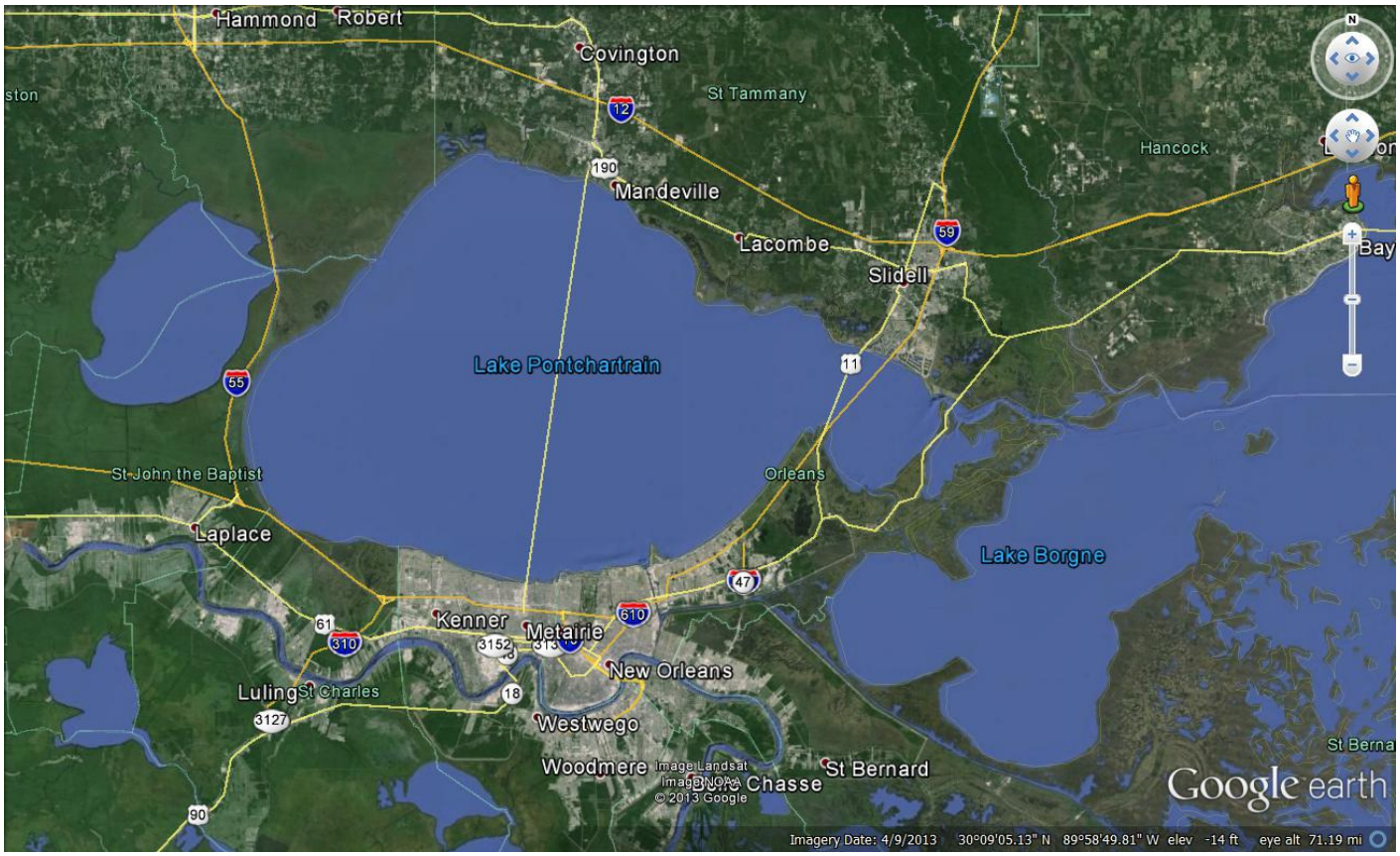
WHY THERE IS NO STORM SURGE PROTECTION FOR THE LAKE PONTCHARTRAIN BASIN

A Report Addressing:

I. The Reason Why The Corps Of Engineers Abandoned Its Plan To Keep Storm Surge Out Of The Lake Pontchartrain Basin;
II. The Reasons Why The Corps Of Engineers Is Not Re-evaluating Its Decision To Leave The Lake Pontchartrain Basin Exposed To Storm Surge;
III. Why The Corps Of Engineers' Reasons Are Not Valid;
IV. Why The Corps Of Engineers Is Obligated To Protect The Entire Lake Pontchartrain Basin, Not Just Orleans And Jefferson Parish



