection project and have included the Land Bridge plan in the States' Master Plan, but funding for the much needed, cost effective Land Bridge will face multiple obstacles in Baton Rouge:

- Limited storm protection funds equates to a political battle of how to prioritize projects
- Obstacles over funding a project that requires approvals from federal agencies
- Obstacles over pursuing a project that will require close coordination with the state of Mississippi
- As individual parishes received individual protection the coalition for a comprehensive protection plan loses strength

At the Local Level:

- The south shore has well established, politically connected and powerful network of levee boards in place that immediately direct funding for south shore projects only. The north shore had no levee board and did not have a voice when projects were selected and funding was distributed
- As Corps' south shore projects were developed and funded, the coalition of Parish Presidents demanding a comprehensive Lake Pontchartrain Basin protection system became fragmented. Especially when south shore parish presidents realized that funds dedicated to south shore project would have to be diverted to pay for a comprehensive Lake Pontchartrain Basin project
- The north shore lacks a large industrial base of oil refineries or heavy industry with political influence to lobby for protection

Voter Apathy:

- South shore voters believe their risk has been eliminated
- North shore voters feel disenfranchised and helpless
- Lack of a strong grassroots organization that crosses parish boundaries, to unite at risk populations

What Needs to be Done?

Education

The public needs to know:

- A catastrophic storm risk still exist within the Lake Pontchartrain Basin
- The Lake Basin storm surge risk can be substantially reduced by cost effective, environmental friendly structures along the eastern edge of Lake Pontchartrain
- The structures will not only protect the north shore but also increase protection for the south shore
- The structures will reduce flood insurance rates
- The structures will promote economic growth and enhance the economic sustainability of the region
- The Lake Pontchartrain structures can be designed, constructed and operated without harming the environment or Mississippi's population

Political action

- The Louisiana governor along with state and federal senators and representatives must reach out to the Mississippi delegation and convince them that their concerns over the land bridge project is not supported by the facts. They need to provide the data showing that by protecting the greater New Orleans economic viability they are not placing Mississippi residents at a greater risk of flooding, but they are protecting Mississippi's economic base and major source of economic development
- Voters within the entire Lake Pontchartrain Basin need to unite and be vocal in their support for Lake Basin protection
- The issue of surge protection for the Lake Pontchartrain Basin needs to be addressed at every political level
- Homeowner associations, civic groups, businesses and chamber of commerce organizations, all need to challenge their city and parish councilman, mayors, parish presidents, state senators and representatives, the governor, federal senators and representatives to respond to the need for a comprehensive Lake Pontchartrain Basin protection plan

Hold the Corps of Engineers accountable

- The Corps failed to comply with Congress' 1965 mandate for comprehensive Lake Pontchartrain Basin protection
- The Corps lost credibility and public trust in the 1965 Barrier Plan when they submitted a legally inadequate Environmental Impact statement (EIS)
- The Corps compounded their credibility issues when they chose not to submit a proper EIS for the Barrier Plan
- The Corps chose to disregard their professional ethics and take the path of least resistance by abandoning the Barrier Plan and sacrificing the entire north shore of the Lake Pontchartrain Basin
- The Corps redirected funding allocated for comprehensive Lake Pontchartrain Basin protection and spent it on south shore projects only
- The levees built under the Corps' south shore levee plan failed during Hurricane Katrina
- The Corps once again disregarded Congress' authorization in 2005 to build a protection system for the "Greater New Orleans Area" and instead used the funding for south shore projects only
- The Corps refuses to initiate a new low level Barrier Plan even though their own studies show it would significantly reduce flooding within the Lake Pontchartrain Basin without adversely impacting populated areas of Mississippi
- Demand the Corps release their storm model simulations showing the impact that south shore barriers have on north shore flooding and mitigate the damage caused to the north shore
- Demand the Corps mitigate any increase in flood risk to the north shore of Lake Pontchartrain

Background and Supporting Information

False Information

An Environmental Law Suit Stopped Corps' Plans To Protect The Lake Basin – False:

