



The Flood Protection Authority-East

News of Your Flood Defense System

April 1, 2022



IHNC-Lake Borgne Surge Barrier Sector and Barge Gates

Message from Wilma Heaton, Director of Governmental Affairs

Since 1996, I have directed governmental and legislative affairs and in 2001 accepted additional duties as Confidential Special Assistant to the President and Board. In 2007 I was honored to accept both roles by the newly created regional reform board. So I have served under four Governors, eight Board Presidents and 60 Commissioners and worked with hundreds of legislators, elected officials and stakeholders on local, state and federal levels. Since 2010, I have also served on the Lakefront Management Authority (LMA) with dozens of volunteer citizens. However, the **most valued** number is that of the strongest link in the flood protection and risk reduction chain – the **employees**. The stories of unsung heroes and sacrifice would take more than a newsletter to even begin, but I can say with personal knowledge the sacrifice, personal risks and commitment endure today.

In 2005 our engineering and operations teams left their families and loved ones to operate for weeks out of the flooded and decimated Lakefront Airport during and after Hurricane Katrina (Katrina) without electricity and under very dire conditions. They saved over 2,000 lives and after Katrina the Region 1 Medical Institution Evacuation Plan (MIEP) was developed for the evacuation of hospitalized patients.

In response to Katrina the U.S. Army Corps of Engineers received Congressional authorization to construct the Hurricane and Storm Damage Risk Reduction System (HSDRRS) across five parishes (Orleans, Jefferson, St. Bernard, St. Charles and Plaquemines) at a cost of \$14.6 billion. Although I believe more people would have been saved had the Airport had protection, it was not included in the HSDRRS. Today, I believe our hard work is paying off and we are closer than ever to obtaining that funding. I thank the Board for their commitment and support.

Over the past 25 years I have been humbled to know the many challenges and sacrifices of our employees. In the profound words of Mother Pollard, *“my feet are tired, but my soul is rested”*. Employees continue the tradition of exceptional professional and selfless service – from police, to operations, maintenance, engineering and administrative staff. They *“Go the Extra Mile”* every day and there would be no system without them. **We value and salute the employees of the Flood Protection Authority. Thank you**

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f Flood Protection Authority

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IN THIS ISSUE PAGE

**New Orleans Lakefront
Seawall Erosion Control
Ribbon Cutting 2-3**

**FPA Project Receives
ACEC Grand Award 3**

**Living Shorelines -
Another Layer
of Protection 4-5**

**Going the Extra Mile -
Even when it isn’t our
primary mission 6-7**

**Mitigation of Outfall
Canal Erosion-
Orleans Avenue Canal 7**

**FPA Public Information
Alerts 8**

Seawall Erosion Control Project Ribbon Cutting



FPA Commissioner Richard Duplantier, Jr.

On the morning of February 15th, the FPA-East held a ribbon cutting ceremony to celebrate the completion of the Seawall Erosion Control Project. The main purpose of this project, which was conducted in several phases across 17 years, is to provide erosion/scour protection behind the nearly 100-year-old Seawall Steps that line the Lake Pontchartrain shoreline from West End Boulevard to the Inner Harbor Navigation Canal. Recreational aspects of the project include benches, trash cans, lighting, pavilions, planters, and park drainage improvements. ADA compliant plaza areas and other safety improvements were also added, such as vehicular bollards, crosswalk/traffic striping, and signage.



Councilmen Eugene Green and Oliver Thomas

The ribbon cutting was well attended by FPA-East staff, Lakeshore Drive area residents, and local officials. FPA-East Commissioner Richard Duplantier, Jr. opened the event, with Regional Director, Kelli Chandler, and Engineering Manager, Ryan Foster, speaking to the history and importance of the project. New Orleans City Council Members Oliver Thomas and Eugene Green spoke as well, while City Council Member Joe Giarrusso III was also in attendance.

After the ribbon cutting, attendees walked along the plaza at Lake Terrace Park and enjoyed slices of king cake. Several people expressed interest in learning what project the FPA-East would take on next and attending another opening event.