By

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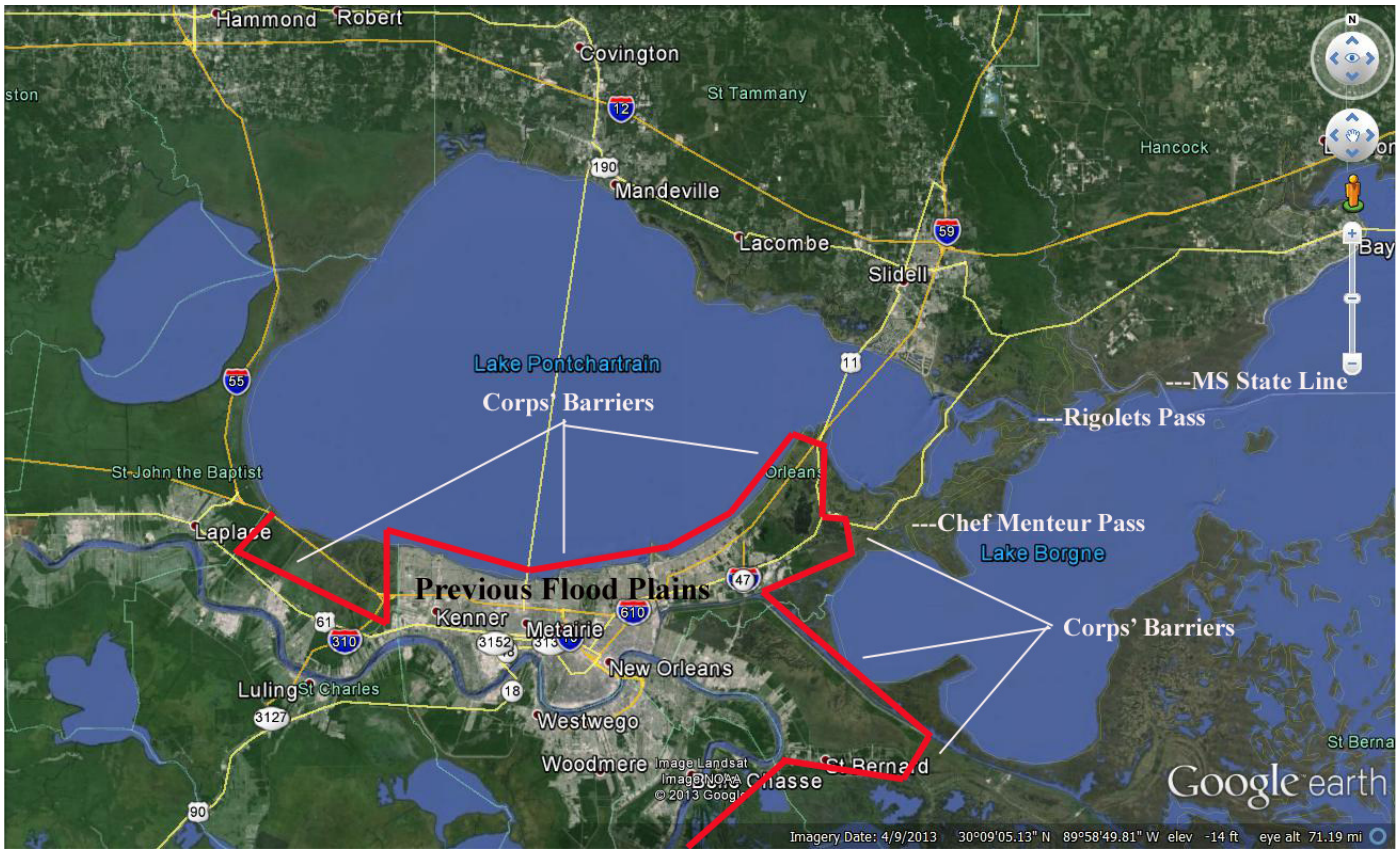
August 29, 2013
Subject to revision and corrections

This Report Documents
Why The Corps Should Re-evaluate Its Position
And Build Storm Surge Structures
At The Rigolets And Chef Menteur Pass



I. THE REASON WHY THE CORPS OF ENGINEERS ABANDONED ITS PLAN TO KEEP STORM SURGE OUT OF THE LAKE PONTCHARTRAIN BASIN

- An environmental lawsuit stopped the Corps' plans to build structures at the Rigolets and Chef Menteur Pass that would have restricted surge from entering the Lake Pontchartrain Basin.