The environmental group, "Save Our Wetlands," and the St. Tammany Police Jury sued the Corps saying the (EIS) was inadequate. In 1977, Judge Charles Schwartz, agreed that the EIS was inadequate. Judge Schwartz enjoined the Corps from further construction of the barrier structures and associated structures at Chef Menteur Pass and the Rigolets until the Corps submitted an EIS that complies with the Department of the Environmental Impact Statement Army Regulation No. 1105-2-507, Paragraph 7a:

Judge Charles Schwartz said: "The foregoing opinion should in no way be construed as precluding the Lake Pontchartrain project as proposed or reflecting on its advisability in any manner. The Court's opinion is limited strictly to the finding that the environmental impact statement of August, 1974 for this project was legally inadequate. Upon proper compliance with the law with regard to the impact statement this injunction will be dissolved and any hurricane plan thus properly presented will be allowed to proceed".

Judge Schwartz did not stop or oppose the project; he simply said the Corps must submit a proper EIS and then he would allow the project to proceed.

Why didn't the Corps revise their EIS and resubmit?

It is unlikely that properly designed structures restricting storm surge from entering Lake Pontchartrain only when a storm approaches would have a negative impact on the lake's environment.

Perhaps the Corps' reason not to resubmit their EIS was based upon local political opposition and not environmental issues.

St. Tammany Parish State Representative Ed Scogin believed structures at the Rigolets and Chef Menteur Pass would harm the Lake Pontchartrain environment and he used his political influence to convince the St. Tammany Parish Police Jury to join the suit against the structures.

What made Scogin's opposition to structures so convincing?

- State Representative Scogin was a very popular and influential politician.
- Public opinion turned against lake structures after Judge Schwartz ruled the Corps' EIS was inadequate and the Corps decided not to submit a proper EIS showing they were capable of building structures that would not harm the lake's environment.
- In the 1970s, the sparsely populated north shore had little to fear from storm surge.
- Hurricane Betsy (1965) devastated New Orleans and Hurricane Camille (1969) devastated the state of Mississippi but they had little impact on the north shore of Lake Pontchartrain.
- Lake Pontchartrain was protected by a series of barrier islands and the Lake Borgne and Lake Catherine shore lines acting as over-topping weir structures reducing surge entering Lake Pontchartrain. This is similar to what is now proposed for Chef Menteur Pass and the Rigolets.
- The entire east shore of St. Bernard Parish and the lake shore of Jefferson and Orleans parishes acted as flood plains to absorb storm surge; thus reducing the impact to the north shore.

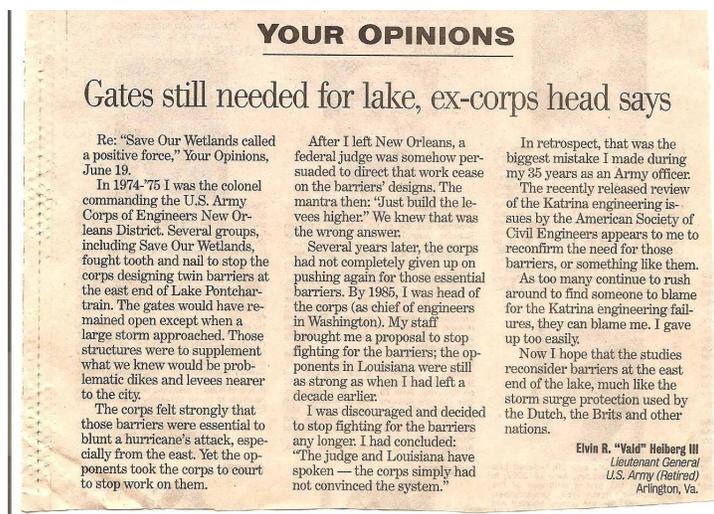
The Corps lost both political and popular support for the barriers by not submitting a proper EIS. Once the Corps lost support for the barriers, it decided it wasn't worth the effort to submit a proper EIS and chose to protect only the lake's south shore. The Corps failed to see the devastating consequences of that decision.