FPA Engineering Manager Ryan Foster



Regional Director Kelli Chandler



Seawall Erosion Control Project Ribbon Cutting



L-R: Commissioner Roy Arrigo, Director of Engineering Chris Humphreys, Engineering Manager Ryan Foster, Commissioner Richard Duplantier, Councilmember Oliver Thomas, Regional Director Kelli Chandler and Councilmember Eugene Green

FPA Project Receives ACEC Grand Award



L-R: Jordan Laviolette (Fenstermaker), Erick Kidder (Fenstermaker), Justin Bordelon (Fenstermaker), Sean Hodges (FPA) and Ricardo Mark Johnson (Fenstermaker)

In June of 2020, the Southeast Louisiana Flood Protection Authority-East (FPA) initiated a pilot project focused on evaluating new methods of data collection that could be used for surveying the New Orleans Outfall Canals while focusing on safety, repeatability, and cost-effectiveness. The FPA partnered with Fenstermaker to carry out this project.

The methodology developed by Fenstermaker proved to be a cost-effective means of immediate identification of impacts from erosion in drainage canal systems. Utilizing modern survey technology such as Multibeam and Aerial Drone-based LiDAR, the FPA team reduced the field time associated with collecting the data by approximately 40% compared to conventional data collection methods. Additionally, since the data generated from the survey resulted in a high definition high-accuracy surface model of the canal, the surrounding levees and floodwalls, the data could be utilized for analysis and projects outside of those mentioned, effectively saving the FPA money over time.

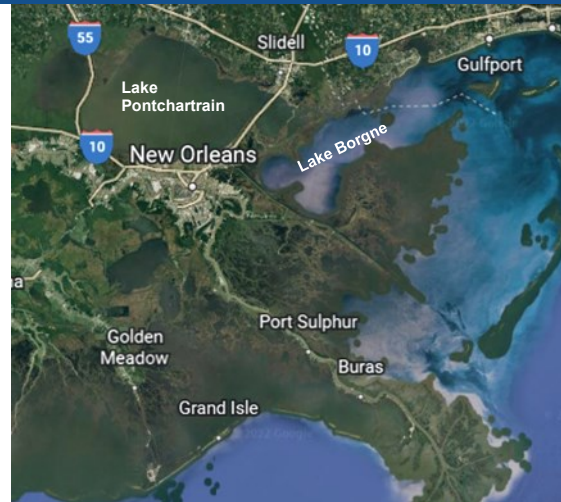


The project was chosen as the Grand Award recipient for the Survey & Mapping Category via the American Council of Engineering Companies (ACEC) of Louisiana Engineering Excellence Awards for 2021.



Living Shorelines - Another Layer of Protection

The Pontchartrain Estuary is a vast ecological system that includes three major bodies of water - Lakes Borgne, Pontchartrain and Maurepas. Lake Pontchartrain, which covers 630 square miles and averages only 12 feet in depth, connects with the Gulf of Mexico via the Rigolets and Chef Menteur Passes. These passes allow the exchange of fresh water that empties into Lake Pontchartrain from connecting rivers and bayous with salty Gulf water creating an estuarine system. Through the systematic and methodical drainage and pumping that took place over the past three centuries, starting in the early 1700s with simply digging a series of ditches and outfall canals and allowing gravity to do its job, as well as the construction of levees and embankments, the southern shore of Lake Pontchartrain, historically comprised of brackish marshes, swamps and forested wetlands, was converted to a hardened, urbanized landscape.



The loss of approximately 1,900 square miles of Louisiana coastal wetlands to the Gulf of Mexico between 1932 and 2000 significantly reduced the first line of defense for the Greater New Orleans area, and with the loss of much of this critical ecosystem, Gulf waters moved significantly closer to our metropolitan area. The completion in 1965 of the Mississippi River-Gulf Outlet (MRGO), a man-made navigation channel connecting the Gulf with the City of New Orleans, exacerbated the loss of our wetlands. In 2008, the MRGO was deauthorized and a 950-ft. rock dam constructed near Bayou LaLoutre, but natural habitats had already been changed or lost due to Gulf saltwater intrusion. However, the good news is that the closure of the MRGO has stabilized salinity levels back to their historic levels.