II. THE REASONS WHY THE CORPS OF ENGINEERS IS NOT RE-EVALUATING ITS DECISION TO LEAVE THE LAKE PONTCHARTRAIN BASIN EXPOSED TO STORM SURGE

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

- Surge structures would cost as much as $40 billion and there is no funding.

- Surge structures would harm the state of Mississippi.

III. WHY THE CORPS OF ENGINEERS' REASONS ARE NOT VALID:

A. 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 Environmental Impact Statement (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 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 Lake Pontchartrain Basin has experienced tremendous growth, with a population of 700,000 residents and billions of dollars in homes, businesses and infrastructure that needs protection.
- Barriers built around Orleans Parish failed during hurricane Katrina; after spending an additional $14 billion, Orleans Parish has only limited storm risk reduction, not protection.
- 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.

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.

YOUR OPINIONS

Gates still needed for lake, ex-corps head says

Re: "Save Our Wetlands called a positive force," Your Opinions, June 19.

In 1974-'75 I was the colonel commanding the U.S. Army Corps of Engineers New Orleans District. Several groups, including Save Our Wetlands, fought tooth and nail to stop the corps designing twin barriers at the east end of Lake Pontchartrain. The gates would have remained open except when a large storm approached. Those structures were to supplement what we knew would be problematic dikes and levees nearer to the city.

The corps felt strongly that those barriers were essential to blunt a hurricane's attack, especially from the east. Yet the opponents took the corps to court to stop work on them.

After I left New Orleans, a federal judge was somehow persuaded to direct that work cease on the barriers' designs. The mantra then: "Just build the levees higher." We knew that was the wrong answer.

Several years later, the corps had not completely given up on pushing again for those essential barriers. By 1985, I was head of the corps (as chief of engineers in Washington). My staff brought me a proposal to stop fighting for the barriers; the opponents in Louisiana were still as strong as when I had left a decade earlier.

I was discouraged and decided to stop fighting for the barriers any longer. I had concluded: "The judge and Louisiana have spoken — the corps simply had not convinced the system."

In retrospect, that was the biggest mistake I made during my 35 years as an Army officer.

The recently released review of the Katrina engineering issues by the American Society of Civil Engineers appears to me to reconfirm the need for those barriers, or something like them.

As too many continue to rush around to find someone to blame for the Katrina engineering failures, they can blame me. I gave up too easily.

Now I hope that the studies reconsider barriers at the east end of the lake, much like the storm surge protection used by the Dutch, the Brits and other nations.

Elvin R. "Vald" Heiberg III
Lieutenant General
U.S. Army (Retired)
Arlington, Va.

B. 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 proceed with the Lake Pontchartrain structures.

November 2005
The 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 authorized 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"; tens of thousands of north shore residents commute to the south shore every day! 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.

It was the Corps, not Congress that chose to disregard Congress' mandate to protect the entire Lake Pontchartrain Basin and only protect the south shore of Lake Pontchartrain. If the Corps decided they had the authority to disregard Congress' mandate, then they have the authority to obey Congress' mandate!

As recent as November 2012, Col. Fleming, Commander of the Corps' New Orleans District Office stated:

- Structures at the Rigolets and Chef Menteur Pass is a good plan.
- Structures at the Rigolets and Chef Menteur Pass needs 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

C. Surge Structures Would Cost As Much As $40 Billion 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, page 125)*
- 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.