Now 40 years later:

- The natural barriers that protected Lake Pontchartrain against storm surge have been destroyed by Corps' projects like the Intracoastal Waterway and the Mississippi River Gulf Outlet.
- The natural flood plains that had absorbed and disbursed storm surge along the entire east shore of St. Bernard Parish and the lake shore of Jefferson and Orleans Parishes are now blocked off with Corps' barriers that funnel additional storm surge into unprotected Lake Pontchartrain communities.
- Once storm surge enters the lake, it is trapped and can not dissipate into the southern flood plains that existed prior to the Corps' barrier projects. As the lake storm surge is rapidly flushed east it can only escape through the narrow Chef Menteur and Rigolets openings. This pushes the surge directly into St. Tammany Parish rather than through St. Charles Parish, Jefferson Parish, Orleans Parish, the Seabrook Industrial Canal and the Bayou Sauvage National Wildlife Refuge marsh.
- Barriers built around Orleans Parish failed during hurricane Katrina; after spending an additional \$14.5 billion, the levees are sinking and only provide limited storm risk reduction, not protection.
- **MOST CONCERNING** - The Corps' south shore surge reduction projects have been built without first completing an Environmental Impact Statement to determine impact to the lake's environment or to increase risk of surge flooding on the north shore.

After 40 years the Corps still refuses to take responsibility for its failure to submit a proper EIS and holds a grudge against a long dead local state representative who waged a successful campaign to discredit the Corps' ability to build environmentally safe structures at the Rigolets and Chef Menteur Pass. The old political opposition no longer exists! It has been replaced with popular and political support for structures at the Rigolets and Chef Menteur Pass that can be built without harming the lake's environment or the state of Mississippi. It is time for the Corps to bury its grudge and move on and provide comprehensive, cost effective, storm surge protection for the entire Lake Pontchartrain Basin, as originally proposed.

Lieutenant General Elvin Heiberg III, former commander of the Corps of Engineers New Orleans District, confessed in a Times-Picayune editorial on June 22, 2007, that he decided to stop fighting for the barriers and stated that abandoning the barrier plan to keep storm surge out of the Lake Pontchartrain Basin was the biggest mistake he made in his 35 years as an army officer.



The Corps Does Not Have The Authority To Study, Design Or Build Structures To Keep Storm Surge Out Of Lake Pontchartrain – False:

The Flood Control Act of 1965 authorized and funded the Corps to provide Lake Pontchartrain and vicinity hurricane protection. The Corps used that authority to begin the “Barrier Plan” to comply with Congress’s mandate to protect the entire Lake Pontchartrain Basin.

The November 2005, U. S. Government’s Accountability Office
ARMY CORPS OF ENGINEERS History of the Lake Pontchartrain and Vicinity
Hurricane Protection Project states the following:

“Congress first authorized the Lake Pontchartrain and Vicinity, Louisiana Hurricane Protection Project in the Flood Control Act of 1965. The project was to construct a series of control structures, concrete floodwalls, and levees to provide hurricane protection to areas around Lake Pontchartrain.”

This 1965 Congressional authorization and mandate to protect the entire Lake Pontchartrain Basin has never been rescinded and is still in effect.

After Hurricane Katrina (2005), the Corps was once again given the authority to construct a “comprehensive” hurricane protection system for the “greater New Orleans area”. According to the U. S. Census Office St. Tammany Parish is part of the “greater New Orleans area”*. Once again, the Corps disregarded Congress’ mandate and chose to use all the funding on south shore barrier projects and not protect the greater New Orleans area.

* https://en.wikipedia.org/wiki/New_Orleans_metropolitan_area

In November 2012, Col. Fleming, Commander of the Corps’ New Orleans District Office, stated that the Corps has the authority to request additional funding to precede with the Lake Pontchartrain structures.

- It was the Corps, not Congress that chose to disregard Congress’ 1965 mandate to protect the entire Lake Pontchartrain Basin and only protect the south shore of Lake Pontchartrain.
- It was the Corps not Congress that chose to disregard Congress’ 2005 mandate to protect the greater New Orleans area and only protect the south shore of Lake Pontchartrain.
- The Corps admits that they have the authority to select projects and request additional funding to for those projects.
- If the Corps decided they had the authority to disregard Congress’ mandate, then they have the authority to obey Congress’ mandate.

