

EXHIBIT A – EXECUTIVE SUMMARY

RESILIENT ST. TAMMANY (RST) embraces the certain global impacts of climate change and sea level rise, strengthens infrastructure for a rapidly growing population, and transforms the mechanisms and management of our natural environment while preserving our quality of life, communities, and industries. St. Tammany Parish is a regional partner in the LAsafe framework which will set the standard for resilience nationally as a leader in addressing and adapting to the realities of water.

St. Tammany Parish is proposing a multi-layered approach to resilience. This includes revised development standards that integrate a synergy of retrofitted stormwater management, marsh restoration, and green infrastructure projects including a reconfigured environmental corridor that incorporates projects focused on social resilience and overall behavioral health and wellness. In addition, St. Tammany is spearheading, with its partners, workforce creation programming that directly aligns with the project initiatives, so that projects protect our citizens and incorporate the population of our Parish in the crucial role of making these projects happen.

St. Tammany Parish is located on the north shore of Lake Pontchartrain, separated from the major population centers of New Orleans and Jefferson Parish by a 6-mile bridge on the eastern edge of the lake and the 24-mile Lake Pontchartrain Causeway at the lake's center. Construction of the Causeway, some fifty years ago, began the transformation of the Parish from a low density rural population into the fastest growing parish in the State, with the fifth largest population, highest average housing costs in the area, and the best public schools in Louisiana. The effects of the accelerated growth over the last decade are most relevant to the objectives of the National Disaster Resilience Competition (NDRC).

St. Tammany Parish, as a regional leader committed to resilience, plans to serve as an integral part of the LASafe Framework, increasing disaster preparedness and resilience.

Specifically, **RESILIENT ST. TAMMANY** is proposing a layered approach to resilience:

STRENGTHEN DEVELOPED AREAS: With an ever-growing population along the I-12 corridor, there is an imminent need to retrofit the current infrastructure system. **Layer Strengthen** focuses inland and provides direct protection to 70% of the population living in the Coastal Zone. **Layer Strengthen** proposes seven stormwater management projects that will increase conveyance, improve water quality and regenerate the nutrients within the coastal marsh. The first of the green infrastructure projects will begin on the Eastern side of the Parish in the City of Slidell. Two major drainage canals, W-14 and W-15, serve as vital organs for moving water through both incorporated and unincorporated portions of the City of Slidell. Through detailed watershed basin models by the Parish, its partners, and the Army Corps of Engineers, it has been established that increasing the capacity of these canals while providing associated detention ponds will diminish the risk of flooding in densely populated areas of the City. In addition, these improvements will provide a much needed water quality benefit via vegetative plantings, aeration and recreated wetlands. These areas will be further improved via recreation trails, bike and multi-use paths, parks and playgrounds in order to provide synergy between needed infrastructure upgrades and the surrounding communities.

EMBRACE THE COAST: With the understanding that we must adapt to changing climates and secure ourselves against impending risk, **Layer Embrace** specifically addresses coastal degradation and erosion through marsh restoration and preservation as the first line of defense. The parish will implement a program of dedicated delivery to utilize soil, dredged as a result of storm water detention projects in the area and otherwise disposed, to create marsh along

the 57-mile northern coast of Lake Pontchartrain. There are six major storm water detention projects in the proposed activities area that will produce vast quantities of suitable material for marsh creation. **Layer Embrace** creates and restores marsh, preserves and conserves non-impacted areas, and insures any new development in coastal areas align with science-based building methods. **Layer Embrace** rebuilds land that will serve as a buffer from storm surge, reduces overall base flood elevations, maintains critical ecosystems, and protects the State's fishery industry. **Layer Embrace** provides an innovative method to utilize a by-product of an infrastructure project as a benefit to the coastal community.

TRANSFORM DEVELOPMENT AND GROWTH: Transformation requires a marked change in thinking. **Layer Transform** utilizes lesson learned from the six major disasters over the past 10 years to prepare for the certain future population migration and resettlement to the Parish. **Layer Transform**, the most critical of the three layers, proposes a revision to Parish Development Standards and establishes a new Unified Development Code (UDC). The revisions will produce a model for the way we create and interact with our natural and built world institutionalizing resilient development and growth for generations to come. **Layer Transform** also incorporates the three regional initiatives focusing on social resilience, disaster response, and workforce development: 1) Safe Haven Behavioral Health Campus 2) Safe House and Multi-Use Disaster Response Facility, and 3) NTCC Water and Coastal Workforce Initiative Campus.

RESILIENT ST. TAMMANY is positioned to set (**S**trengthen, **E**mbrace, **T**ransform) the standard for resilience. As a leader in resilience, St. Tammany is positioned to not only address remaining local recovery needs but also to serve as a leader in Louisiana's overall strategy for increasing disaster preparedness and resilience. **RESILIENT ST. TAMMANY**

(RST) represents a strong diverse economy with innovative development, reinvestment in our natural resources and cultural diversity to preserve and protect the quality of life that makes St. Tammany Parish vibrant and unique.

EXHIBIT B – THRESHOLD REQUIREMENTS

Environmental Degradation – At approximately 850 square miles, St. Tammany Parish is one of the largest parishes in Louisiana. More than half of the land in St. Tammany is designated as wetlands, with three rivers and several more substantial bayous located in a watershed that drains across 65% of the Parish into Lake Pontchartrain and the remaining 35% draining into the Pearl River watershed along the Mississippi border. The geography and topography of St. Tammany dictates the need for smart and strategic planning for the vast growth and development current experienced by the Parish. The Parish is vulnerable to natural disasters due to increasing loss of coastline and marshland. As a result of its location along Lake Pontchartrain and proximate to the Gulf of Mexico, there have been repetitive events that have impacted St. Tammany Parish. The damage sustained from Hurricane Isaac exacerbated loss to wetlands, land, and environmental protections from previous storms. The environmental damage from Hurricane Isaac has not fully been addressed and it will take significant resources to fully recover and create additional resilience for St. Tammany Parish.

The Fritchie Marsh, an area of intermediate to brackish marsh near the City of Slidell, was heavily impacted by Hurricane Isaac. The marsh is approximately 6,291 acres in size and bound to the east by Highway 90, to the south and west by Highway 433 and to the north by portions of the W-14 canal, as well as developed and undeveloped land below Slidell. In the

time of a storm, Fritchie Marsh is the final land mass before reaching the residents of Slidell. The marsh is comprised of US Fish and Wildlife Service property as well as privately owned land. Both the W-14 and W-15 canals, as well as part of the Pearl River via Salt Bayou, outfall into the Fritchie Marsh. The Fritchie Marsh provides many environmental and storm protection benefits for lower St. Tammany Parish and as such, the Parish believes protecting this area is of vital importance. According to an analysis prepared by GCR Inc. (see Dropbox folder), Fritchie Marsh lost approximately 273 acres of land from 2010 to 2012, largely due to Hurricane Isaac.

The Parish is currently working on a project aimed at reducing the marsh loss rates by improving the hydrologic conditions in the area through management of available freshwater and building new marsh with material removed from conveyance channels. The total cost for the current Fritchie Marsh restoration project is \$5,535,000. The Parish has applied for FEMA funding in the amount of \$3,780,750 toward this effort. In addition, the Parish has received \$400,000 from the State Coastal Protection and Restoration Authority (CPRA). St. Tammany does not have funding to cover the remaining \$1,354,250 (see Dropbox folder).

I. ELIGIBLE APPLICANT

St. Tammany Parish Government

(1) Partners

St. Tammany has partnered with three exceptionally experienced partners, The Duplantis Design Group, Design Workshop and GCR Inc., ensuring Resilient St. Tammany can and will be implemented effectively.

The Duplantis Design Group (DDG) is a multi-disciplinary regional firm offering professional civil engineering, architecture, and landscape architecture design services. DDG is

educated as to the landscape of needs within the Parish and as a result DDG supports STPG in the development of storm drainage systems, urban infrastructure, and sustainable design guidelines that can respond to and accommodate anticipated growth scenarios and flood protection issues presented by climate change and land loss factors. DDG has provided program management on the Parish's storm water regional detention program projects initiated in 2009 (funded by OCD-DR) and drafted guidance to support STPG's coastal initiatives. Further, DDG was integral to the completion of the Parish's January 2015 Coastal Protection and Restoration (CPRA) Parish wide Watershed Study addressing stormwater management and water quality.

Design Workshop (DW) has extensive experience in landscape architecture, planning, implementation, and the design of green infrastructure, parks and greenways. DW has provided lead support to STPG through the planning effort of St. Tammany Parish Culture, Recreation and Tourism Plan which provides recommendations for the revitalization of storm-damaged properties throughout the Parish. DW supports STPG in the development of sustainable infrastructure systems and urban design guidelines that can respond to and accommodate anticipated growth scenarios and flood protection issues presented by climate change and land loss factors. DW will continue to support the land planning, design and implementation of green infrastructure and active recreation facilities throughout the Parish as part of Resilient St. Tammany.

GCR Inc. works on behalf of county and state governments to manage all aspects of CDBG and CDBG-DR funding. The GCR team of planners and project managers assist clients in the full lifecycle of projects and programs. The GCR team includes subject matter experts in compliance and monitoring, systems support, procurement, application processing, auditing

oversight, and grant closeout. In addition, the Parish has enlisted GCR Inc. as a partner to aid in performing BCAs due to its industry-specific expertise that will enlighten the process, particularly given their experience in utilizing the FEMA BCA software platform (Benefit Cost Toolkit Version 4.5.5/4.8/5.0).

II. ELIGIBLE COUNTY

According to <http://www.huduser.org/portal/CDBGDR/Disaster-AppendixA.pdf>, St. Tammany Parish is designated by HUD to be a “Most Impacted and Distressed” County (Parish) as a result of Louisiana Hurricane Isaac (DR-4080).

III. MOST IMPACTED AND DISTRESSED TARGET AREA(S)

According to <http://www.huduser.org/portal/CDBGDR/Disaster-AppendixA.pdf>, St. Tammany Parish is designated by HUD to be a “Most Impacted and Distressed” County (Parish) as a result of Louisiana Hurricane Isaac (DR-4080).

IV. ELIGIBLE ACTIVITY

Project Activity	Eligible Activity
Fritchie Marsh Restoration	Public Facilities And Improvements
Drainage Canal Conveyance	Public Facilities And Improvements
Creation Of Stormwater Detention Ponds	Public Facilities And Improvements

St. Tammany Trace Extension	Public Facilities And Improvements
Environmental And Recreational Enhancements	Public Facilities And Improvements
Safe Haven	Public Facilities And Improvements

The proposed activities for consideration in this application qualify under eligible activities Public Facilities and Improvements Infrastructure 03I, 03F, and 03P.

Resilient St. Tammany (RST) proposes a revision to Parish Development Standards establishing a new UDC. (EA 020 or 20A) The UDC will incorporate science based requirements in relation to stormwater management, improved conveyance, green infrastructure, and community enhancements. The infrastructure activities proposed (03I) represent one of the seven major stormwater retrofit projects of Resilient St. Tammany.

In addition to Planning and Infrastructure, RST encompasses an expansion of the Tammany Trace, the spine connecting the communities Parish-wide and two community parks. (03F)

Finally, RST proposes the Phase 1 in the development of Safe Haven, an all-inclusive behavioral health and wellness campus (03P). Safe Haven is designed for a recovery-oriented system of care (ROSC) approach which requires a flexible, collaborative continuum of services for purposes of serving the deficient as a result of Medicaid cuts currently experienced not only in St. Tammany but nationwide.

V. RESILIENCE INCORPORATED

Resilient St. Tammany is a multi-layered approach to resilience. RST retrofits major infrastructure corridors focusing on stormwater management and strengthening the first line of defense, the 57-miles of coast along Lake Pontchartrain. The Fritchie Marsh restoration, improvements made to the W-14 and W-15 drainage canals, and the construction of six integrated detention ponds is a direct step to strengthen the physical defenses and reduce the risks to our communities in the wake of disaster.

St. Tammany recognizes that the key to resilience is not only the protection from disaster, but also insuring economic and social resilience of the community. The expansion of the Tammany Trace additional bike trails and community parks incorporated into the design of the infrastructure projects provides synergy and connects the people of the parish not only to one another but to job opportunities and resources. Expansion of the Tammany Trace will provides alternate transportation and connectivity to the new proposed parks. These projects will work in in-sync, improving air quality and alleviating threats to the health of human beings, trees, lakes, crops, and animals. Both provide alternative venues for social interaction, physical activity, and nature contact, all of which are designed to increase connectedness to other living things and prospective opportunities.

The RST Layers, strengthen developed area, embrace the coast, and transform development and growth are the core of the revisions to the Development Standards and are the scope of the new UDC.

The fact that STP been impacted by five major named hurricane and a catastrophic oil spill over the last ten years has led to an undeniable gaps. While damage from Hurricane Isaac was substantial in its own right, its impact was particularly devastating to a community still

recovering, economically and physically, from previous disasters. The impacts, both direct and indirect, of multiple disasters.

VI. NATIONAL OBJECTIVE

The RST NDRC focus area is located in the City of Slidell. Slidell is the largest urban area in STP with a population of approximately 90,000. (Slidell also houses the majority of the LMI census population STP.) Slidell maintains the lowest base flood elevation within the Parish providing the highest number of severe repetitive loss and repetitive loss properties. As such, Slidell has experienced a drastic reduction in property values, an increase in insurance premiums, and other gaps specifically as a direct result from Hurricane Isaac.

The UDC will prevent further unwanted development within Slidell and direct development to less dense areas higher while protecting the population remaining in the coastal zone below I-12.

Fritchie Marsh Structural and Hydrologic Restoration will provide protection from flooding to City of Slidell, of which 16.6% of the city is living below the poverty level (Action Plan)

The W-14 canal runs along and through the two most dense LMI areas in Slidell: the first toward the northern part of the City bound by interstate 12 to the north, Highway 11 to the east, and Highway 190 to the south; the second, further south, bound by Highway 11 to the west, Highway 190 to the north, interstate 10 to the east and intersected by highway 433.