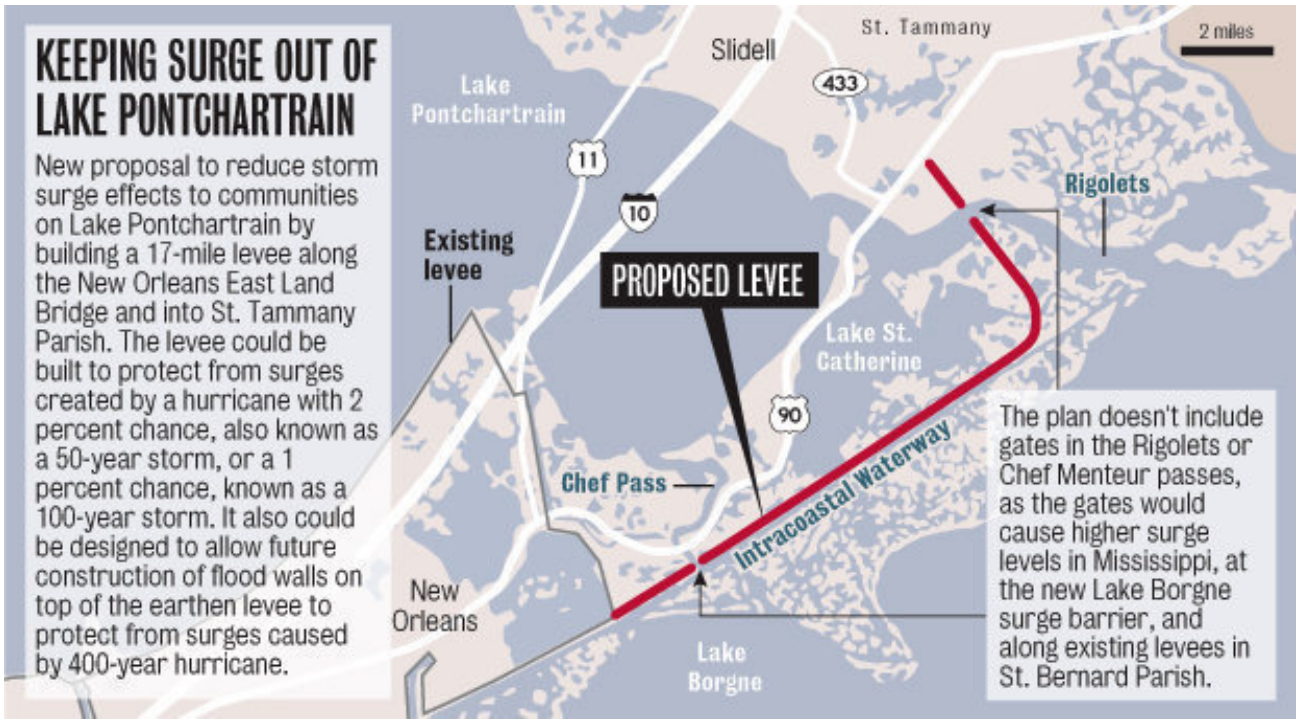


Illustration from New Orleans Times-Picayune article dated December 19, 2012

The 2012 Louisiana Comprehensive Master Plan for a Sustainable Coast supports Lake Pontchartrain structures and stated that they 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". (Page 136)

- 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 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.

D. Surge Structures Would Harm The State of Mississippi – FALSE:

- Properly constructed over-topping weir surge structures would have little impact on populated areas of Mississippi, while reducing pre-storm surged from entering the lake.
- The Corps' own 2009 Hydraulics Report (page 127) concluded that over-topping Lake Pontchartrain weir 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 weir 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 weir structures could be easily and inexpensively mitigated by constructing any number of projects, such as rock jetties perpendicular to the shoreline at the Louisiana Mississippi border. Certainly, if we can put a man on the moon we can restrict storm surge from entering the Lake Pontchartrain Bain without harming Mississippi. It's not rocket science; it's basic, strait 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

IV. THE CORPS OF ENGINEERS IS OBLIGATED TO PROTECT THE ENTIRE LAKE PONTCHARTRAIN BASIN (ALL 7 PARISHES THAT SURROUND THE LAKE) NOT JUST ORLEANS AND JEFFERSON PARISHES BECAUSE:

A. The Corps disregarded congress' Flood Control Act of 1965 mandate to provide hurricane protection to areas around Lake Pontchartrain and chose to shift congressional funding to south shore projects only. Congress' authorization and mandate to protect Lake Pontchartrain and Vicinity is still in effect.

B. The Corps once again disregarded congress' mandate to construct a comprehensive hurricane barrier system for the "greater New Orleans area" after Hurricane Katrina, and chose to use all the funding on south shore barrier projects only. The north shore of Lake Pontchartrain is part of the "greater New Orleans area".

C. Over-topping weir structures at the Rigolets and Chef Menteur Pass to prevent pre-storm surge from entering the lake basin is vital to the survival of the Lake Pontchartrain Basin communities.

Hurricane Katrina 2005, Slidell

Hurricane Isaac 2012, Laplace

D. Over-topping weir structures at the Rigolets and Chef Menteur Pass are the most cost-effective storm surge protection project in the state of Louisiana.