In November 2012, Commander of the Corps’ New Orleans Dist. Office stated:

- Structures at the Rigolets and Chef Menteur Pass “is a good plan, it does need to be looked at”
- The Corps can make a request to Congress to proceed with the structures



Why doesn’t the Corps submit a proper EIS and pursue lake structures as authorized by the 1965 Flood Control Act that would provide a comprehensive hurricane protection system for the “Greater New Orleans Area” as directed and funded after hurricane Katrina? Watch a video of Colonel Fleming’s explanation:

<http://youtu.be/2uZuwC-Ymsk>

Surge Structures Would Cost Too Much and There Is No Funding– False:

- The Southeast Louisiana Flood Protection Authority’s cost estimate for a 17 mile levee from Orleans to St. Tammany Parish is \$1.1 billion. (*Reference: Southeast Louisiana Flood Protection Authority – East New Orleans East Land Bridge Study LPV 111 to Chef Menteur, Chef Menteur to Rigolets December 2012*)
- An over-topping navigational structure at Chef Menteur pass would cost between \$300 and \$700 million*.
- An over-topping navigational structure at the Rigolets would cost approximately \$1 billion*.

*Based upon cost of similar structures built on the south shore

The total cost of protecting the entire Lake Pontchartrain Basin (all 7 parishes that surround the lake basin and the 700,000 residents living within the basin) would cost approximately \$3 billion.



Illustration from New Orleans Times-Picayune article dated December 19, 2012

The 2012 Louisiana Comprehensive Master Plan for a Sustainable Coast supports Lake Pontchartrain structures stated that structures at the Rigolets and Chef Pass are, “one of the most cost effective risk reduction projects analyzed, providing expected annual damage reduction in year 50 between \$2.1 and \$10.4 billion”.

- A one time \$3 billion investment will save more than \$10 billion in repetitive losses.
- Even if the cost were \$5 or \$10, billion the cost benefit ratio would still be in overwhelming favor of building the structures.

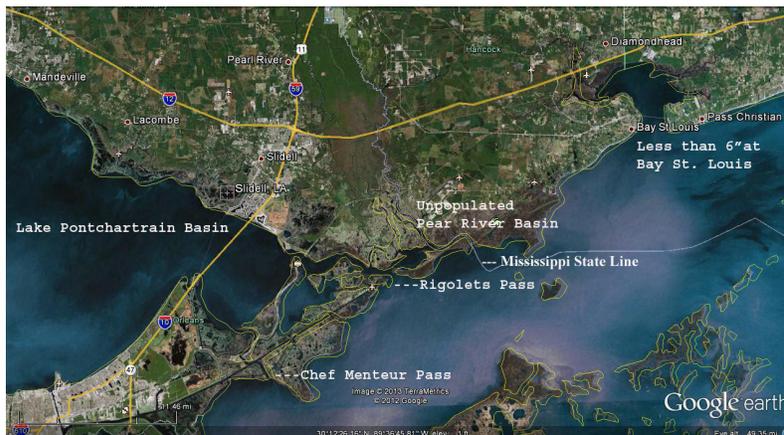
After Hurricane Katrina, the Corps was given over \$14.5 billion to construct a comprehensive hurricane protection system for the “greater New Orleans area”. The north shore of Lake Pontchartrain is part of the “greater New Orleans area”. The Corps chose to use all the funding on south shore barrier projects (many with significantly less cost benefit ratios) and ignore Lake Pontchartrain Basin protection, with billions of dollars in homes, businesses and infrastructure exposed to storm surge. The Corps has the authority to reallocate funding to meet overall project objectives of providing surge protection for the “greater New Orleans area”. The Corps certainly has the authority and funding to evaluate the cost benefits of Rigolets and Chef Menteur Pass structures and recommend their construction.