Of the six ponds, Bayou Bonfouca pond, Ben Thomas pond and Fremaux pond are located in LMI areas. They will also provide much needed water quality benefits.

Ben Thomas Park will be located in Slidell's northernmost LMI area and Hiawatha Park will connect LMI communities to it.

One hundred and eighty (180) patients suffering from behavioral health issues are seen in local area hospital emergency rooms monthly. Emergency responders and law enforcement personnel have no other drop off point for those who suffer with behavioral health issues and who are non-violent. The average length of stay in the ER is 10-24 hours per behavioral health patient. The monthly cost per behavioral health patient to hospitals is \$1,500.00-\$2,000.00 or \$3,240,000.00 per year. Safe Haven will be a place where those patients who suffer from behavioral health issues and who otherwise do not need to be treated in the ER, can be diverted and receive initial behavioral health care. Hospitals will realize a cost savings because most patients who present to the ER with behavioral health issues are indigent. Further, the greater population needing emergency room care will be treated more efficiently. Without having to assess and stabilize a patient with behavioral health issues, ER personnel can treat more patients with medical needs.

Representatives from parish hospitals serve on the Behavioral Health Task Force and are committed as partners for a successful ER diversion program at Safe Haven.

VII. OVERALL BENEFIT

Through marsh restoration, drainage improvements, bike path, pond, and park construction, and the Safe Haven behavioral health campus development, Resilient St. Tammany will provide protection, connectivity, and opportunity to all of Slidell's LMI communities. By enhancing the effectiveness of Fritchie Marsh and the W-14 drainage canal, homes throughout

Slidell, especially the LMI populations that lie closest to the marsh and canal, will suffer less flooding risk resulting in lower insurance rates and household savings. The St. Tammany Trace bike path extensions will connect Slidell, especially its LMI communities, providing access to jobs and resources throughout the City. Furthermore, the trace extension will provide added access to the rest of the Parish, allowing those who are underserved to reach amenities outside of the City of Slidell without the need for a car. As the entireties of each LMI population within Slidell will be directly touched by impacts of these projects, at least 50 percent of funds will provide sufficient benefit to low- and moderate-income persons. Finally, Safe Haven will provide mental and behavioral health access to previously underserved populations, most importantly an LMI population that otherwise may end up within the prison system.

VIII. ESTABLISH TIE-BACK

Fritchie Marsh, an area of intermediate to brackish marsh near the City of Slidell, sustained major impact during Hurricane Isaac. The marsh is approximately 6,291 acres in size and bounded on the east by Highway 90, on the south and west by Highway 433 and on the north by portions of the W-14 canal, as well as developed and undeveloped land below Slidell. For an approaching storm, Fritchie Marsh is the final land mass before reaching the residents of Slidell. The marsh is comprised of US Fish and Wildlife Service property as well as privately owned land.

Both the W-14 and W-15 canals, as well as part of the Pearl River via Salt Bayou, outfall into the Fritchie Marsh. The Fritchie Marsh provides many environmental and storm protection benefits for lower St. Tammany Parish and as such, the Parish believes protecting this area is of

vital importance. According to an analysis prepared by GCR Inc. Fritchie Marsh lost approximately 273 acres of land from 2010 to 2012, largely due to Hurricane Isaac.

The Fritchie North Marsh Creation project is a 4,395 acre marsh creation project located in St. Tammany Parish along the Lake Pontchartrain Shoreline. This project is located near Salt Bayou with most of the site being located on the Big Branch Marsh National Wildlife Refuge. The low salinity brackish marsh in this area was reasonably stable until Hurricane Katrina struck in 2005. Over the following decade this area has seen an increase in open water by nearly double, far exceeding the previous rate of deterioration. With an increase in tidal exchange due to increased land loss and increased wind driven fetch, the rate of marsh loss is expected to continue. The goal of this project is the restoration of 2,417 acres of marsh as well as the nourishment of 1,997 acres of stressed marsh land using sediment that is hydraulically dredged from Lake Pontchartrain. Sediment would be placed throughout the site to a height of +1.2 NAVD 88. Tidal creeks exist and would be maintained in order facilitate water exchange and fisheries access. Containment dikes would be gapped and/or degraded when practical.

Due to Hurricane Isaac's slow moving nature, water was gradually pushed from Lake Pontchartrain into Bayou Bonfouca, resulting in up to five feet of water after the drainage pumps were overwhelmed. By constructing six detention ponds, including one along Bayou Bonfouca, and two parks the Parish will increase its ability to store and retain storm water during a weather event, elevating the risk of extreme flooding throughout Slidell. In addition, the extension of the St. Tammany Trace bike path provides added access throughout the parish with minimal addition of impervious services such as roads. This will allow optimal green space to be maintained in a

cohesive, connected, and comprehensive manner, supporting the drainage needs of the parish while still considering the transportation needs of the community.

Tammany Parish, Louisiana currently stands as one of the fastest-growing, most affluent parishes within the state of Louisiana. However, despite being ahead of the rest of the state in terms of public health risk factors like poverty, education, and unemployment, there is a growing concern regarding the state of local mental health care. In addition to recent funding cuts to the Medicaid system, St. Tammany Parish has undergone a large spike in the number of suicides since 2007. Since that time, the suicide rate per 100,000 residents has remained close to 19.4, well above the national rate of 12.3 suicides per 100,000. While the demand for mental health services increases, funding sources continue to decline. Consequently, many of those with mental health problems are increasingly finding treatment in emergency departments of hospitals or jail cells. Without a full, comprehensive approach to the delivery of mental health services, many of the most vulnerable members of the community will continue to be left untreated. Safe Haven will be the solution to this need and ensure that with the next disaster there is adequate response to the social and mental well-being of the region.

IX. BENEFIT-COST ANALYSIS

Social, environmental, and economic resilience factors were all considered when analyzing the benefit to cost ratio of the Resilient St. Tammany project. Total life cycle costs are \$100,440,639.00 while total benefits equal \$232,528,718. This results in a BC ratio of 2.32.

X. MOST IMPACTED CHARACTERISTICS

i. Narrative Description

ii. Supporting Data

St. Tammany Parish suffered from Hurricane Isaac in August 2012 resulting in Presidential disaster declaration DR-4080. Noting the extent of most impacted and distressed characteristics, HUD pre-qualified St. Tammany Parish as an eligible applicant for the NDRC.

XI. MOST DISTRESSED CHARACTERISTICS

i. Narrative Description

ii. Supporting Data

Noting the extent of **most impacted and distressed** characteristics, HUD pre-qualified St. Tammany Parish as an eligible applicant for the NDRC.

Hurricane Isaac made landfall on the Gulf Coast of Louisiana on August 28, 2012 and remained over Southeast Louisiana for three days with winds of 80 mph whose reach extended over 200 miles. The slow moving storm produced unprecedented amounts of rainfall (61 year

event in East St. Tammany/100 year event in West St. Tammany) causing significant flooding throughout the Parish, specifically in the low lying areas of Slidell, Mandeville, Madisonville, and Lacombe. Power outages, debris covered streets, and business closures lasted weeks as a result of the inability to drain floodwaters caused by extraordinary amounts of rainfall.

Hurricane Isaac caused widespread damage to housing, businesses, infrastructure and exacerbated environmental degradation in St. Tammany Parish. The Parish was designated a Most Impacted County (Parish) via public notice on May 29, 2013 by the U.S. Department of Housing and Urban Development (HUD). Hurricane Isaac further exacerbated damage from previous disasters including Hurricanes Katrina and Rita in 2005, Hurricanes Gustav and Ike in 2008, and the Deepwater Horizon Oil Spill in the Gulf of Mexico in 2010.

XII. UNMET NEEDS

i. Narrative Description

ii. Supporting Data

Housing - The Federal Emergency Management Agency (FEMA) conducted an assessment of homes damaged during Hurricane Isaac in 2012. The assessment revealed 3,812 owner occupied households with damage, and 1,472 renter households with damage within St. Tammany Parish (STP 2013 Action Plan). According to the National Flood Insurance Program (NFIP), there are 1,358 insured properties that filed flood claims for Hurricane Isaac. St. Tammany Parish Government (STPG) did not allocate Hurricane Isaac CDBG-DR funding for a recovery housing program. STPG has utilized over \$30 million from both the Hazard Mitigation Grant Program (HMGP) and Flood Mitigation Assistance (FMA) toward eliminating or drastically reducing future flood claims to residences throughout the Parish. Furthermore, FEMA

approved \$6,734,674 in housing assistance to renters, and \$8,708,405 to homeowners for Hurricane Isaac.

Despite significant Federal and private investment in repairing homes damaged by Hurricane Isaac, there is a desperate need to provide long term increased security to the homes within the community. As the parishes first line of natural defense against storms, as long as Fritchie Marsh remains weak and unrestored all homes within the Slidell area, no matter their level of repair or elevation since previous disasters, remain vulnerable. Furthermore, inadequate conveyance within critical drainage systems such as the W-14 leave homes at persistent risk of flooding.

Infrastructure - Public infrastructure damage caused by Hurricane Isaac included water control facilities, roads, bridges, and levees. STPG has made significant progress in addressing damage caused by Hurricane Isaac and previous federally declared disasters. As of 2013, the Parish had 29 infrastructure projects underway using Isaac and pre-Isaac CDBG-DR funds, 125 projects in planning stages, and 36 completed infrastructure projects (including drainage, levee repairs, roads, water and sewer repair, and conservation). Despite this progress, the Parish still faces unmet infrastructure recovery needs caused by Hurricane Isaac. The Parish sustained damage to the Drainage District No. 2 Lakefront Pump Station and Levee Segments 1 and 3B in Slidell. The project costs for replacing these two critical pieces of infrastructure are \$520,000 for the Lakefront Pump Station and \$67,019 for Levee Segments 1 and 3B, for a total of \$587,019. Total replacement costs exceed the amount of funding available. To date, \$22,678 in FEMA Public Assistance has been allocated to Slidell Levee Segments 1 and 3B. A total of \$163,875 in FEMA Public Assistance has been allocated to Drainage District No. 2's Lakefront Pump Station. Therefore, the total unmet infrastructure needed for both Lakefront Pump Station and Levee Segments 1 and 3B is \$400,466.46.

Economic Revitalization - The economic impact from Hurricane Isaac consisted of flood and structural damage to businesses, loss of inventory, and business interruption (i.e. revenue loss) due to road closures and power outages. Since the Parish relies on sales tax revenue for operations and capital projects, the economic damage caused by Hurricane Isaac impacted the Parish's ability to recover and rebuild. Parish staff surveyed small businesses in the most heavily impacted areas (i.e. the cities of Slidell and Mandeville and the Town of Madisonville). A total of 52 business owners were contacted to discuss remaining repair and mitigation needs, as well as continued loss of revenue as a result of Hurricane Isaac. Five of the fifty-two business owners have certified that remaining damages and/or mitigation needs are a result of Hurricane Isaac and they have inadequate resources to complete the needed repairs or mitigation measures. Based on the surveys, local businesses received funding from various sources, both private and public, including insurance companies. The total amount of funding received by area businesses in total is still being determined; however, based on discussions with business owners, the Parish has confirmed that there are remaining recovery and mitigation needs.

Environmental Degradation - At approximately 850 square miles, St. Tammany Parish is one of the largest parishes in Louisiana. More than half of the land in St. Tammany is designated as wetlands, with three rivers and several more substantial bayous located in a watershed that drains 65% of the Parish into Lake Pontchartrain and the remaining 35% into the Pearl River watershed along the Mississippi State border. The geography and topography of St. Tammany dictates the need for smart and strategic planning for the vast growth and development currently experienced by the Parish and predicted for the future. St. Tammany Parish is vulnerable to natural disasters due to increasing loss of coastline and marshland. As a result of its location along Lake Pontchartrain and proximate to the Gulf of Mexico, repetitive events have

impacted St. Tammany Parish. The sustained damage from Hurricane Isaac exacerbated loss to wetlands, land, and environmental protections from previous storms. The environmental damage from Hurricane Isaac has not fully been addressed and it will take significant resources to fully recover and create additional resilience for St. Tammany Parish.

One area that has sustained major impacts is the Fritchie Marsh, an area of intermediate to brackish marsh near the City of Slidell. The marsh is approximately 6,291 acres in size and bounded on the east by Highway 90, on the south and west by Highway 433 and on the north by portions of the W-14 canal, as well as developed and undeveloped land below Slidell. For an approaching storm, Fritchie Marsh is the final land mass before reaching the residents of Slidell. The marsh is comprised of US Fish and Wildlife Service property as well as privately owned land. Both the W-14 and W-15 canals, as well as part of the Pearl River, via Salt Bayou, drain into the Fritchie Marsh. The Fritchie Marsh provides many environmental and storm protection benefits for lower St. Tammany Parish and, as such, the Parish believes protecting this area is of vital importance. According to an analysis prepared by GCR Inc., Fritchie Marsh lost approximately 273 acres of land from 2010 to 2012, largely due to Hurricane Isaac. The State's Coastal Restoration and Protection Authority has also deemed the Fritchie Marsh as an essential area for protection and has included the marsh creation project in its Coastal Master Plan.

The Parish is currently working on a project aimed at reducing the marsh loss rates by improving the hydrologic conditions in the area through management of available freshwater and building new marsh with material removed from conveyance channels. The total cost for the current Fritchie Marsh restoration project is \$5,041,000. The Parish has applied for FEMA funding to cover 75% of the cost (or \$3,780,750). In addition, the Parish has received \$400,000

from the State Coastal Protection and Restoration Authority (CPRA). St. Tammany does not have funding to cover the remaining \$860,250.