Everyone in the greater New Orleans Metropolitan area realizes the critical importance of the earthen levees and concrete floodwalls that ring our region and hold back the hurricane surge that would otherwise inundate our communities. A major portion of the Hurricane and Storm Damage Risk Reduction System (HSDRRS) constructed by the U.S. Army Corps of Engineers after Hurricane Katrina sits along the southern shoreline of Lake Pontchartrain. However, with predictions of sea level rise and more intense tropical storms and hurricanes due to climate change, additional layers of protection become increasingly necessary.

The National Oceanic and Atmospheric Administration (NOAA) is just one governmental entity recognizing and promoting the multiple benefits of constructing and maintaining living shorelines, otherwise known as “Engineering with Nature”. A living shoreline is a protected, stabilized coastal edge made of natural materials such as plants, sand, or rock that can be used to stabilize shorelines, reduce erosion, provide valuable habitat, improve water quality, store nutrients, and enhanced to offer recreational and educational opportunities. For the Greater New Orleans area, living shorelines would not only supplement protection provided by the HSDRRS by buffering storm surge and wave energy, but would also provide a degree of erosion protection for HSDRRS levees, floodwalls and other hardened structures.

Bucktown Marsh Living Shoreline Project (Jefferson Parish)

Jefferson Parish’s Bucktown Marsh Living Shoreline Project is an exceptional example of a multi-benefit project using nature-based, green infrastructure to soften a hardened shoreline and re-establish natural habitats. Lauren Averill, Council Aide for Jefferson Parish Councilmember Jennifer Van Vrancken, District 5, told the Flood Protection Authority’s (FPA) Coastal Committee at its January 20, 2022 meeting that the Bucktown Marsh Living Shoreline Project was a long time coming. The project’s concept was originally put forth by the newly-formed FPA Coastal Committee, working with the East Jefferson Levee District, Jefferson Parish and LA Sea Grant, but only through the hard work of Ms. Averill and the Jefferson Parish Team did it receive funding. The concept of using a living shoreline to serve as frontal protection for a Federal flood protection system had never before been done. Extensive investigations and studies were completed and Jefferson Parish coordinated with the FPA and the U.S. Army Corps of Engineers (USACE) on the project design. The Bucktown to Bonnabel area was selected for the initial project because of the opportunity to incorporate recreational and educational components. The project is scalable and can be used as a template for other areas along the East Jefferson lakefront.

Living Shorelines - Another Layer of Protection (continued)

The Bucktown Marsh Living Shoreline Project extends about one mile from Bucktown Harbor to the Bonnabel Boat Launch. Rock breakwaters will be constructed in the lake and dredge material will be used as fill to create approximately 20 to 30 acres of marsh habitat. A blueway trail is incorporated in the plan to provide kayaking opportunities.



The project adjoins the mitigation marsh constructed in 2003 near Bucktown Harbor when the Coast Guard Station was constructed. The mitigation marsh has weathered multiple storms, but is doing well. With the closure of the MRGO, the originally constructed brackish marsh is transitioning into a freshwater marsh.