Surge Structures Would Harm The State of Mississippi – False:

- Properly constructed over-topping surge structures would have little impact on populated areas of Mississippi, while reducing pre-storm surge from entering the lake.
- The Corps' 2009 Hydraulics Report concluded that over-topping Lake Pontchartrain structures would have an average increase of only six inches at Bay St. Louis. This report was conducted before the \$16.6 million seawall protection structure at Bay St. Louis was built.
- The Louisiana CPRA 2015 study validated and verified the Corps' study and showed little impact to populated areas of Mississippi
- Concerns that low level, over flowing structures on the eastern edge of Lake Pontchartrain would harm residents of Mississippi are unfounded and can not be substantiated by the modeling and studies conducted that have been conducted.
- The over-topping structures would perform the same protective function as the natural barriers of the Lake Borgne and Lake Catherine shore lines had performed before the Intracoastal Waterway and the Mississippi River Gulf Outlet destroyed these natural barriers.
- Any residual storm surge diversion into Mississippi as a result of Lake Pontchartrain over-topping structures could be easily and inexpensively mitigated by constructing any number of projects. Certainly, if we can put a man on the moon we can restrict storm surge from entering the Lake Pontchartrain Basin without harming Mississippi. It's not rocket science; it's basic, straight forward, civil engineering.



The new Bay St. Louis seawall stands 12 feet tall from the base of the sand, 20 feet above sea level at the top of the wall. Bay St. Louis Mayor Les Fillingame praised the corps for their efforts, because he said the new seawall accomplishes three missions. He called it "beautiful," "functional," and he said it would provide the necessary storm surge protection. WWL TV report dated August 12, 2011



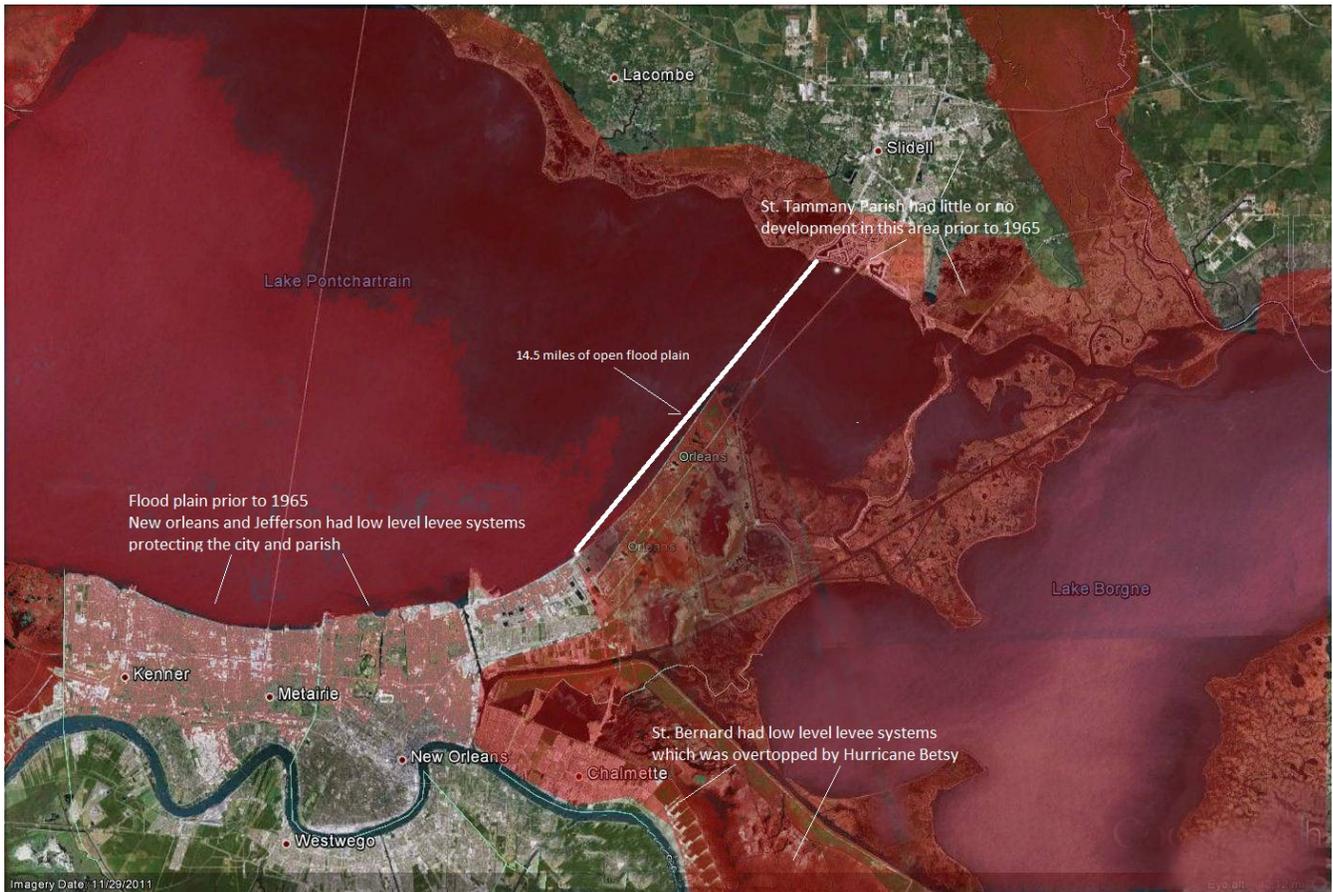
Justification and Need to Restrict Surge From Entering Lake Pontchartrain