EXHIBIT C: FACTOR 1 – CAPACITY

I. PAST EXPERIENCE

i. General Administrative Capacity

STPG has demonstrated substantial capacity and experience launching both small-scale, targeted initiatives and large-scale efforts through its planning and implementation of its recovery and resilience efforts resulting from the series of recent disasters in the region. Examples of post-disaster initiatives undertaken include: Louisiana Recovery Authority (LRA) grant in 2007 to initiate the St. Tammany Long-Term Community Recovery Program, which included housing and community development planning for eight municipalities in the Parish; HUD and Louisiana Office of Community Development – Disaster Recovery Unit (OCD-DRU) grant in 2009 to develop the St. Tammany Parish Community Resiliency Program; HUD grant of Hurricane Isaac CDBG-DR funds and the development of an Action Plan in 2013 to address long-term recovery needs; working with the Coastal Protection and Restoration Authority (CPRA) to develop the St. Tammany Watershed Management Study to address stormwater management water quality issues; partnering with Tangipahoa Parish and CPRA on the North Shore Protection and Planning Study to catalogue all flood protection needs and initiatives for the entire northern shoreline of Lake Pontchartrain; and coordinating with a multi-disciplinary team to develop the Environmental Corridor Study to better manage natural resources and provide a framework for smart growth planning. Through each of these initiatives, the Parish has undertaken significant outreach and engagement activities across the areas impacted by these

recent disasters. Efforts have included consultation with local governments, advocacy groups, state and local agencies, universities, engineering and design consultants, and with individuals and institutions in the recovering communities. The Parish has also welcomed monitoring visits by HUD resulting in no concerns or findings.

The Department of Grants (DOG) consists of ten professional grant managers and grant administrators whose sole purpose is to support STPG departments by facilitating grant funded projects or programs, ensuring successful program delivery, compliance monitoring, and multi-departmental coordination and providing capacity for all grant awards allocated to the Parish. The DOG is also responsible for ensuring that all grant funded projects and programs are administered efficiently, effectively, timely, and in accordance with all applicable rules and regulations. DOG is supported by several departments within STPG including the Project Management Office (PMO), Departments of Procurement (DOP), Engineering (DOE), Health and Human Services (DHHS), Intergovernmental Relations (IGR), Development and Planning (DDP), and Emergency Preparedness (DEP). Together, these departments work as a team, sharing subject matter experts to design and implement both disaster and non-disaster related projects and programs for the Parish. DOG currently manages over \$33.5 million in FEMA Hazard Mitigation Grant Program (HMGP) funding and over \$55 million in CDBG-DR funding allocated from disasters occurring over the course of the past ten years. The DOG utilizes established policies and procedures to ensure it complies with all applicable rules and regulations, including the STPG Procurement Manual, STPG Finance Policies and Procedures Manual, Grants Procedures Manual, CDBG Sub-recipient Manual, and Monitoring Plan: Ensuring CDBG Compliance. Through its adherence to the aforementioned policies and

procedural manuals, STPG and the DOG are fully confident in their ability to quickly launch major projects in a manner that is compliant with all applicable regulations and timelines.

The Parish has a Department of Procurement (DOP), consisting of a director and staff that successfully provides centralized procurement services for the Parish government departments, offices and agencies to procure equipment, supplies, and services for the Parish.

The DOP's responsibility is to ensure public funds are expended on quality goods and services through a transparent and competitive manner, and in compliance with all applicable laws and regulations. The DOP is committed to making cost effective purchases with every tax dollar and make a positive impact on the Parish through the services it provides.

The primary procurement methods used by St. Tammany Parish Government Procurement Department are: Request for Proposals (RFP's), Request for Qualifications (RFQ's), Request for Bids (RFB's), and Direct Solicitations (Quotes)

The St. Tammany Parish Legal Department, led by the Executive Counsel, serves as chief legal adviser and provides legal representation to the Parish President, Parish Administration and Parish Departments. Major functions provided by the Legal Department include: process and conduct all land acquisitions; review and approve all contracts; receive and process all records requests; review public bid proposals and requests for proposals, respond to bid protests, enforce contracts, and provide legal advice on procurement issues. They are also responsible for the administration of the Code Enforcement Division.

The St. Tammany Parish Code Enforcement Division enforces the ordinances of the Parish with professionalism and courtesy. The Code Enforcement Division is responsible for all

investigations and enforcement actions for St. Tammany Parish's Land Use Regulations, Building Code and Fill Ordinances. Code Enforcement Officers handle each matter from the initial complaint all the way to either compliance with the ordinances, or appropriate legal action through St. Tammany Bureau of Administrative Adjudication, or the 22nd Judicial District Court. Administrative hearings are held twice a month before the assigned Hearing Officer for St. Tammany Parish. St. Tammany Parish Government's website (www.stpgov.org) has a direct link to the Administrative Hearing Dockets. Dockets and case statuses can be viewed by the public at any time. Complaints can be made at any time.

The Department of Finance (DOF) is responsible for the management of all Parish funds, including: revenues from grants, sales and property taxes, fees and licenses. Each fiscal year, the DOF prepares their Annual Operating Capital Budget which is public record. The DOF has received the Excellence in Financial Reporting Award from the Government Finance Officers Association of the United States and Canada for nine consecutive years. In 2013, St. Tammany Parish earned a sewerage and water debt rating upgrade from Standard and Poor's because of several criteria including the Parish system maintaining a strong financial profile. In September of 2015, Standard and Poor's upgraded the Parish's bond ratings, as follows:

The DOG officiates as STPG's central administrative unit responsible for: securing external resources through grants and other funding mechanisms; ensuring fiscal and programmatic accountability of all grant funding; establishing a system of internal control to insure program delivery, regulatory compliance, and inter-departmental coordination for grant funded projects/programs; and serving as the Parish's liaison to funding agencies, auditors, and other external agencies as it relates directly to grant funding.

St. Tammany Parish has sustained damage from multiple disasters over the past ten years, including Hurricanes Katrina and Rita (2005), Gustav and Ike (2008), and Isaac (2012) and has withstood indirect, yet still significant, impacts from the Deepwater Horizon Oil Spill (2010) and the 2011 Pearl River Fish Kill (resulting in massive wildlife and environmental degradation) caused by unauthorized discharges from a Washington Parish paper mill. All of these disasters required immediate response to assess damage and facilitate cleanup and housing opportunities for the community—all of which were handled successfully by the DOG in conjunction with other Parish departments. STPG and the DOG are fully confident in their ability to quickly launch major projects in a manner that is compliant with all applicable regulations and timelines.

As exhibited through the Parish’s multiple finding-free HUD monitoring visits, St. Tammany is highly capable of selecting and designing eligible projects, and tracking program outcomes. STP has extensive experience managing resilient disaster recovery activities similar in scope, scale, and complexity to the ones proposed. Through the St. Tammany Hazard Mitigation Assistance Program the Parish facilitates five major programs: HPMG, SRL, PDA, FMA, and RFC. The qualifications for eligibility is different for each program:

HPMG: These funds are disaster based and are only available under a Presidential declared disaster. Eligibility is competitive and based on cost-effective projects that substantially reduce the risk of future damage, hardship, loss, or suffering from a major disaster. The properties do not have to be located within the disaster area.

FMA: Properties must be NFIP-insured at the time of application submittal. Flood insurance must be maintained. Residential or non-residential properties currently insured with

the NFIP are eligible to receive FMA funds. The projects and/or properties must be in conformance with the Flood Mitigation Plan and must be identified in the plan.

PDM: This program is funded by the federal congressional appropriation. PDM grants are for minor localized flood reduction projects. Eligible properties and costs must be part of the overall flood reduction project or located within the flood reduction project's designated area. Individual properties or project costs cannot be funded through PDA unless part of the overall flood reduction project.

RFC: Residential or Non-residential (commercial) properties that have received one or more NFIP insurance payments are eligible for RFC funds. Properties must be NFIP-insured at the time of application submittal. Flood insurance must be maintained.

SRL: Properties must be identified on the FEMA-validated severe repetitive loss list. An SRL property is a residential property that is covered under an NFIP flood insurance policy. In addition, it must have had four or more NFIP claim payments with building damages of \$5,000 or greater or two separate claim payments for building damage only, with in a 10 year span, that has exceeded the market value of the building.

St. Tammany Parish Government is responsible to coordinate with FEMA, GOHSEP and the property owner to ensure that the project is implemented in compliance with CFR44 Sections 79 and 80. Roles and responsibilities include but are not limited to the following:

- Prepare and submit a FEMA-approved Local Mitigation Plan;
- Complete and submit all applications for proposed projects in accordance with the respective program schedule and pragmatic requirements, and including all of the requisite information to enable FEMA to determine eligibility, technical feasibility, cost

effectiveness, and historical preservation compliance.

- Implement all approved applications notifying each holder of a recorded interest in severe repetitive loss properties when an offer of mitigation assistance has been made under the specified program and when it has been refused;
- Comply with all program requirements and grant management requirements as identified under CFR part 13, the grant agreement articles, and other applicable Federal, State, tribal and local laws and regulations.
- Ensuring that applications are not framed to circumvent CFR44 Sections 79 and 80.
- Coordinating with property owners to ensure they understand the benefits and responsibilities of participating in the project, including that participation is voluntary.
- Developing the application and implementing property acquisition activities in compliance with CFR 44 Section 79 and 80; and ensuring that all terms of deed restrictions and grant award are enforced.
- Ensuring fair procedures and processes are in place to compensate property owners and tenants affected the purchase of the property; such as determining property values and/or the amount of the mitigation offer, and reviewing property owner disputes regarding such offers
- For an acquisition, making no application for Federal disaster assistance, flood insurance, or other FEMA benefits for the property or any open space related improvements , after the property interest transfers; taking and retaining full property interest; submitting to FEMA and GOHSEP the proposed uses on the property; and monitoring and reporting on property compliance after the grant is awarded

In addition, STP is in the process of managing an Isaac allocation of \$10,914,916.00. After assessing Parish needs in conjunction with current projects and other grant and funding resources that are currently available to the Parish, STPG decided to utilize CDBG-DR funds on three primary projects:

Housing- Family Promise Faith-Based Sheltering Program for Homeless Families:

Prior to Hurricane Isaac, a gap existed in emergency sheltering services in St. Tammany Parish. The gap in emergency and temporary sheltering for families became more evident after Hurricane Isaac.

In the event of a disaster, the Parish as part of its Emergency Operations Plan will open up emergency disaster shelters for individuals and families who are unable to safely evacuate. These shelters are operated by the American Red Cross and are usually opened at local public schools or churches. After the disaster, the shelters remain open for a limited amount of time until all shelter residents can be moved to a safe location. In the event the shelter occupants are unable to return home for a significant amount of time, several local churches will allow these individuals and families to remain housed at their facilities temporarily. Once they are unable to reside at the church any longer, they may be forced to either a homeless emergency or a transitional shelter until permanent housing becomes available.

However, there are currently no emergency or transitional housing shelters for *families* in St. Tammany Parish. There is specifically an issue with males over the age of 15 and under the age of 18; there is no shelter option available for this specific population. Because of shelter admissions criteria, families often end up being split up with a mother and a daughter in one facility, the father in another, and there is no place for a son if he is over 15 but under the age of 18. If a family chooses to stay together without shelter instead of being split apart, they may opt to

live out of their car, in a tent at a park, or seek motel vouchers from local providers for limited amounts of time. After Isaac, there was more than one church in the area that had evacuees living in their respective facilities for an extended amount of time. Being the sole shelter provider for homeless persons for an extended period of time can unfortunately put a strain on a church's resources, staff, and volunteers.

Family Promise is a faith-based congregational collaborative that is able to address the sheltering need for homeless families with children. The mission and purpose of the Family Promise program is to help homeless and low-income families achieve sustainable independence. There are 182 independent Family Promise affiliates in 41 states. Over the past 20 years this interfaith network of 6000 congregations has served over 500,000 people. The faith-based network provides for homeless families by hosting them in their church facilities 3-4 times per year and providing lodging, meals and support services for one week at a time. All families must pass the initial screening that consists of background checks, drug testing, and a face-to-face interview.

It is anticipated that 4 to 5 families will be served through the Family Promise Program at any given time during the year. The participating churches will expect to house anywhere from 16 – 20 people for one week at a time. The estimated average length of program participation for each family will be about 60 days. This means that roughly 24 families will be served through this program in a 12 month period. Transportation services will be provided through this program for the adults and children so that they may get to and from work and school without any disruption regardless of the location of their weekly host church.

CDBG-DR funds will be used to rehabilitate a facility that will function as the Family Promise Program's day center. The day center will be accessible to all program participants and

will host the program's staff offices as well. At the day center, the families will have access to counseling, job-search assistance, showers and a kitchen as well as educational, supportive and social services.

Infrastructure- Infrastructure Improvements for the new campus of Northshore

Technical Community College: By providing infrastructure improvements to the Parish-owned property on Highway 434 in Lacombe north of I-12 (which has been dedicated as the site for the Parish's Northshore Center for Innovation and Learning ("NCIL"), the NTCC will be able to construct a new facility and begin operating and providing educational and workforce training services to St. Tammany Parish and surrounding communities. This will address the impact of Hurricane Isaac by providing for training of predominantly low to moderate income individuals who have been impacted by the storm.

Northshore Technical Community College's ("NTCC") original campus was located in Slidell and home to several programs including but not limited to horticulture, culinary, nursing, welding, drafting, and computer technology. The Slidell facilities and all of their contents were destroyed during Hurricane Katrina in 2005. FEMA awarded the institution with \$4.7 million dollars to replace the destroyed contents of the buildings; however, the facilities have yet to reopen. Post Katrina, NTCC's Slidell campus has been operating out of a smaller, temporary facility. The temporary facility was flooded in Hurricane Isaac and the original NTCC Slidell facilities also flooded again. Thus, NTCC and FEMA have deemed the original Slidell facility unfit for rebuilding and NTCC continues to operate out of an inadequate temporary facility.

The loss of the original Slidell facility included a loss of 75,000 square feet of training space. In the interim, the college has only been able to lease a high-cost training location that consists of 5,700 square feet. According to NTCC's Chancellor, William Wainwright, "The

inadequacy of this facility has been realized as growth is limited and training labs are not designed to fit training demand.” He also states that, “It is important to note that inadequate workforce facilities have led to underserved student populations and limited access for workforce training tied to relevant jobs associated with rebuild needed to be filled in St. Tammany Parish.”