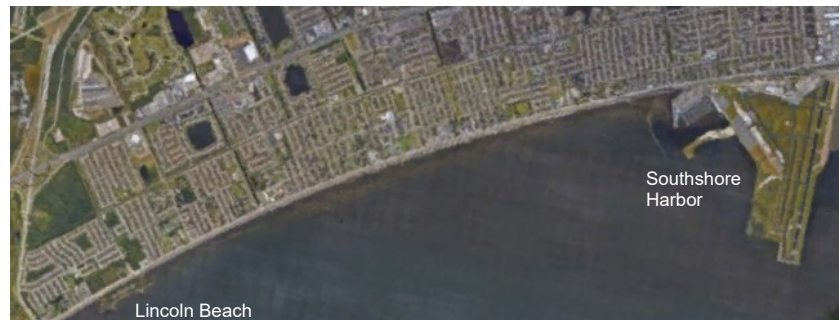
The project, which is anticipated to begin construction in the Fall of 2020, was funded using multiple funding streams totaling \$11 million: **Design:** National Fish and Wildlife Federation (NFWF) (\$250,000), and Jefferson Parish - Gulf of Mexico Energy Security Act (JP GOMESA) (\$250,000). **Construction:** NFWF (\$2.5 million), JP GOMESA (\$4 million), Louisiana State Capital Outlay (\$500,000), and Coastal Protection and Restoration Authority (CPRA) Coastal Surplus (\$3.5 million).

Jefferson Parish submitted a request for the CPRA to include funding in the State's 2023 Coastal Master Plan to construct the living shoreline project along the entire 10-mile length of the Parish's lakefront shoreline.

New Orleans East Living Shorelines Project (proposed)

Craig Gothreaux, Fisheries Biologist, Habitat Conservation Division, NOAA, provided a presentation to the Coastal Committee on the proposed New Orleans East Living Shorelines Project, which would extend from South Shore Harbor (adjacent to the New Orleans Lakefront Airport) to Lincoln Beach and provide multiple iterations of protection.

The project would be practicable in design and would not interfere with access dredging for future levee lifts or other methods of maintaining and improving the HSDRRS, or restrict the flow of outfall structures. Nature-based green infrastructure would be used to compliment the HSDRRS and soften the hardened shoreline by re-establishing natural habitats.



The proposed project would restore lost estuarine habitat by constructing approximately 3.5 miles (20 acres) of low and wide subtidal breakwater reefs to absorb wave energy. Beneficially utilized dredge material would be incorporated to create approximately 134 acres of marsh island platforms on the protected side of the living shoreline reefs. Additionally, through these efforts, 96 acres of improved habitat would be created for SAV (Submerged Aquatic Vegetation) colonization. The estimated construction cost is \$10 million to \$15 million, excluding contingencies. The net benefit of the project at 20 years would be 100 to 150 acres.

As with the Bucktown Marsh Living Shoreline Project, funding for the construction of the New Orleans East Living Shorelines Project must be sought from Federal, State and other funding opportunities with the support and assistance of coastal restoration and flood protection partners and stakeholders. These living shoreline projects would have synergistic effects with multiple restoration and mitigation projects around Lake Pontchartrain and throughout the Pontchartrain basin.

Projects to rebuild coastal wetlands and ecosystems can take years in the making just in terms of studies, environmental investigations, engineering and construction. However, none of this can take place without funding. Louisiana's coastal restoration needs are massive and these projects must compete for available funding primarily from Federal and State funding opportunities.

Glenda Boudreaux, Administrative Program Director

Going the Extra Mile - Even when it isn't our primary mission

In what amounts to the best show of teamwork and the positive outcome to the community that kind of effort leads to, our various departments have once again come together to do something that in my opinion is simply outstanding.

It all started with a phone call I received on December 27, 2021 at approximately 7 pm. The very urgent voice on the other end was describing to me an oil spill that happened on “the island” and needed someone to operate the Bayou Bienvenue swing bridge, the only land-based access to the area, in order to start the mitigation and cleanup efforts.

I did not know who this person was, or how he even managed to get in touch with me, but I assured him he had found the right person, and while I couldn't promise anything, I would do what I could to get someone out there to operate the bridge for him. I certainly understood the magnitude of the situation he was describing to me. We would later find out that the spill was over 300,000 gallons of diesel fuel. For some context, this is about equal to the amount of fuel stored at the 17th Street PCCP station, and intended to run all machinery at that site for a full 5 days.