Before the Corps begin building their south shore projects storm surge was restricted from entering the Lake Pontchartrain Basin by the natural barrier islands, marsh and Lake Borgne's shore line. Storm surge that did enter the Lake Pontchartrain Basin was free to dissipate and exit through the acres of flood plains that existed around the Lake Basins.

The natural barriers that protected Lake Pontchartrain against storm surge have been destroyed by Corps projects such as:

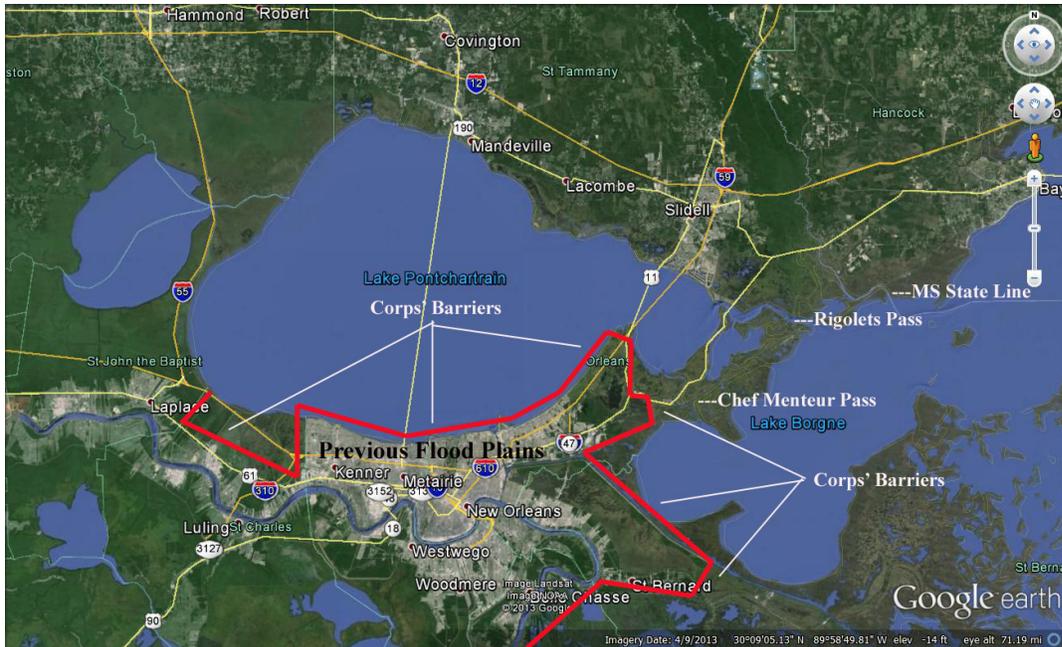
- The Intracoastal Waterway
- The Mississippi River Gulf Outlet

The natural flood plains that existed around the Lake Pontchartrain and Lake Borgne shore line that helped disburse and dissipate the surge has been blocked off by Corps Barriers.