The mission of Northshore Technical College is workforce development. As listed on NTCC’s website, its purpose is to “train, retrain, cross-train, and continually upgrade the state’s workforce to the end that individuals are employable at both entry and advanced levels.” Due to repeated storm damage, NTCC has been unable to function at its pre-Katrina capacity and meet the workforce demands of the region. Its original campus cannot be rebuilt due to flooding concerns. NTCC has trained over 1,000 residents in construction via rapid response curriculum in a partnership with the Home Builders Institute. For example, immediately after the BP oil spill, NTCC provided rapid response training for local residents in a rented facility in Slidell for over 750 residents for employment in the oil spill recovery effort. However, if it had access to a larger, permanent facility during these emergencies, training capacity would have been significantly increased and more individuals in need of employment could have been assisted. An increase in the number of individuals who receive construction and rapid response training allows for a speedier recovery Parish-wide and regionally.

St. Tammany Parish has experienced rapid growth in population in the last ten years despite natural disasters and the effects thereof. Local leaders recognized the need to educate this growing population and in 2009 obtained property by donation of approximately 41 acres of undeveloped land located on Highway 434, north of Interstate 12, in Lacombe for the purpose of establishing a multi-purpose campus to provide post-secondary educational opportunities for Northshore residents (this property has been dedicated as the space of the Parish’s new Center

for Innovation and Learning). NCIL has been selected by NTCC, and approved by FEMA and the State, for the relocation of its much needed campus. The Parish proposes to utilize Isaac CDBG-DR funding to provide needed infrastructure for NTCC and other future educational facilities at the Highway 434 site.

By providing infrastructure improvements to Parish-owned property on Highway 434 in Lacombe north of I-12, the NTCC will be able to then finally construct their new facility and begin operating and providing educational and workforce training services to St. Tammany Parish and surrounding communities.

The infrastructure project consists of installing a drainage ditch along the eastern border of the property to drain the developed parcels south to the main drainage channel. The location of the ditch will be cleared of vegetation, excavated and graded to drain to the main drainage channel. The ditch slopes will be seeded to prevent erosion. Also, a new 5 barrel concrete reinforced box culvert will be constructed under Highway 434 to facilitate the run off in the main channel to the detention pond. To do this a temporary detour road will be constructed to maintain traffic. A section of LA 434 will be removed and excavated down to the invert of the box culverts. The box culverts will be constructed, backfilled with embankment, and the asphalt road replaced. The detour road will be removed and traffic diverted back to Highway 434. All disturbed areas will be hydro seeded for erosion control.

A new two lane asphalt road will be constructed to provide access to the site of the new NTCC. The work will consist of clearing the right of way, bringing in embankment to elevate the road section, installing a base of soil cement and asphalt paving. During construction of the college, a temporary construction entrance will be constructed. The path will be cleared, embankment placed and a gravel riding surface placed for construction traffic.

This infrastructure project meets the National Objective of benefiting low to moderate income individuals. NTCC's Chancellor states that, "As reported on the U.S. Department of Education's Integrated Postsecondary Education Data System Spring 2013 Student Financial Aid Report, for academic year 2011 – 2012, 83% of NTCC's first-time full-time students received Pell Grant Aid. Data represents a high percentage of enrollment of low to moderate income students." After the improvements are completed and the NTCC begins operations at its new site, students will self-certify their household income status in order to prove LMI benefit.

ii. Technical Capacity

St. Tammany Parish departments have established significant depth in expertise and capacity through private and public partnerships. STPG's NDRC partners through their collective experience will serve to augment the Parish's internal and external capacity through specialized technical expertise.

St. Tammany Parish Department of Engineering (DOE) is responsible for technical review and monitoring of residential and commercial developments, which must meet a set of standards that have been adopted by STPG, ensuring public interest and safety. DOE staff includes professional construction, drainage, and traffic engineers; professional land surveyors and survey crews; environmental specialists; drainage and construction inspectors; and land abstractors.

Working in collaboration with the DOE, the Duplantis Design Group (DDG) is a multi-disciplinary regional firm offering professional civil engineering, architecture, and landscape architecture design services. DOE and STPG ensure DGG is educated as to the landscape of needs within the Parish and as a result DDG supports STPG in the development of storm

drainage systems, urban infrastructure, and sustainable design guidelines that can respond to and accommodate anticipated growth scenarios and flood protection issues presented by climate change and land loss factors. DDG has provided program management on the Parish's storm water regional detention program projects initiated in 2009 (funded by OCD-DR) and drafted guidance to support STPG's coastal initiatives. Further, DDG was integral to the completion of the Parish's January 2015 Coastal Protection and Restoration (CPRA) Parish wide Watershed Study addressing stormwater management and water quality.

Design Workshop (DW) considers plans proposed by DOE and DGG and provides landscape architecture, planning, urban design and strategic services with an emphasis on sustainability. DW supports STPG in the development of sustainable infrastructure systems and urban design guidelines that can respond to and accommodate anticipated growth scenarios and flood protection issues presented by climate change and land loss factors. DW completed a Parish wide Environmental Corridor Study in 2015, paid for with disaster recovery funding, which, solicited input from residents and stakeholders, surveyed and researched all Parish recreational properties, disaster mitigated properties, wetlands and greenspace. DW has provided a plan for enhancement, maintenance and preservation of these properties which is integral to the Parish's resilience program.

No project is complete without leverage and financing, thus The Northshore Community Foundation (NCF) unites human and financial resources to enhance the quality of life in the Northshore region. Its projects vary in scope from land-use planning providing daily necessities to local residents in need. The Foundation engages community leaders to develop appropriate responses to emerging opportunities and challenges, specifically targeting vulnerable

populations, and supports STPG with housing development expertise and philanthropic initiatives. Currently, the Foundation is engaged in a visioning process which will serve as the backbone for managed growth, economic diversity, and enhanced resilience in St. Tammany and the Northshore region.

St. Tammany Levee, Drainage and Conservation District Board (STLDCD), made up of gubernatorial appointees from various communities throughout the Parish, has the primary duty to establish, construct, operate, and maintain flood control works related to hurricane protection, tidewater flooding, saltwater intrusion, drainage and conservation. It is a political subdivision of the State and has taxing authority. The STLDCD Board acts in an advisory capacity for STPG and will assist in leveraging STPG projects within the scope of its by-laws.

STPG has vast experience in multi-disciplinary projects. STPG, in partnership with the Trust for Public Land, created St. Tammany Greenprint (“Greenprint”). Greenprint identifies the areas of the Parish that are the most ecologically and environmentally sensitive and valuable and recommends areas to be preserved for protection from floods and other natural disasters. The Greenprint defines areas along riparian corridors and adjacent wetlands that will provide eco-corridors (for animal habitat and passage), resident access, and water quality polishing of runoff before it reaches ambient waterbodies. The St. Tammany New Directions 2025 Plan (ND 2025) sets forth the foundation for a comprehensive development plan that promotes environmentally conscious recreational projects and smart growth development, as well as public access to scenic streams and rivers.

STPG’s Environmental Corridor Study focuses on: 1) creating a unified vision for the future of the Parish; 2) protecting and enhancing natural and cultural resources; 3) providing

recommendations for a physically connected open space network; and 4) providing financial sustainability for new open space. The study involved the coordination of experts in the fields of urban planning and design, stakeholder engagement, economic development, GIS analysis, operations and management, and ecology to evaluate how to better manage natural resources and provide a framework for smart growth planning.

In addition, as part of its recovery from Hurricane Isaac in 2012, the Parish is working with multiple partners on the design and construction of the St. Tammany Advanced Campus (STAC) project. Leveraging both FEMA and HUD funding and partnerships with various federal, state, local, and private entities, the STAC project involves the coordination of multiple disciplines, including education, environmental, engineering, design, and construction. The campus will be the home for the Northshore Technical and Community College (NTCC) which provides post-secondary educational opportunities in an industry driven job training. Also at STAC, the Parish is set to begin construction in 2017 on a Regional Multi-Use Facility and Safe Room. This facility will be a center for training and coordination of all aspects of disaster response and recovery.

The Parish has a proven track record of launching and implementing major projects, as evidenced by its many successes resulting from recovery efforts following the multiple disasters over the past ten years. Other multi-disciplinary projects include: Covington Fairgrounds renovation and expansion (economic revitalization and emergency preparedness), Camp Salmen and Tammany Trace Connections (environmental conservation, alternate transportation, and cultural diversity), the St. Tammany Levee System Alignment (coastal restoration and flood protection), and the Cane Bayou Mitigation Bank (restoration and conservation).

STPG actively participates in several internal and external multi-disciplinary platforms that provide a mechanism for data sharing and coordination on a regional scale. These platforms include: the National Association of Counties, Police Jury Association of Louisiana, University of New Orleans Institute for Economic Development and Real Estate Research, Capital Resource Conservation and Development Council, Florida Parishes Human Services Authority, Tourist and Convention Commission, Center for Planning Excellence, Coalition for Sustainable Flood Insurance, Southeast Super Region Symposium, Pearl River Commission, and LaPACE (Parishes Against Coastal Erosion). The Parish also has leadership roles in the CPRA 2017 Coastal Master Plan Foundation Development Team, the NFIP Community Rating Systems Users Group, LA Urban Stormwater Coalition, Lower Pearl River Basin Ecosystem Study Commission, Greater New Orleans Clean Air Coalition, and LA Local Coastal Program. STPG and its partners' previous successes demonstrate their ability to develop a plan to collect, share, and assess scientific data working across disciplines to achieve specific STPG will work closely with its partners and local municipalities to develop projects that strike a balance between environmental sensitivity, community connection, artistic beauty, and economic viability. These partnerships will deliver a level of analysis that provides the basis for design concepts and innovative ideas enhancing regional resilience.

iii. Community Engagement and Inclusiveness

STPG's active participation within the multi-disciplinary platforms mentioned previously enable the Parish to account for and address regional issues that have direct impacts on St. Tammany. A prime example is the Parish's collaboration with CPRA, Coastal Wetlands Planning, Protection, and Restoration Act (CWPPRA) lead agencies, and FEMA Levee Analysis

and Mapping Approach (LAMP). STPG coordinates with its regional partners to identify areas with the greatest need and prioritizes proposed projects accordingly. This structure allows STPG to engage with other jurisdictions facing similar coastal challenges and determine how best to develop effective solutions that provide the greatest regional benefits. The Parish has also been an integral player in regional meetings connecting the three Louisiana NDRC applicants, including the State of Louisiana, the City of New Orleans and Jefferson Parish by hosting shared working sessions and contributing to coordination of regional goals and metrics.

STPG understands that its long-term success, safety, and prosperity are regionally dependent. Historically, the Parish's experiences with each disruptive event and with coastal land loss have made it clear that changes in any one part of the region affect the other parts. Furthermore, STPG recognizes that economies are inextricably linked with community patterns and business activities that illustrate movement between communities and evidence of a cohesive economic region. Due to the flat topography and the intertwined nature of habitats and economies alike, a diminished coastal community at the edge of the Gulf of Mexico means that a community further inland is also at greater risk, and the reverse is true as well. Decisions that may benefit a single community may actually be detrimental to another community. With respect to the cost effectiveness of regional solutions, STPG and its regional partners recognize that the projects proposed to address regional challenges – coastal restoration in particular – are typically cost prohibitive due to the size and scope of the projects. As such, a phased, yet regionally agreed upon approach, is viewed as the most cost effective option. The Parish works with its partners to identify and prioritize individual projects that produce benefits across the region.

In recognition of the interconnectivity among the NDRC-eligible applicants in Louisiana and their common challenges, STPG participated in multiple discussions with Orleans Parish,

Jefferson Parish, and the State of Louisiana to determine how each applicant's respective project approaches can be coordinated to address regional issues. The conversations generated a narrative relative to the migration of the State's residents from vulnerable lower-lying communities to areas further inland. St. Tammany, based on its location further inland from the Gulf of Mexico, is projected to become the recipient of many temporary evacuees and migrants during and after Gulf storm events. The Parish experienced an influx of residents following Hurricane Katrina in 2005 and subsequent storms (Hurricanes Gustav, Ike, and Isaac) have amplified the migration. Assuming no significant storm over the next five years, the Parish population is forecasted to increase by approximately 25,000 residents (10% of 2010 census figures). The Parish's project approach is intended to address the impacts of past migrations and prepare the Parish for the migratory effects of future disasters. In St. Tammany, preparing for population growth involves the development of resilient infrastructure and a diverse housing stock, planning for economic growth along the I-12 corridor, and addressing stormwater management and water quality issues. By addressing the aforementioned initiatives, STPG will create opportunities for all individuals that move to the Parish.

St. Tammany makes a point to facilitate outreach efforts in the communities that will be impacted by proposed projects and targets not only organizations that represent those communities but the people themselves. Through the combined efforts of STPG departments and its NDRC partners, the Parish is able to ensure that engagement efforts are educational (with respect to the impacts of climate change as well as other risks and vulnerabilities), informative (with respect to the community and stakeholders providing their feedback on the Parish's project approach), and all-inclusive (with respect to the meaningful involvement of all Parish residents, particularly those most vulnerable when disasters strike).

The Parish has promoted transparency during all NDRC outreach and engagement efforts with respect to its project approach as well as its target areas and priority initiatives in order to solicit meaningful and relevant feedback from those involved in the meetings and discussions. The input received was used to shape the direction of the application, expand thinking related to unmet needs, risks, and vulnerabilities, and broaden the Parish's perspective regarding how residents and stakeholders perceive resilience.

STPG is committed to ongoing engagement with citizens and stakeholders throughout the duration of the NDRC process and beyond. The approach, ideas, and concepts set forth in this application are in line with the Parish's overall goals related to disaster recovery and increasing resilience. As such, maintaining a robust level of engagement on topics germane to this application process is a part of STPG's standard operating procedures.