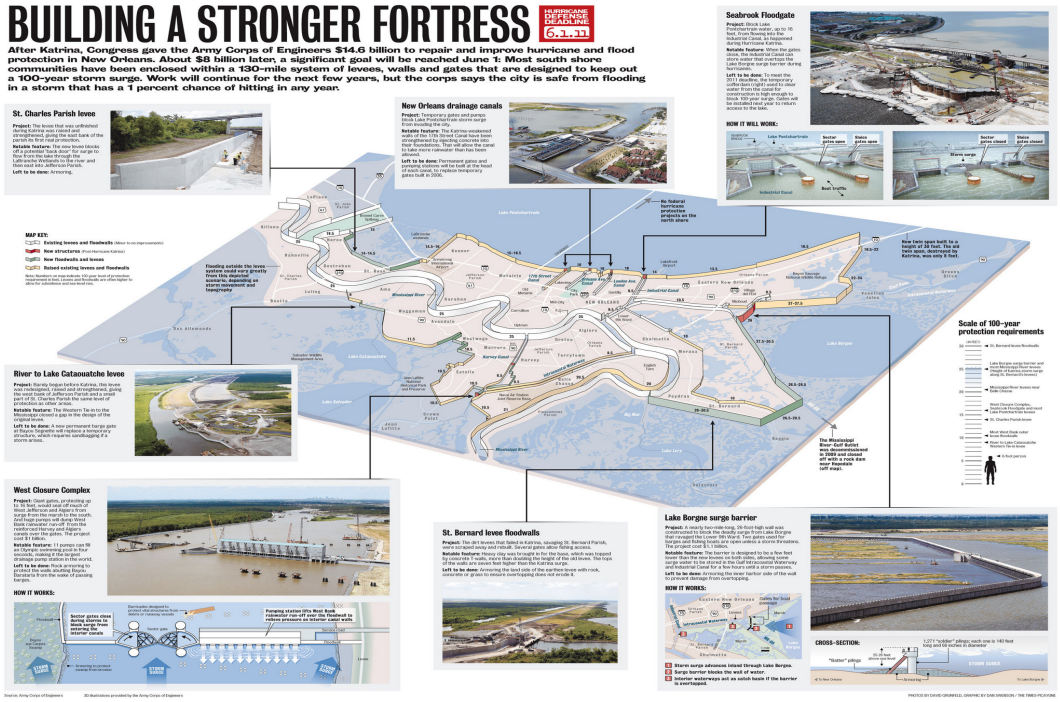
E. The Corps believes Lake Pontchartrain surge control structures are a good idea, but refuse to resubmit their EIS and submit a plan to keep surge from entering Lake Pontchartrain.

F. The Corps has increased Lake Pontchartrain storm surge by damaging natural surge protection barriers along Lake Borgne and Lake Catherine as a result of the Intracoastal Waterway dredging and the Mississippi Gulf Outlet dredging.

G. The Corps has increased Lake Pontchartrain storm surge by building barrier structures redirecting storm surge from St. Bernard and Orleans flood plans directly into the Lake Pontchartrain Basin.

H. The Corps has increased Lake Pontchartrain storm surge by building barrier structures on the south shore of Lake Pontchartrain redirecting storm surge within the Lake Pontchartrain Basin from Jefferson and Orleans parish flood plans directly into surrounding Lake Pontchartrain Basin communities.

I. The Corps built barrier structures without knowing its full impact to the north shore. Colonel Fleming stated the Corps did not evaluate 60% of their barrier structures when determining impact to the north shore.



J. 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 lease part of our policy". Therefore, the Corps has to mitigate the damage caused by the following projects:

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

Hurricane storm surge is diverted from previous flood plains that had existed in St. Bernard and Orleans and pushed into the confined boundaries of 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 wind shifts all the lake's storm surge is rapidly flushed east and can only escape through the narrow Chef Menteur and Rigolets openings, which pushes the surge directly into 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

CONCLUSION

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

- In 1977 the Corps decided it was easer 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 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 of $40 billion discourages discussions on providing surge protection for the lake basin. The actual estimate is under $3 billion and is the most cost effective project in Louisiana. A one time $3 billion investment will save more than $10 billion in repetitive losses.
- The Corps claims they do not have the authority or funding to pursue structures when 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 the state of Mississippi. The Corps' own report document that over-topping weir structures would have insignificant impact to Mississippi and simple and inexpensive structures can reduce the impact further. It's not rocket science, just basic engineering.
- Lieutenant General Elvin Heiberg, former commander of the Corps of Engineers New Orleans District, stated in his editorial that the Corps is to blame for leaving Lake Pontchartrain Basin exposed to storm surge and the Corps should reconsider structures to correct their error.
- Colonel Fleming stated the Corps did not evaluate 60% of their barrier structures when determining impact to the north shore. Colonel Fleming also 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. It is time for that mitigation to begin.

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 after hurricane Katrina? Watch a video of Colonel Fleming's explanation:

http://youtu.be/XnwVLkmY4sk

- **This report justifies the public's position that the Corps is obligated to provide storm surge protection to the entire Lake Pontchartrain Basin.**
- **It is hereby requested that the Corps formulate and expedite a mitigation plan to provide storm surge protection for the entire Lake Pontchartrain Basin.**