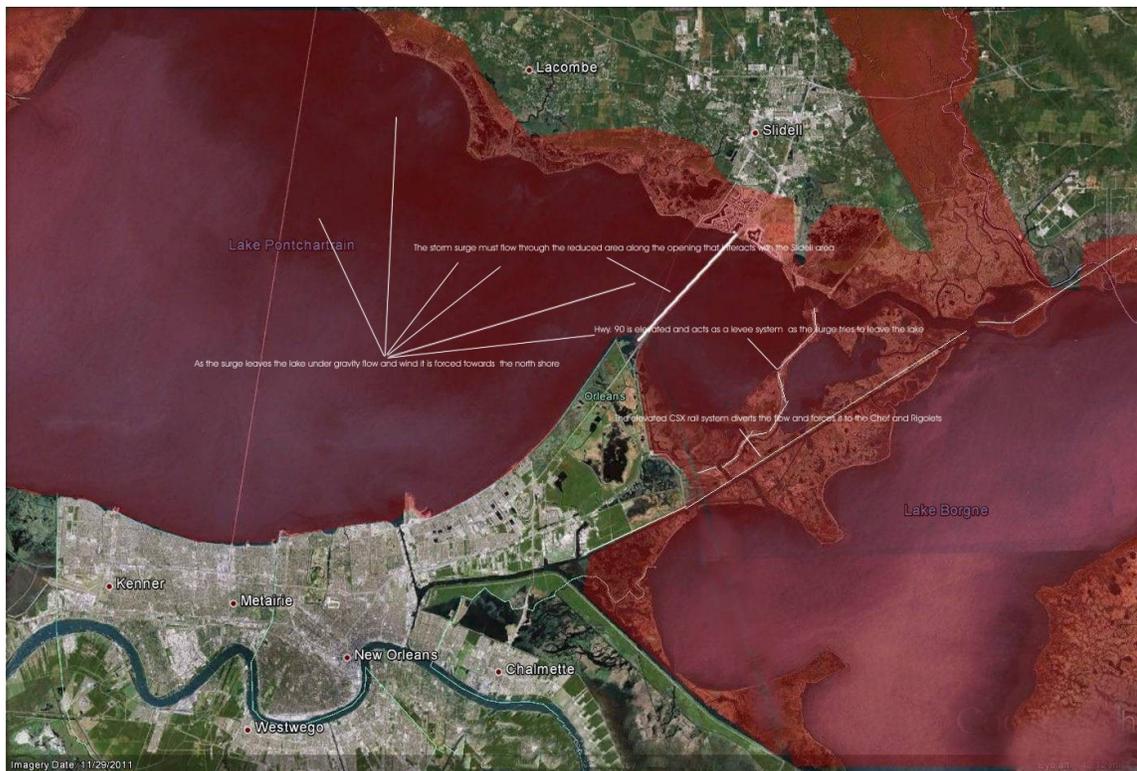


Hurricane storm surge that once flowed through the open flood plains of St. Bernard and Orleans Parishes is now redirected and funneled into Lake Pontchartrain as a result of Corps' barrier projects such as:

- The Mississippi River levee system
- The St. Bernard Parish Lake Borgne surge barrier system
- The east I-10 New Orleans Parish surge barrier system



Once storm surge enters the lake it is trapped and can not dissipate into the southern flood plains that existed prior to the Corps' barrier projects. As the hurricane travels north the wind shifts to the south and east. The Corps' barriers constructed along the south shore of Lake Pontchartrain have eliminated all surge escape routes except for the narrow Chef Menteur and Rigolets passes which creates a choke point and surge backflow into St. Tammany Parish.



By eliminating all other avenues of escape the built-up storm surge within the Lake Pontchartrain Basin pushes directly into eastern St. Tammany Parish rather than through St. Charles Parish, Jefferson Parish, New Orleans Parish, the Seabrook Industrial Canal and the Bayou Sauvage National Wildlife Refuge marsh.