Engaging community leaders has been a priority in the Parish's design and implementation of past projects and the recovery from Hurricane Isaac has been no exception. As an example, due to the multi-faceted use of the location of the aforementioned STAC project, the Parish has brought together community leaders in education, emergency response, and housing development, among others, through regular and frequent coordination meetings. This collaborative effort helped the Parish understand how best to utilize available funding in order to accomplish a broad-based set of objectives. During the 2015 update to the Parish's Natural Hazards Mitigation Plan, STPG collaborated with local municipal leaders to identify the greatest risks and vulnerabilities and prioritize projects for potential post-disaster funding. In addition, the Parish's Transit Task Force was developed to assess the state of the current transit system and determine how best to expand transportation options throughout the Parish, particularly to

accommodate the special needs population. The Transit Task Force is comprised of community stakeholders, elected officials, subject matter experts, and other key community leaders.

As has been described previously, the Parish and its NDRC partners bring to bear significant experience and current capacity with respect to organizing diverse stakeholders and their contributions in order to develop a cohesive narrative for the Parish's project approach, ideas, and concepts. The Parish's NDRC public meeting offers a recent example as those in attendance represented different areas of interest and came to the meeting with different priorities. By providing a forum at which a collection of thoughts and ideas could be distilled, the attendees were able to focus their comments and questions to address the key objectives of the NDRC.

II. MANAGEMENT STRUCTURE

i. Description

St. Tammany Parish Government (STPG) has the ability, experience, and cross-disciplinary technical capacity to plan, implement and manage the proposed National Disaster Resilience Competition (NDRC) activities. STPG's Department of Grants (DOG) will serve as the lead agency in the planning, implementation, and management of activities proposed within the NDRC. DOG manages a portfolio of over \$100 million in grant funded projects/programs. The DOG consists of ten professional grant managers and grant administrators whose sole purpose is to support STPG departments by facilitating grant funded projects or programs, ensuring successful program delivery, compliance monitoring, multi-departmental coordination, and providing capacity for all grant awards allocated to the Parish. The director has ample years of both financial management and grants management experience.

ii. References

Address: Pat Forbes, Director, State Office of Community Development Disaster Recovery Unit

LaSalle Building 17 N. 3rd Street, 6th Floor Baton Rouge, LA 70802, Phone: (225) 219-9600

Email: Pat.Forbes@la.gov

Address: Jeffrey Giering, GOHSEP, LA Office of Homeland Security and Emergency

Preparedness, 1500 North Main Street, Baton Rouge, LA 70802, Phone: (225) 925-7500

Email: jeffrey.giering@la.gov

Exhibit D: Factor 2 – Need/Extent of the Problem

I. UNMET RECOVERY NEED AND TARGET GEOGRAPHY

i. Identify Specific Target Geography

Hurricane Isaac made landfall on the Gulf Coast of Louisiana and remained over Southeast Louisiana for three days. The slow moving storm led to widespread damages to housing, businesses, and infrastructure and exacerbated environmental degradation in areas throughout the Parish, specifically in the Slidell area due to a weakened Fritchie Marsh. Despite significant recovery efforts, the Parish has remaining unmet recovery needs related to Hurricane Isaac, including homeowners lacking funds to repair or rebuild, unfunded infrastructure projects, and persistent issues due to coastal land loss and environmental degradation. The storm further exacerbated damages to the Parish from previous disasters in the region, including Hurricanes Katrina and Rita in 2005, Hurricanes Gustav and Ike in 2008, and the Deepwater Horizon Oil Spill in 2010.

Despite the setbacks presented by Hurricane Isaac, the Parish continues to experience rapid growth, with an influx of residents and businesses from coastal and flood-prone areas of Southeast Louisiana. To create a more resilient community, STPG must address the current unmet recovery needs as well as proactively plan for additional population shifts from neighboring Parishes due to sea level rise and coastal land loss. As a resilient community, St. Tammany Parish will be well prepared to receive the influx of residents by addressing water quality, flood protection, and economic development and planning for smart growth.

The most damaging effect of Hurricane Isaac was coastal land loss. The Parish lost approximately 273 acres of land due to the amount of rainfall and slow moving nature of the storm. Furthermore, Hurricane Isaac caused increased riverine levels, blockages in drainage canals, and severe flooding to residential and commercial properties Parish-wide. STPG received federal funds following Hurricane Isaac to repair direct damage to public facilities, elevate residential properties, begin a localized marsh creation project, and fund small-scale economic revitalization projects. This funding provided a foundation for STPG's strategic resilience plan. STPG's four pronged approach to resilience focuses on water quality, flood protection, coastal restoration, and economic diversity, while considering the broader effects of climate change and sea level rise. As stated in the Environmental Corridor Study prepared by STPG partner Design Workshop, "As more people choose to come to the Parish to work, live, and play, a balance must be struck between encouraging the development of roads, homes, and businesses that allow commerce to thrive and preserving the natural environment." The ultimate goal is to design resilient projects that reinvest in the natural assets of St. Tammany and create an environment that promotes innovative economic development while embracing the cultural diversity and a unique quality of life in the Parish.

As part of its recovery from repetitive disasters over the past decade, STPG has invested significant local and disaster recovery dollars to identify our most impacted and distressed areas. Collectively, these efforts not only identified the focus areas, but provided the road map toward recovery and sustainability. NDRC is the platform that will allow STPG to consolidate planning efforts to prepare for the ordinary and extraordinary events moving forward.

Hurricane Isaac in particular presented Parish-wide damage due to heavy rains and strong winds, directly affecting lower lying coastal areas, drainage canals, and the most vulnerable communities outside of flood protection, specifically, Slidell, Madisonville, Mandeville, and Lacombe. Due to climate change and sea level rise, these most vulnerable areas will become more susceptible to these risks unless STPG is able to implement protective resilience measures.

Focus has been placed on Slidell due to the fact that it acts as a buffer to both the Lake and the coast, placing it at one of the most vulnerable locations while also creating an opportunity to model projects that can act as first and second lines of defense for the Parish. Slidell is also an excellent case study in the effects of erosion and, in turn, what projects can be put in place to slow erosion and maintain high, strong, land mass.

The Parish has worked with DDG to better understand the real impacts of erosion on the coast and how the restoration of Fritchie Marsh will provide protection from strong winds and storm surges of extreme weather events. It is estimated that every 2.7 miles of wetlands and marshes reduce a storm surge by one foot. As erosion continues, and these ecosystems turn to open water, their ability to impact approaching storm surges decreases and the risk of catastrophic loss of life and property from hurricanes is greatly increased. Data from past hurricanes indicates that the loss of every one-mile strip of wetlands along the coast, results in an

estimated \$5,752,816 average annual increase in property damage. Fritchie Marsh also acts as a sponge, soaking up and storing extra stormwater runoff, however, it can't handle everything and flooding still occurs. Thus, improving the W-14 drainage canal and the addition of six integrated detentions ponds throughout Slidell will work in tandem with the marsh restoration to increase the capacity of flood water retention and allow for storm water to be slowly released back in to the water table without putting the community at risk.

Increased safety is directly linked to improved mental health and, with the goal of impacting the mind and body of all residents, St. Tammany is committing to expanding the Tammany Trace from Northshore Boulevard via Camp Salmen to Fremaux Town Centre. This added route will provide connectivity to two new parks, Ben Thomas and Hiawatha Park, providing recreational opportunities and access to jobs and amenities along the route.

ii. Narrative Description of Needs

Housing - The Federal Emergency Management Agency (FEMA) conducted an assessment of homes damaged during Hurricane Isaac in 2012. The assessment revealed 3,812 owner occupied households with damage, and 1,472 renter households with damage within St. Tammany Parish (STPG 2013 Action Plan). According to the National Flood Insurance Program (NFIP), there are 1,358 insured properties that filed flood claims for Hurricane Isaac. St. Tammany Parish Government (STPG) did not allocate Hurricane Isaac CDBG-DR funding for a recovery housing program. STPG has utilized over \$30 million from both the Hazard Mitigation Grant Program (HMGP) and Flood Mitigation Assistance (FMA) toward eliminating or drastically reducing future flood claims to residences throughout the Parish. Furthermore, FEMA

approved \$6,734,674 in housing assistance to renters, and \$8,708,405 to homeowners for Hurricane Isaac.

Despite significant Federal and private investment in repairing homes damaged by Hurricane Isaac, there is a desperate need to provide long term increased security to the homes within the community. As the Parish's first line of natural defense against storms, as long as Fritchie Marsh remains weak and unrestored all homes within the Slidell area, no matter their level of repair or elevation since previous disasters, remain vulnerable. Furthermore, inadequate conveyance within critical drainage systems such as the W-14 and W-15 leave homes at persistent risk of flooding.

Infrastructure - Public infrastructure damage caused by Hurricane Isaac included water control facilities, roads, bridges, and levees. STPG has made significant progress in addressing damage caused by Hurricane Isaac and previous federally declared disasters. As of 2013, the Parish had 29 infrastructure projects underway using Isaac and pre-Isaac CDBG-DR funds, 125 projects in planning stages, and 36 completed infrastructure projects (including drainage, levee repairs, roads, water and sewer repair, and conservation). Despite this progress, the Parish still faces unmet infrastructure recovery needs caused by Hurricane Isaac. The Parish sustained damage to the Drainage District No. 2 Lakefront Pump Station and Levee Segments 1 and 3B in Slidell. The project costs for replacing these two critical pieces of infrastructure are \$520,000 for the Lakefront Pump Station and \$67,019 for Levee Segments 1 and 3B, for a total of \$587,019. Total replacement costs exceed the amount of funding available. To date, \$22,678 in FEMA Public Assistance has been allocated to Slidell Levee Segments 1 and 3B. A total of \$163,875 in FEMA Public Assistance has been allocated to Drainage District No. 2's Lakefront Pump

Station. Therefore, the total unmet infrastructure need for both Lakefront Pump Station and Levee Segments 1 and 3B is \$400,466.46.

Economic Revitalization - The economic impact from Hurricane Isaac consisted of flood and structural damage to businesses, loss of inventory, and business interruption (i.e. revenue loss) due to road closures and power outages. Since the Parish relies on sales tax revenue for operations and capital projects, the economic damage caused by Hurricane Isaac impacted the Parish's ability to recover and rebuild. Parish staff surveyed small businesses in the most heavily impacted areas (i.e. the cities of Slidell and Mandeville and the Town of Madisonville). A total of 52 business owners were contacted to discuss remaining repair and mitigation needs, as well as continued loss of revenue as a result of Hurricane Isaac. Five of the fifty-two business owners have certified that remaining damages and/or mitigation needs are a result of Hurricane Isaac and they have inadequate resources to complete the needed repairs or mitigation measures. Based on the surveys, local businesses received funding from various sources, both private and public, including insurance companies. The total amount of funding received by area businesses in total is still being determined; however, based on discussions with business owners, the Parish has confirmed that there are remaining recovery and mitigation needs.

Environmental Degradation - At approximately 850 square miles, St. Tammany Parish is one of the largest parishes in Louisiana. More than half of the land in St. Tammany is designated as wetlands, with three rivers and several more substantial bayous located in a watershed that drains 65% of the Parish into Lake Pontchartrain and the remaining 35% into the Pearl River watershed along the Mississippi State border. The geography and topography of St. Tammany dictates the need for smart and strategic planning for the vast growth and development

currently experienced by the Parish. St. Tammany Parish is vulnerable to natural disasters due to increasing loss of coastline and marshland. As a result of its location along Lake Pontchartrain and proximate to the Gulf of Mexico, repetitive events have impacted St. Tammany Parish. The sustained damage from Hurricane Isaac exacerbated loss to wetlands, land, and environmental protections from previous storms. The environmental damage from Hurricane Isaac has not fully been addressed and it will take significant resources to fully recover and create additional resilience for St. Tammany Parish.

One area that sustained major impacts is the Fritchie Marsh, an area of intermediate to brackish marsh near the City of Slidell. The marsh is approximately 6,291 acres in size and bounded on the east by Highway 90, on the south and west by Highway 433 and on the north by portions of the W-14 canal, as well as developed and undeveloped land below Slidell. For an approaching storm, Fritchie Marsh is the final land mass before reaching the residents of Slidell. The marsh is comprised of US Fish and Wildlife Service property as well as privately owned land. Both the W-14 and W-15 canals, as well as part of the Pearl River via Salt Bayou, outfall into the Fritchie Marsh. The Fritchie Marsh provides many environmental and storm protection benefits for lower St. Tammany Parish, and as such, the Parish believes protecting this area is of vital importance. According to an analysis prepared by GCR Inc., Fritchie Marsh lost approximately 273 acres of land from 2010 to 2012, largely due to Hurricane Isaac.

The Parish is currently working on a project aimed at reducing the marsh loss rates by improving the hydrologic conditions in the area through management of available freshwater and building new marsh with material removed from conveyance channels. The total cost for the current Fritchie Marsh restoration project is \$5,041,000. The Parish has applied for FEMA funding to cover 75% of the cost (or \$3,780,750). In addition, the Parish has received \$400,000

from the State Coastal Protection and Restoration Authority (CPRA). St. Tammany does not have funding to cover the remaining \$860,250.

II. RESILIENCE NEEDS WITHIN RECOVERY NEEDS

i. Quantify impacts of disaster (actual and w/proposed project)

STPG has invested approximately \$100 million in disaster recovery towards drainage, sewerage and water, and economic revitalization projects. Additionally, the Parish's public health millage has been utilized since 2012 to fund suicide prevention programs and behavioral health efforts. STPG has elevated over 300 residences, qualifying either by the direct effects from a disaster and/or from repetitive flood claims. STPG has also invested millions of dollars and significant staff time in comprehensive planning, which has culminated in defining the resilience approach. The exacerbation over multiple presidentially-declared disasters and the limits on federal, state, and local resources has left STPG with unmet recovery needs. In addition to rebuilding and comprehensive planning efforts, STPG has also invested in project concepts that include alternate transportation, cultural arts, education and connectivity of the Parish's vast green areas and water bodies. The diversification of the project concepts, coupled with comprehensive planning, provides for a sound approach to resilience.