Aerial--Bayou Bienvenue Sector Gate & Swing Bridge



Pipeline Rupture and Spill Area East of Swing Bridge



**Mike Mai, MR2,
Complex crew**

The immediate issue was that we were between the Christmas and New Year's holidays, and I knew most of my staff was on vacation and out of town. Fortunately, I was able to reach Mike Mai, Maintenance Repairer 2 (MR2), with the Complex Structures crew. Mike was on vacation, but willing to come in, and was on-site within an hour. He stayed overnight and well into the next morning manning the bridge – allowing the oil-spill response team to get the situation assessed, under control, and ready for the next steps in the cleanup process. Mike has always shown a very high level of commitment to this agency, and it is times like this that make me very proud of the public image we are able to portray for our agency.



**Lt. Bruno Mason,
OLDPD**

Still faced with further need for bridge operation, but not having anyone else in town and available on the Complex crew, Mike LeBlanc (Maintenance Superintendent) and Ross Debouchel (Levee Foreman) volunteered to pick up the slack until after the new year holiday when the Complex Structures crew would all be back and could take it from there. Their efforts allowed us the needed time to formulate a plan going forward to help see the cleanup efforts to the best possible conclusion.



**Mike LeBlanc, Maint.
Superintendent**



**Ross Debouchel,
Levee Foreman A**

The plan was made to allow the swing bridge to stay accessible to vehicles during the overnight hours, where vessel traffic would be minimally impacted, the operating equipment would not have to cycle as much, and our crews could return to more “normal” daily routines. Orleans Levee District Police Lt. Bruno Mason coordinated the police details and was specifically named by the cleanup contractor as an asset during the early days of this effort.

As the effort transitioned from an emergency response to a more structured cleanup, repair and recovery activity, the Complex Structure crew, led by Facility Maintenance Manager, Elbert Williams, was able to alter their regular work week, as well as schedule staff on their off-days (Friday thru Sunday), to allow the contractors maximum access to the area while maintaining waterway access for boaters. Eric Alexis (Electrical Specialist Leader), Jovan Trouillier (Electrical Specialist), Lyle Johnson (Maintenance Foreman), Audrianna Bluthgen (MR2), Patrick Brown (MR2), James Thomas (MR2), and previously mentioned Mike Mai (MR2) all tended to the bridge operations during this time.



Going the Extra Mile (continued)

In our Engineering group, Brittany Roberts (Engineer) stayed on top of the messaging to boaters, Roger Colwell (GIS Manager) flew drone missions to assess the site conditions, Sean Stevens (Eng. Tech. 3) monitored the site from the ground, while Chris Humphreys, Director of Engineering, lead the entire effort, coordinating the plan of action, and acting as the glue that bound the excellent chain of communication between the pipeline company, their various contractors, and the FPA's various groups.

As of the writing of this article (March 28), the cleanup is just winding down. However, there still remains about a month of monitoring that has to happen at this site, still engaging our staff at various levels. I am certain there are many other individuals in the FPA that have contributed to the overall success of this effort that I have not pictured or mentioned, but whose contributions are no less important.

This was a very bad diesel spill that could have been even worse if not for the dedication of all the employees, mentioned or not, that make this the great agency that it is. The location is remote, and the cleanup would have not been nearly as quick or successful if we did not have the staff and the infrastructure ready to assist. As a result, virtually all of the 8,300 barrels of diesel estimated to have spilled was recovered by the cleanup crews. The Louisiana Oil Spill Coordinators' Office, Department of Environmental Quality, the Pipeline owners and the emergency clean up contractor all agreed that without the bridge being available to them this outcome would have not been possible.

Darren J. Austin, P.E., Operations Director

Mitigation of Outfall Canal Erosion - Orleans Avenue Canal



Pre-construction Condition Example

The Orleans Avenue Canal runs north-south alongside the Western boundary of City Park. The canal provides critical storm water drainage for the city of New Orleans. Rainwater within the City of New Orleans is collected in drain lines and canals and is eventually pumped into the three outfall canals that allow the water to flow into Lake Pontchartrain. Storm water flows by gravity from the Sewerage and Water Board Pump Station Number 7 at the south end of the Orleans Avenue Canal, down the 2.4 mile canal, through the bypass gates at the Permanent Canal Closure and Pumps (PCCP) Station that is operated and maintained by the Flood Protection Authority (FPA), and into Lake Pontchartrain.