The following Corps' barrier projects have created this problem:

- A continuous barrier system has been constructed from St. Charles Parish through Jefferson Parish and to the eastern edge of Orleans Parish leaving only the narrow openings at the Rigolets and Chef Menteur pass as an escape route for Lake Pontchartrain Basin storm surge
- The Seabrook Canal that previously allowed an escape route for 20% of lake surge is now blocked
- Drainage canals that previously absorbed storm surge are now blocked; pumping stations have been built and pump an additional 16,000 cubic feet per second of storm water into the lake



The Corps spent \$14.5 billion on south shore structures without first completing an Environmental Impact Study (EIS) to determine what impact their barriers have on the environment or on the increased flood risk to the unprotected areas within the Lake Pontchartrain Basin. As of 2015 (ten years after Hurricane Katrina), the Corps still has not released their final EIS on the impact of their south shore barriers.

Why?

At the Corps' public meeting held on November 14, 2012, Colonel Fleming stated, "If we build a system that has significant impacts on somebody else then we have to, I'll use the phrase mitigate for, probably not in terms of wetlands migration, but in terms of some other type of project....if it is not federal law it is at least part of our policy". Therefore, the Corps has to mitigate the damage caused by the following projects:

CONCLUSION

The Entire Lake Pontchartrain Basin Is Exposed To Storm Surge Because:

- In 1977 the Corps decided it was easier to protect only Orleans and Jefferson Parish rather than prepare a proper EIS. The Corps' decision disregarded The Flood Control Act of 1965, which stated that the Corps was to provide hurricane protection to the entire Lake Pontchartrain Basin
- The Corps built barriers along the Jefferson and Orleans Lake Pontchartrain shore line to block storm surge from dissipating into south shore flood plains that existed prior to 1965; the projects redirected the storm surge into unprotected areas within the lake basin
- In 2005, after Hurricane Katrina, the Corps was once again given the authority and funding (over \$14.5 billion) to construct a comprehensive hurricane protection system for the "greater New Orleans area" and once again the Corps decided to ignore Congress and did not include the north shore in their greater New Orleans protection plan
- The Corps built massive barriers along the western edge of Lake Borgne that diverts storm surge from St. Bernard and Orleans Parishes directly into Lake Pontchartrain
- Once storm surge enters the lake basin, a continuous barrier system built along the south shore of Lake Pontchartrain from St. Charles Parish through Jefferson parish and to the eastern edge of Orleans Parish has eliminated previous flood plain exit routes. These Corps' barriers redirect the storm surge directly into other densely populated areas of the Lake Pontchartrain Basin
- Corps' inflated cost estimate for structures to restrict surge from entering the Lake Pontchartrain Basin discourages discussions on developing the plan. The "Land Bridge" cost estimate is under \$3 billion and it the most cost effective project in Louisiana. A one time \$3 billion investment will save more than billions in repetitive losses and in government recovery expenditures.
- The Corps claims they do not have the authority or funding to pursue structures, but they have been given both authority and funding twice (once in 1965 and again in 2005) to protect the entire Lake Pontchartrain Basin. The Corps also has the authority to recommend projects and request funding
- Surge structures would not harm populated areas within the state of Mississippi. Corps and CPRA studies both document that low level over-topping structures would have insignificant impact to Mississippi's populated areas
- Lieutenant General Elvin Heiberg, former commander of the Corps of Engineers New Orleans District, stated the Corps is to blame for leaving Lake Pontchartrain Basin exposed to storm surge and the Corps should reconsider structures to correct their error
- As of 2015 (ten years after Hurricane Katrina), the Corps still has not released their final EIS on the impact of their south shore barriers. Colonel Fleming stated if the Corps builds build a system that has a significant impact on somebody else they have to mitigate the damage their system caused

Why doesn't the Corps submit a proper EIS and pursue structures to restrict surge from entering the Lake Pontchartrain Basin as authorized by the 1965 Flood Control Act that would provide a comprehensive hurricane protection system for the "Greater New Orleans Area", as directed after hurricane Katrina? Watch a video of Colonel Fleming's explanation:

<http://youtu.be/XnwVLkmY4sk>

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