Addressing water quality, flood protection, coastal restoration, and economic diversity will protect vulnerable residents and businesses from future flooding and other disaster related damages. Furthermore, addressing these specific risks and vulnerabilities directly improves Parish infrastructure and environmental quality and prepares St. Tammany for future growth. Coastal restoration, watershed management, behavioral health programming and diversifying

STPG's tax base will provide a holistic approach to preemptive disaster planning. This approach will allow the community not only to recover fully from disasters by utilizing a forward looking plan to prepare for the unknown. Addressing these risks and vulnerabilities will also provide a framework for St. Tammany to be the premier community along the I-12 corridor, with a strong economy promoting innovative development while investing in natural resources and cultural diversity to preserve the quality of life. Impacts from the identified risks and vulnerabilities are important not only to St. Tammany Parish but also to the State and region, specifically as they relate to climate change and sea level rise. As sea level rises and the effects of climate change come to bear, the Parish is primed to receive future population migration.

ii. Estimate general amount of needed investment in resilience

In order to achieve comprehensive Parish wide resilience, the essence of the Resilient St. Tammany approach must be stamped throughout each drainage basin in the Parish. There are 6 drainage basins, including Slidell, that intersect the main communities in the Parish, all of which are linked by the St. Tammany Trace. These communities are: Covington, Madisonville, Abita Springs, Mandeville, and Lacombe. Applying similar drainage updates, environmental restorations and recreational enhancements to each node would total \$90,713,718.

iii. Describe vulnerable populations and quantify disaster impacts

The risk of flooding disproportionately affects LMI residents of St. Tammany Parish and more specifically within the City of Slidell. These populations also suffer from advanced health risks due to lack of access to healthcare, exercise and healthy foods. By increasing safety as it

relates to flood risks and improving connectivity between the LMI neighborhoods and the needed resources throughout the Slidell area, St. Tammany aims to aid their LMI populations in becoming more resilient.

iv. Describe factors that enhance or inhibit resilience

Existing Conditions that Inhibit Resilience –

Given St. Tammany's high elevation and low subsidence rates, it is a prime target for displaced populations during and after disasters. This trend over the last decade has left the Parish struggling to keep up with the demands of an ever increasing population and subsequent strains placed on infrastructure and the environment. The effects of the accelerated growth over the last decade have brought to light the need to be forward looking with regards to development and system upgrades, however the Parish lacks dedicated funds to address these needs, thus inhibiting a move towards a more resilient and prepared Parish. Even if people do not choose to stay within STP during a disaster Slidell is repeatedly burdened by its location at the southwest corner of the intersection of Interstate 10, Interstate 12, Interstate 59, and U.S. Highway 11 creating an evacuation corridor and overwhelming infrastructure. The Parish also faces the challenge of a generally apathetic public— Currently, STP boasts the highest average housing costs in the area and the best public schools in Louisiana, leaving many citizens with the illusion that there is no need to participate in the public process. In response, Resilient St. Tammany aims to educate the public as to the future risks the Parish inevitably will face if the status-quo is maintained.

Existing Conditions that Enhance Resilience

Hazard Mitigation Plan

One of the many efforts to cultivate a more engaged public has been the development of the hazard mitigation plan was developed under the guidance of a Hazard Mitigation Planning Committee. The Committee's members include representatives of Parish offices, interested municipalities, and public and private stakeholder organization. The plan is well coordinated amongst Parish departments and comprehensively depicts the needs of the Parish.

Behavioral Health Taskforce

The St. Tammany BHTF membership is diverse and representative of the community in which it serves. Members include: five acute care hospitals with emergency departments, two inpatient psychiatric facilities, St. Tammany Parish Coroner's Office (in Louisiana, the Coroner's Office is responsible for overseeing all involuntary psychiatric holds), St. Tammany Department of Health and Human Services, regional Human Services District (state behavioral health center serving Medicaid and uninsured), parish school board (K-12), parish jail, fire departments, ambulance EMS/first responders, crisis response team, law enforcement, justice system (including a Behavioral Health Court), outpatient behavioral health providers (private and not for profit), faith- based organizations, Federally Qualified Health Center community health clinic (primary care and behavioral health medical home model), 211 phone line for information and referrals, as well as a crisis hotline, advocacy, education, and social services agencies. These collaborators cover all areas of social services and work to reduce the negative impact of social determinants of health, such as housing, education, employment, health services, criminal justice, and poverty.

The St. Tammany Behavioral Health dashboard was launched by the BHTF in 2014. The dashboard is a web-based data visualization tool that tracks BH system indicators on a monthly basis. The BHTF partners initially identified simple indicators to provide data to evaluate outcomes and measure numbers of individuals seen at each level of the system. This dashboard has already provided the BH community with a snapshot of current assets and gaps and has identified some duplicative services. The BHTF is proposing development of an augmented system that will increase the number of dashboard data participants to 20 and develop and refine performance indicators to provide data and share information with providers for decision-making and evaluation of outcomes. As BH services are added to the community continuum of care and transformations continue to occur to the BH system (i.e., 911 and first responder BH training, expanded case management and outpatient resources, law enforcement BH training, enhanced crisis line and crisis response team services, opening a crisis stabilization facility), performance indicators will be re-evaluated to determine their value to the proposed project outcomes. By sharing data across systems and among BHTF multi sector partners and providers such as 911, crisis response team, emergency departments, law enforcement, outpatient clinics and services, we can measure individual and collective achievements in meeting the goals of identifying high utilizers of the crisis system, diversion of BH crises from EDs and jail and increasing access to high quality outpatient BH services. These measures will be displayed through the web-based dashboard, which will allow the behavioral health providers and parish leaders to monitor and understand the current state of the system and study long-term trends (e.g., ED utilization for BH issues, calls to the crisis response team, and call outcomes).

Coalition on Families

St. Tammany Commission on Families is a coalition of diverse members working together to increase capacity to empower families by providing opportunities for networking, collaboration, training and information exchange. Our purpose is to identify service gaps, develop strategies for the mobilization and utilization of volunteers within organizations and involve the private sector in supporting services for families and children. Since 1996 the commission has worked with people, groups and organizations that provide critical support and services to children and families.

Topography

Much of Louisiana's marsh lands were built by the Mississippi River during the current Holocene period. These soils are considerably weak and very compressible. Note that the area north of Lake Pontchartrain experiences some of the lowest subsidence rates in the state. This is because the alluvial deposits which built much of coastal Louisiana do not impact in this area as much as other areas of our coast. In fact, the area just to the north of our project site is where the older previously consolidated soils from the Pleistocene Period soils daylight. These soils are nearly fully compressed and therefore have very little to no subsidence. Because St. Tammany Parish is located just above the Pleistocene soils, the depth of the Holocene soils is minimal which results in very little settlement. When a marsh creation project is constructed, the surface of the marsh fill drops rapidly as the deposit sediments de-water. This is followed by a continuous period of settling as the pressure from the deposited mass pushes down on the native soils causing subsidence. However, due to the topography of the Parish there is very little

change in marsh fill elevation after the first 180 days which makes this a resilient location for such investments allowing projects to last and offer support to adjacent marsh.

III. APPROPRIATE APPROACHES

i. General Description of Optimal, Eligible Program Type(s)

St. Tammany Parish has selected the optimal activities and program types to improve disaster recovery and resilience. These interventions address coastal land loss through large scale interventions incorporating flood protection, greenspace and marshland restoration. They overlay the co-benefits of social resilience through the integration of parks, comprehensive bike access, and recreational opportunities. Further, the Parish will improve wellness and behavioral health for vulnerable communities in the Parish and region.

ii. General Description of Optimal, Ineligible Program Type(s)

St. Tammany is the most affluent parish in the state which also adds to its appeal when people decide to resettle in the face of advancing risk in other regions. While this status should be considered an advantage it detracts attention from the very real low to moderate income populations that do exist throughout the parish and limits the eligibility of many critical projects.

EXHIBIT E: FACTOR 3 - SOUNDNESS OF APPROACH

I. PROJECT APPROACH

i. Describe Project(s) (and alternatives)

STRENGTHEN DEVELOPED AREAS

In order to fully address the unmet needs of the Slidell area, direct protection to homes in the face of flooding events must be provided by strengthening environmental defenses. However, the goal of Resilient St. Tammany is to not only improve community safety but also encourage overall behavioral health and wellness amongst its citizens, increasing mental and physical strength. To this effect, **Layer Strengthen** proposes 7 green infrastructure projects that will upgrade storm water infrastructure, create water quality benefits, and incorporate recreational and community improvements parish wide.

Detention Ponds

First, resilient St. Tammany proposes a series of six detention ponds layered throughout the Slidell watershed. During past tropical storm events the overland storm surge has not yet reach the locations where detention ponds are proposed; however, the elevated water surface elevation in the receiving basin has prevented water from draining out to the lake. The proposed series of ponds will provide approximately 1,480 acre-ft of storm water storage or enough water to cover 2.3 square miles in 1 foot of water. This amount of volume added to the basin and target area will provide a significant amount of stormwater storage to the basin.

Canal Conveyance

As the ponds store water within Slidell, major drainage canals W-14 and W-15 serve as vital organs for moving water through both incorporated and unincorporated portions of the City of Slidell. Based on the results of detailed watershed basin models by the Parish, its partners, and the Army Corps of Engineers, STPG proposes to increase capacity of these canals. This activity, in conjunction with the aforementioned detention ponds, will diminish the risk of flooding in densely populated areas of the City. Furthermore, improving conveyance in both the W-14 and W-15 will improve the rate of water flowing through Slidell into the Fritchie Marsh, located at the Southern point of the Parish, as storm waters subside.

Trail Improvements

To compliment environmental strength with strength of community, Resilient St. Tammany will expand the purpose and value of critical infrastructure by incorporating recreational and community enhancements. STPG is well versed in creating and valuing successful, sought after environmental amenities. In 1992 St. Tammany Parish purchased the abandoned Illinois Central Railroad corridor and transformed it into the 31-mile Tammany Trace (commonly referred to as, “The Trace”). It is Louisiana’s first and only rails-to-trails conversion and the first Louisiana trail under the Rails-Trail Network. Considered to be one of Louisiana’s premier recreational amenities, The Trace is a bicycle and pedestrian path. Furthermore, it connects the five (5) St. Tammany Parish cities of Covington, Abita Springs, Mandeville, Lacombe, and Slidell. The Trace is a popular recreation, transportation, educational and wildlife conservation corridor, linking isolated parks, creating greenways, and preserving historic landmarks and wetlands. Resilient St. Tammany proposes to install a nine mile extension of the well trafficked Trace from Northshore Boulevard via Camp Salmen to Fremaux Town Centre. This addition will bring the rural trail in to the heart of the city of Slidell, create healthy

connectivity and ensure all community members have access to jobs and services. The trace will also link to proposed access paths on top of the W-14 and W15 canal improvements. Canals, unseen and uncelebrated will be converted into celebrated recreational amenities that provide new transportation routes to communities throughout Slidell, connecting to parks and community centers while promoting health and wellness by providing opportunities for active transportation and recreation.

Neighborhood Amenity Projects

The vast majority of the storm damaged properties currently owned by the Parish are in suburban or semi-suburban contexts. These are parcels smaller than a quarter acre located in neighborhoods where the majority of homes are occupied and the neighborhood vibrant. As indicated in the St. Tammany Culture, Recreation and Tourism Strategic Plan (p.45, 57, appendix) these properties can benefit and be cared for by the local neighborhood. Thus, Resilient St. Tammany proposes to restore these areas as orchards, community gardens, playgrounds, or simple shaded lawns, dependent on the feedback of each neighborhood. Properties with these retrofits will be able to store stormwater, decreasing flood risks, while providing high quality neighborhood amenities at little expense to the Parish.

Landscape Restoration

The St. Tammany Parish Culture, Recreation and Tourism Plan also provides a detailed regional GIS analysis which indicates the best future use for many Parish-owned mitigated properties is to restore them. Thus, through infrastructure removal, minor re-grading and restoration of native plant life proposed by Resilient St. Tammany, these properties can serve educational purposes, while simultaneously detaining and collect stormwater.

Neighborhood Parks

A few properties identified in the St. Tammany Parish Culture, Recreation and Tourism Plan were identified as ideal neighborhood parks (p.44, appendix). Specifically, Resilient St. Tammany will construct Ben Thomas Park and Hiawatha Park. These moderate sized parks will offer dedicated recreation facilities to the surrounding community while offering additional benefits by preserving impervious cover while detaining and cleaning stormwater runoff.

Habitat Preservation

Natural habitat preservation of a site serves multiple purposes towards promoting resilience. Through maintenance of undeveloped hydrology, local water bodies are cleaned and runoff slowed as it passes through the site. In addition to providing educational opportunities and screening urbanized uses from view, native landscape preservation can ensure land does not urbanize and exacerbate flooding concerns in the watershed.

EMBRACE THE COAST

The ability of Louisiana's coastal marshes to suppress storm surge is widely accepted, however, the amount of suppression is a matter of debate. One of the first publications on this issue was in 1963 by the United States Army Corps of Engineers (USACE) which reported that every 2.7 miles of marsh land reduces 1 foot of storm surge (USACE, 1963). Since then, there have been many publications citing a wide range of values, proving that calculating the value of coastal marsh is a complicated task. Factors impacting this value include storm size, intensity, direction and speed, as well as vegetation and topography of the area. One thing that is not debated is that the conversion of coastal marsh land into open water increases the risk of flooding in coastal communities. In order to embrace its coastal identity, STPG is to restore the Fritchie Marsh as a first line of defense against coastal erosion.

Fritchie Marsh Structural and Hydrologic Restoration

The Fritchie Marsh is an area of intermediate to brackish marsh near Slidell, La that provides both environmental and storm protection benefits to lower St. Tammany Parish. The Fritchie Marsh is approximately 6,291 acres in size and bound to the east by Highway 90, to the south and west by Highway 433 and to the north by Apple Pie Ridge Road and Hwy 190. The area contains the lower portion of the W-14 canal and Doubloon Bayou, as well as developed and undeveloped land south of the city of Slidell. It is the final land mass protecting the residents of Slidell from an approaching tropical storm. According to an analysis prepared by GCR Inc., the Fritchie marsh lost approximately 273 acres of land from 2010 through 2012, largely due to Hurricane Isaac. The preservation/restoration of the Fritchie Marsh has been identified as being crucial to protecting the surrounding area from flooding. The Coastal Wetland Planning Protection and Restoration Act (CWPPRA), the USACE, and St. Tammany parish are all working on marsh creation projects in the marsh. However, without a large scale hydrologic restoration of the area, the rebuilt marsh will not reach its full potential.