In the event of a storm where the FPA closes the PCCP bypass gates to protect the City from storm surge coming up the outfall canal, the water pumped into the canal to drain the city is then pumped out of the canal and into the lake to maintain safe water levels in the canal.

Within the last two decades, the U.S. Army Corps of Engineers (USACE) installed sheet piles to mitigate seepage and built stability berms, as well as deep soil mixing, to strengthen the canal's existing floodwalls and embankments. However, these upgrades aimed to help the floodwalls better withstand the pressure from elevated water levels in the canals, did not help control erosion of the interior canal banks.

Several years following the USACE projects, the Flood Protection Authority began work on the erosion control mitigation project along the inside of the canal. While the USACE projects fortified the wall and embankment on the landside of the floodwall, they did not address the erosion and animal damage that was occurring along the inside of the canal's floodwalls and embankments. The FPA's mitigation project rebuilt the banks with clay and protected the banks from further erosion with a geotextile and geocell system filled with crushed stone. The project is currently in the final stages.

Brittany Roberts, Engineer 2



Project Progress To-Date



FPA Public Information Alerts

sign-up



If we can't **REACH** you
we can't **ALERT** you

The Flood Protection Authority-East (FPA) strives to provide timely information to the public regarding public safety issues, closures and events that impact people, businesses and communities in order to minimize disruptions and keep the public safe and informed. The FPA implemented the Everbridge Management Platform for providing alerts to the public.

Everbridge is the industry standard using the most up-to-date communication technology and is widely used throughout federal, state and local government agencies, organizations, commerce and industry.

The FPA offers subscriptions to the following Keywords:

Floodgate (Any information on floodgate opening, closing or maintenance)

FPAAEast (Any general news about the Flood Protection Authority-East)

River (Any information about the High River or the Mississippi River)

HighTide (Information regarding gate openings and closures as they relate to high tide situations)

It's a simple process to register for these Emergency Alerts. Text the appropriate Keyword listed above to "333111" for the alerts you would like to receive. Should you wish to receive alerts offered under more than one Keyword, each Keyword must be texted to "333111".

New Enhanced FPA-East Website

The Flood Protection Authority-East officially rolled out its new website on July 1st. The website has been enhanced to make it more user friendly and better serve the public.

The website contains a wealth of information about our flood defense system (Hurricane and Storm Damage Risk Reduction System and Mississippi River Levee), the FPA's mission and the team of professionals that govern, manage, maintain and operate the critical flood defense system, as well as services offered by the FPA. The website also includes Teacher Resources and the middle School Lesson Plans developed by the FPA for Science and Social Studies: "Keeping Your Head Above Water—Know Your Flood Protection System" and "Flood Fight Along the Mississippi River—Mississippi River Lesson Plan."

Visit our website today - www.floodauthority.org

Southeast Louisiana Flood Protection Authority-East Board and Committee Meetings can be viewed via livestream by visiting the FPA website www.floodauthority.org and selecting Business - Board Meeting Videos. Click on live stream.

The Flood Protection Authority-East (FPA) is currently offering both in-person and virtual tours of the \$4 Billion Hurricane Storm Damage Risk Reduction System (HSDRRS), which spans East Jefferson, Orleans and St. Bernard Parishes. In-person tour groups have the option of visiting the 17th St Canal Pump Station or the Lake Borgne-IHNC Surge Barrier. Groups may sign up for both tours but may not be able to see both on the same day.

For additional information go to the FPA's website www.floodauthority.org and select "Facility Tours". Both in-person and virtual tours can be scheduled by clicking on "Schedule a Tour".

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Associate Editor: Wilma Heaton**

**Comments can be submitted to:
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