The unfortunate truth of living along the Gulf Coast is that some degree of tropical flooding is inevitable; however, this is the way of life and culture we know. These coastal communities are familiar with the evacuations that are necessary when storms enter the area. The hope is that the storm comes and goes and that all return to a normal life. Storm surges seen during Hurricane Isaac were 9.0' just south of the Fritchie Marsh, at the Rigolets Pass gage. The time required for water levels to reside were lengthened by the fact that all water that enters the system by overtopping Hwy 90 had to leave through the limited channel network of the Fritchie Marsh. The restoration of the Fritchie Marsh's hydraulic capabilities, as will be performed in this

project, would not only provide the necessary fresh water, nutrients, and restore the hydrologic ecosystem but will also decrease the time it takes for flood waters to reside which will help to decrease damages and shorten the time people are away from their homes during storm events.

TRANSFORM DEVELOPMENT AND GROWTH

Strengthening community and embracing the realities of coast and climate require transformation in thinking and a focus on long term social resilience growth for generations to come. **Layer Transform** proposes Safe Haven, a mental health facility for St. Tammany and the surrounding region.

Safe Haven

Because of the growing mental health care crisis within St. Tammany Parish, leaders, officials, non-profits and residents have consistently sought new, proactive approaches to the provision of behavioral health care within the parish. The St. Tammany Parish Behavioral Health Task Force (“Task Force”) currently exists as a collaboration between government, law enforcement, education, judicial, healthcare and non-profit leaders created under a common goal to create sustainability and results in the provision of local behavioral health services. The task force sought the help of the Louisiana Public Health Institute to assess the current behavioral health situation within the parish and provide recommendations for the future. In its report, the Louisiana Public Health Institute outlined the continued problems associated with the provision of behavioral health services within St. Tammany Parish. (A copy of the Louisiana Public Health Institute Report is attached as Exhibit “A”).

In 2012, State officials announced major cuts in Medicaid funding and the closure of a well-used mental healthcare facility in Mandeville, Louisiana. By working with the state, parish

administration was able to help keep the hospital open to continue to serve citizens of St. Tammany Parish. Moreover, the state's plan called for St. Tammany Parish Government to acquire the hospital campus consisting of approximately 293 acres in exchange for \$15.5 million dollars. While the hospital remained open under a new operator (Northlake Behavioral Health System), St. Tammany Parish Government officially became the owner of the hospital and the surrounding land in March 2015.

Because of the unique opportunity to acquire such a large parcel of land, parish officials began to determine a variety of public needs which the site could address. After careful planning and consideration, parish administration decided that the 293 acres would be subdivided into four parcels with four different purposes:

- 99 Acres - The parish will surplus and sell this portion of land to Recreation District Number 1, who will develop the land in order to improve facilities and services at its well-used Pelican Park.
- 75 Acres - This portion will become a parish-owned wetlands mitigation bank. Just as private developers must mitigate impacts to wetlands and floodplains from new development, local governments are required to address the same issues. With its own wetlands mitigation bank, St. Tammany Parish Government will be able to save certain costs associated with wetlands mitigation while preserving a large area as green space for future generations to enjoy.
- 45 Acres - The portion containing the northern hospital facilities itself will eventually be sold or leased to a private behavioral health provider offering services complimentary to the Safe Haven concept.

- 74 Acres – The southern 74 acres of the acreage will serve as the location for Safe Haven.

Within the southern portion of the hospital campus, there are currently a variety of partners and stakeholders already using some of the facilities. Organizations like the Florida Parishes Human Services Authority, the National Alliance on Mental Illness (NAMI) and the St. Tammany Parish School Board are utilizing the southern portion of the campus referred to as the “Quad” and the group homes. For example, NAMI runs a residential community which provides 24-hour care in a group home setting. The Safe Haven campus and programs will draw on the existing uses present at the site and help to implement the full continuum of care desired by the parish. There is currently 62,000 square feet of vacant space in the Quad that is ready for additional programming for an improved behavioral health care system in St. Tammany Parish.

Resilient St. Tammany seeks to develop a phased implementation strategy for the Safe Haven campus. Safe Haven will serve as a comprehensive, multi-faceted program on the campus of the former Southeast Louisiana State Hospital which will provide a full continuum of care for those suffering with behavioral health illness within the parish. The parish intends to devise a phased implementation strategy starting with existing 62,000 square feet of space that is currently vacant on the hospital campus. The vision for Safe Haven is to serve as a single “point of entry” into the behavioral health continuum of care for law enforcement, the judiciary and local area hospitals while continuing current programs provided by behavioral health entities and non-profits as well as sharing common resources. Moreover, Safe Haven will provide on-site services for persons with behavioral health disorders. These services will include, but not be

limited to: training and education, job seeking, resume building, job coaching, interview skills, application assistance for Medicaid and Medicare, legal services and permanent housing.

A primary goal of Safe Haven is the provision of behavioral health treatment to individuals before their problems worsen. Moreover, Safe Haven will act as a jail diversion program for non-violent offenders who may need behavioral health treatment instead of jail time. The process of jail diversion typically begins at the “point of diversion,” or the point where a law enforcement officer first encounters a behavioral health sufferer.

Unified Development Code

Finally, to ensure all transformations are permanent and become the new status-quo of how, where, and why the parish decides to develop and as part of its continued response the inevitable population migration moving towards the Parish, St. Tammany has initiated the process of developing a Unified Development Code (UDC). This process will result in a streamlined, organized development process that is

- Simple, flexible, and easily administered by staff;
- “User-friendly”, easy to read, understand and interpret for all users, staff, developers, and elected and appointed officials;
- Heavily illustrated, with considerable graphics depicting the requirements, recommendations and concepts detailed in the code;
- Flexible to allow for streamlining of the development review process;
- Conducive to development and redevelopment, particularly in targeted areas, including Economic Development Districts and major growth corridors;

- Consistent with the community’s planning and development goals, including resiliency program;
- Built upon the best planning and engineering principles and practices.

The UDC will:

- Eliminate inconsistencies between code provisions;
- Ensure that recommended regulation changes are in compliance with all federal, state and local laws and requirements;
- Incorporate regulation changes that address Parish resiliency programs and priorities;
- Consider input from developers and Parish residents gathered during an aggressive public outreach process
- Include best practices with respect to residential and commercial drainage reviews and recommendations with respect to implementation of the Parish’s Watershed Study recommendations.

reSET

While all of the proposed activities provide value, none is as affective without the others working with it in tandem.

The improved hydraulics of the Fritchie, detention capabilities of the ponds, improved conveyance, and the integrated network of parks, habitats, and restored landscapes will have benefits in common place riverine flooding also well as disaster level events. Both the French Branch Detention pond and the Ben Thomas Detention Pond, currently in the design process, will b produce a little more than a foot of improvements in water surface elevation in a 100 year storm event within the target area downstream of the respective ponds. Improvements in the

Fritchie Marsh along with marsh restoration projects and hydraulic restoration should help to reduce those values even further.

These projects offer great protection of the required 50 year design life. What's more, once improved water flow through the marsh is restored as a result of the W-14 and W-15 work and watershed enhancements, Fritchie Marsh will continue to vegetate and re-store land building functions restoring its self-sustaining nature. Although minimal, mineral deposits are present in fresh water which will add to the land building capability; furthermore, the biomass production fostered by the fresh water will help with vertical accretion of a marsh habitat that is currently threatened. This suite of improvements will allow the Slidell area to return to a normal life more rapidly following a tropical storm events such as Hurricane Isaac. Due to limited maintenance requirement, these project will continue to improve protect the area while restoring the habitat of the coastal marsh that protects the people living in this coastal community.

Resilient St. Tammany then layers a strong sense of security with a strong sense of place. The Trace extension and trail incorporation along W-14 and W-15 create incredible opportunities for physical wellness and connectivity throughout Slidell along with an educational connection to the watershed—resulting in attractive amenities, increased physical health, and deeper understanding of our coastal environment.

Construction of Safe Haven rounds out the Resilient St. Tammany approach by ensuring that all citizens can not only realize environmental and physical strength but mental strength as well. By committing to address regional mental health issues, Resilient St. Tammany is preparing the Parish to not only care for its own community at every level but also to receive and incorporate new communities holistically and effectively.

The Unified Development Code will unite all of these approaches and make them standards throughout the Parish. **RESILIENT ST. TAMMANY** is positioned to set (**S**trengthen, **E**mbrace, **T**ransform) the standard for resilience. As a leader in resilience, St. Tammany is positioned to not only address remaining local recovery needs but also to serve as a leader in Louisiana’s overall strategy for increasing disaster preparedness and resilience

ii. Describe How Project(s) Will Increase Resilience

The proposed suite of activities will not only provide natural, maintainable safety measures for the Slidell community and parish at large, but will also facilitate healthier lifestyles for those that call Slidell home. Improved economic situations will also be realized through increased job access and lower insurance rates due to decreased flooding.

iii. Describe Benefits to Section 3 Persons and Vulnerable Populations

The proposed project will benefit Section 3 persons and business given that the location of the project activities is in one of the Parish’s most vulnerable areas. STP and its project partners will adhere to the Department of Grants Compliance Manual: Section 3 of the Housing and Urban Development Act of 1968. Pursuant to this policy, the Department of Grants will consult its list of certified Section 3 residents and business concerns to pro-actively seek Section 3 residents and business concerns to work on the project. STP’s Section 3 Compliance Officer will provide all project partners, contractors, and subcontractors with guidance on Section 3 compliance.

iv. Describe How Proposal is a Model (Replicable, Scalable, Integrated)

St Tammany is initiating a suite of interventions as demonstration projects that can be implemented across the Parish in varying degrees. While not every part of St. Tammany Parish interacts with both marsh and lake, each region touches at least one of the two and all areas suffer from overburdened infrastructure as well as the need for connectivity. Resilient St. Tammany will be a model for each drainage region running the length of the Parish, targeting Madisonville, Covington, Abita Springs, Mandeville, and Lacombe. Each town contains drainage canals similar to the W-14 and W-15 that require retrofits. Similarly, each watershed requires the incorporation of detention ponds to manage water inland. Finally, the Trace links each town to one another and can be enhanced through added trails that move in the more developed areas providing improved access and connectivity.

v. Describe Project Feasibility and Effective Design

STP recognizes that the project and its components are ambitious – both in terms of scale and timeline for implementation. Nevertheless, given the experience of STP’s partners and the connectivity of design STP is confident that the activities within Resilient St. Tammany are feasible and firmly designed.

Specifically, DDG has provided program management on the Parish’s storm water regional detention program projects initiated in 2009 (funded by OCD-DR) and drafted guidance to support STPG’s coastal initiatives. Further, DDG was integral to the completion of the Parish’s January 2015 Coastal Protection and Restoration (CPRA) Parish wide Watershed Study

addressing stormwater management and water quality. As a result the Resilient St. Tammany team is assured have once again design successful proposals and will implement them similarly.

DW has provided lead support to STPG through the planning effort of St. Tammany Parish Culture, Recreation and Tourism Plan which provided the recommendations for the revitalization of storm-damaged properties throughout the Parish proposed through Resilient St. Tammany. DW actively supports STPG in the development of sustainable infrastructure systems and urban design guidelines that can respond to and accommodate anticipated growth scenarios and flood protection issues presented by climate change and land loss factors.

GCR is actively managing STPG's Isaac allocation and has already successfully completed a HUD monitoring visit. The GCR team includes subject matter experts in compliance and monitoring, systems support, procurement, application processing, auditing oversight, and grant closeout. GCR's involvement in the design of Resilient St. Tammany ensures the activities are not only feasible per construction timelines but also compliant per the NOFA and HUD requirements.

Finally, Resilient St. Tammany is feasible and will be effective due to the fact that sheer fact that the activities will be lasting. While much of the State of LA struggles with subsidence, a process that can be slowed but never stopped. This is due to the fact that much of Louisiana's marsh lands were built by the Mississippi River during the current Holocene period. These soils are considerably weak and very compressible. However, the area north of Lake Pontchartrain, more specifically St. Tammany Parish and the Resilient St. Tammany Project site of Slidell, experiences some of the lowest subsidence rates in the state. This is because the alluvial deposits which built much of coastal Louisiana do not impact in this area as much as other areas of our

coast. In fact, the Slidell area is where the older previously consolidated soils from the Pleistocene Period soils daylight. These soils are nearly fully compressed and therefore have very little to no subsidence. Because the proposed project is located just above the Pleistocene soils, the depth of the Holocene soils is minimal which results in very little settlement for the project area.

In conclusion, investing in Resilient St. Tammany is investing in a project that is not only feasible based on the experience of partners but effective and lasting in design due to the strength of the site selected.

vi. Describe Consultation and Coordination with Regional Partners

The STPG consultation process involved community outreach and stakeholder meetings that provided an abundance of information, which was shared with internal and external team members and used to generate the ideas and concepts that formed the overall project approach. The Parish has been transparent during all outreach and engagement efforts with respect to its project approach as well as its target areas and priority initiatives in order to solicit meaningful and relevant feedback from those involved in the meetings and discussions. The input received was used to shape the direction of the application, expand thinking related to unmet needs, risks, and vulnerabilities, and broaden the Parish's perspective regarding how residents and stakeholders perceive resilience.

The comprehensive outreach plan for Phase II of the National Disaster Resilience Competition was designed to engage all citizens in St. Tammany Parish, including those citizens who live areas that have been identified as having one or more of the identified vulnerabilities. This plan included the following objectives:

1. To introduce the vulnerabilities identified in St. Tammany Parish.
2. To encourage citizens to participate in meaningful feedback as it relates to their needs as citizens of St. Tammany.
3. To provide opportunities and an easy platform for participation in the comment phase.
4. To introduce proposed project concepts that will address the vulnerabilities.
5. To provide public updates on the outcome of the competition and the progress of the proposed projects.

Implementation of the plan included: website postings, input cards (both digital and hard copies), presentations throughout the community, radio and television appearances, social media posts, specific outreach to specialty groups, one-on-one outreach to neighboring communities, one-on-one outreach to community stakeholders and word of mouth.

Throughout this process, the goal was to reach every community within St. Tammany Parish, to educate them about the NDRC, to present them with proposed project concepts and identified vulnerabilities, and to ask them to give feedback on these proposed concepts. The www.stpgov.org webpage was utilized to house the National Disaster Resilience Competition (NDRC) comment card. This offered to the general public, a comprehensive explanation of the NDRC competition, as well as a portal to offer commentary through a digital comment card. This webpage was utilized from the beginning of Phase II, (June 25, 2015) and continued until October 8, 2015. There were 136 comment cards entered through this portal.

The NDRC team presented the proposed project concepts to several groups throughout the community. (See Attachment) These presentations included a PowerPoint presentation explaining in detail the identified vulnerabilities in St. Tammany Parish, the ways in which they impact St. Tammany Parish, and the proposed project concepts. Each attendee was given a

comment card, and during the presentation, each attendee was walked through the concepts presented on the card, at which time, questions regarding the NDRC, the identified vulnerabilities and the proposed project concepts were addressed.

From the beginning of Phase II, June 25, 2015, team members utilized television, radio and social media to solicit input from members of the community. Eleven separate radio and television appearances over a two-month period, spanning a wide variety of audiences, were utilized to both inform the entire citizenry both within St. Tammany, in surrounding Parishes and in surrounding states, of the NDRC, proposed project concepts, and ways in which they could offer commentary. Discussions were held at length during the interviews to answer any questions regarding the process, the concepts, the identified vulnerabilities, and any and all other topics surrounding public comment.

Social Media was utilized to reach out to the nearly 9,000 followers of the St. Tammany Parish Facebook Page, as well as the nearly 3,000 St. Tammany Parish Government twitter followers. This effort reached 5,667 people through Facebook, was shared a total of 29 times, and received 200 post clicks. On Twitter, this tweet was seen by 421 twitter users, 17 total engagements, 11 link clicks, five detail expands, and one retweet . We also enlisted five separate groups to share on their social media sites.

Specialty Groups were targeted for input because of the ways in which specific concepts impact their interests. These groups were asked to disseminate the information regarding NDRC to their groups through Social Media, email blasts, and word of mouth. As a result, the information was shared through multiple municipalities, neighboring Parishes, neighboring states, and various communities whose activities often spill over into St. Tammany.

Neighboring communities were contacted through personal phone calls and email correspondence, and asked to offer input on identified vulnerabilities, proposed project concepts and partnership possibilities. Community Stakeholders were contacted to discuss their role in the future of the resilience of St. Tammany. They were also asked to disseminate the information regarding the NDRC and ask their colleagues and neighbors to give feedback on identified vulnerabilities and proposed project concepts.

St. Tammany Parish Government employees were contacted through an internal newsletter. Everyone who was engaged directly through a presentation, radio interview, email, etc. was asked to spread the word about the NDRC and go to the www.stpgov.org/national-disaster-resilience-competition website to give input.

The outreach campaign generated hearty discussion and the exchange of ideas throughout St. Tammany Parish.

Regionally, STP remained active with the Statewide Resilience working group, comprised of all State of LA NDRC applicants. This group meets regularly and has developed a shared State framework, Louisiana's Strategic Adaptations for Future Environments (Louisiana SAFE). This framework has been designed to complement the CPRA Coastal Master Plan and fill a resilience gap by articulating a development strategy that combines world class science through the Coastal Master Plan with the community- planning and policy techniques the state as a whole has honed over its decade-long post-Katrina recovery effort. Louisiana SAFE compliments the Coastal Master Plan by taking a people-driven approach to maintain that uniqueness and way of life while remaining mindful of the world class future risk projections at the state's disposal. Louisiana Safe then played a role in how all Louisiana applicants design

their individual project approaches, acknowledging that each part of the region is different and has unique needs while still understanding the reality of shared threats and the value of connection amongst approaches.

II. BENEFIT-COST ANALYSIS

Social, environmental, and economic resilience factors were all considered when analyzing the benefit to cost ratio of the Resilient St. Tammany project. Total life cycle costs are \$100,440,639.00 while total benefits equal \$232,528,718. This results in a BC ratio of 2.32.

III. SCALING/SCOPING

i. Narrative Description of Priorities

1. *Unified Development Code*: Because the UDC will create a foundation for how, why, and where STP develops moving forward, it is the number one priority of Resilient St. Tammany.
2. *Fritchie Marsh Structural and Hydrologic Restoration*: as the first line of defense and the strongest opportunity to protect the parish from inundation, marsh restoration is the number one priority for the Parish.
3. *W-14 and W-15 Conveyance*: While restoring the Fritchie Marsh will provide protection from incoming storms it is critical that the Parish also address water that falls directly onto the ground both in how to retain what is needed and remove what is excess. Thus, the W-14 and W-15 canal project is second on the priority list to ensure the drainage capabilities of the Parish are in line with the needs of its population.

4. *Detention ponds, parks and environmental enhancements:* Layers of defense with regards to drainage and water management are vital for safety. The detention ponds and parks proposed will not only add to this landscape of integrated water management but also provide recreational space to add to quality of life for residents.
5. *St. Tammany Trace:* The Trace is one of the Parish's strongest assets. The Trace connects the communities throughout St. Tammany as well as serves as a draw for people throughout the region. Expanding its access is critical for the economic wellbeing of the Parish as well as the overall health of its residents.
6. *Safe Haven:* While Safe Haven will meet severe region needs and advance the social and mental resilience of the Parish, the potential for other funding mechanisms ensure the project will come to fruition with or without NDRC funding.

ii. Identify opportunities for Scaling Proposed Project(s)

Much of the Resilient St. Tammany strategy cannot be scaled due to the required holistic solution the activities will produce. However, when considering the detention ponds the Parish proposes scaling them to prioritize the ponds furthest north in the watershed first and then gradually moving down towards the lake. This is due to the fact that, while all of the ponds are of value, it is a necessity to drain as the watershed flows, in order to realize the full potential of each portion of the project.

IV. PROGRAM SCHEDULE

Due to the high expertise of partners on board many of the activities that comprise Resilient St. Tammany will begin by the first or second quarter of 2016. STP and their partners are also confident that all activities will be complete, functional and able to provide either expected benefits by the second quarter of 2019, at the latest— well within the expenditure deadline per the NOFA.

V. BUDGET

The total budget for Resilient St. Tammany is \$102,844,850

ii. Narrative Description of How Budget Was Developed

Engineer’s Statement of Probable Cost. Developed consistent with engineering standards. The firms providing support have work extensively in STP and in conjunction with the Parish providing a further level of exactness to the cost estimates.

VI. CONSISTENCY WITH OTHER PLANNING DOCUMENTS

i. Consolidated Plan and/or Regional Sustainability Plan (HUD-2991)

The federal government requires that local and State governments consolidate the Department of Housing and Urban Development (HUD) programs planning and reporting requirements into one document referred to as the Consolidated Plan. The Consolidated Plan is designed to be a coordinated process in which a community offers its unified vision for housing and community development. Each jurisdiction’s plan must outline the resources it will engage to reach its goals, and how it will pursue those housing and community development goals. This

process and statement of community goals are required to be open, with opportunities for input from the public. HUD's statutory program goals that must be addressed by each participating jurisdiction include *a) the provision of decent housing; b) a suitable living environment; and c) expanded economic opportunities*. Because of demographic changes in St. Tammany Parish that have made them eligible for HUD entitlement funds, the Parish has agreed to participate in the Consolidated Planning process for the first time in 2008.

ii. Mitigation Plan

St. Tammany Parish is subject to natural hazards that threaten life and health and have caused extensive property damage. Since 1965, St. Tammany Parish received 20 Presidential Disaster Declarations, more than any other parish in the state. To better understand these hazards and their impacts on people and property, and to identify ways to reduce those impacts, the Parish's Office of Emergency Preparedness undertook a *Natural Hazards Mitigation Plan*.

Under the Disaster Mitigation Act of 2000 (42 USC 5165), a mitigation plan is a requirement for Federal mitigation funds. Therefore, a mitigation plan will both guide the best use of mitigation funding and meet the prerequisite for obtaining such funds from the Federal Emergency Management Agency (FEMA). FEMA also recognizes plans through its Community Rating System, a program that reduces flood insurance premiums in participating communities. This *Mitigation Plan* and this *Update* meet the criteria of all these programs.

EXHIBIT F: FACTOR 4 – LEVERAGE

I. FINANCIAL COMMITMENTS

STPG leaders have expressed a willingness and desire to revise the sales tax structure to provide funds for resilience projects. Currently, the Parish’s sales tax revenue is restricted to use on road and drainage projects. Parish leaders would like to expand the uses of local tax revenue to implement and maintain projects that will be developed in Phase II. This recurring revenue stream will be leveraged by projects funded through the state’s Coastal Master Plan, which is likely to see some funding through the RESTORE Act (directing BP Oil Spill fines and penalties to coastal restoration). STPG will also continue to build relationships with other partners during Phase II as specific project concepts are developed, as well as continuing to apply for state and federal grant opportunities.

As a member of the NFIP CRS and the FLOAT CRS Users Group, STPG actively encourages public awareness of flood risk, mitigation strategies, insurance rates, and addressing repetitive loss properties. The Parish’s current and future marsh creation and watershed management projects are designed to lessen the risk of flooding in communities and reduce the number of repetitive loss properties, improving the Parish’s CRS class and reducing premiums. St. Tammany’s goal of combining smart growth planning along I-12 with “multiple lines of defense” along the coast will improve the risk assessment for property owners. This goal is echoed in the state of Louisiana’s Coastal Master Plan and other CPRA projects designed to bolster coastal defenses against flooding and storms, protecting inland communities and lessening flood risk. Louisiana’s multiple disasters and recovery periods have given local officials extensive experience in addressing these insurance considerations.

Louisiana and St. Tammany’s experience has shown that preventing floods through a “multiple lines of defense” strategy that includes coastal resilience, responsible floodplain management, storm water management infrastructure, and flood control structures is an approach that realizes significant cost savings as future damage is mitigated. The cost savings include electricity savings from switching to passive drainage and storm water retention infrastructure, reduced flood damage from future storms, reduced insurance premiums, increased home values, and increased water quality.

STPG is focused on addressing the coastal areas of the Parish, as well as encouraging smart growth development in the developed areas along I-12. However, as demonstrated, changes in coastal ecology are regional in nature, and lessening flood risk in one place can sometimes affect the flood risk elsewhere in the region. Southeast Louisiana is a dynamic region, and STPG’s proposed approach to accommodate population growth from lower-lying and damaged coastal communities will have regional and statewide effects, even if the project concepts and implementation remains local to the Parish.

Source	Type	Financial or Supporting	Commitment	Scope of leverage	Activity Supported
STPG	Public Health Millage (2015)	Financial	\$300,000	Master Plan; site assessment	Safe Haven
STPG	Public Health Millage (2016)	Financial	\$52,844	Programming	Safe Haven
STPG	Land Acquisition - 327 General Fund	Financial	\$6,500,000	Land acquisition	Safe Haven
STPG	Sales Tax - 300-16	Financial	\$150,000	Site improvements	Safe Haven

STPG	300 Account	Financial	\$1,680,000	Site improvements	Safe Haven
STPG	Coroner	Financial	\$60,000	Site improvements	Safe Haven
STPG	Restore Act	Financial	\$2,000,000	Site improvements	Safe Haven
STPG	NAMI Demos/Rehab	Financial	\$778,000	Site improvements; building rehabilitation	Safe Haven
FEMA	HMGP - Slidell Drainage	Financial	\$3,788,250	W-14 canal improvements (design and construction)	Fritchie Marsh
STPG	HMGP match	Financial	\$750,987	W-14 canal improvements (design and construction)	Fritchie Marsh
STPG (Restore Act)	HMGP Match	Financial	\$978,000	W-14 canal improvements (design and construction)	Fritchie Marsh
CPRA	HMGP match	Financial	\$400,000	W-14 canal improvements (design and construction)	W-15 canal improvements
FEMA	HMGP - Slidell Drainage	Financial	\$7,996,748	French Branch pond	W-15 canal improvements
STPG	HMGP match	Financial	\$2,448,760	French Branch pond	W-15 canal improvements
STPG	Sales Tax	Financial	\$200,000	Hydrologic modeling	Fritchie Marsh
USACE	COE - W-14 Survey	Financial	\$270,000	Survey work	Fritchie Marsh

STPG	Sales Tax	Financial	\$1,000,000	Drainage improvements	W-15 canal improvements
STPG	Sales Tax	Financial	\$486,200	Design and construction	Fritchie Marsh
Private	Stirling Properties	Financial	\$5,900,000	Fremaux Pond	Detention Ponds
STPG	FEMA - HMGP	Financial	\$4,608,000	Ben Thomas Pond (drainage)	Detention Ponds
STPG	Restore Act	Financial	\$1,000,000	connections; Slidell trail head; Heritage Park	Trace
STPG	Restore Act	Financial	\$2,000,000	Camp Salmen improvements	Neighborhood enhancements
STPG	Restore Act	Financial	\$5,000,000	Marsh restoration	Fritchie Marsh
DOTD	State funding (via City of Slidell)	Financial	\$450,000	Pedestrian crossing at Fremaux	Trace
City of Slidell	HMGP	Supporting	\$7,000,000	Drainage improvements	W-15 canal improvements
DOTD	State funding	Supporting	\$863,000	Independence Dr. Bridge (construction and A&E)	W-15 canal improvements
DOTD	State funding	Supporting	\$2,000,000	Hwy. 11 complete streets	Trace
CPRA	State funding	Supporting	\$2,000,000	Levees	Fritchie Marsh

CPRA	State funding	Supporting	\$935,000	Oak Harbor Rd. elevation	Fritchie Marsh
CPRA	State funding	Supporting	\$6,750,000	Levees	Fritchie Marsh
CPRA	CWPRA - State funding	Supporting	\$28,023,985	Bayou Bonfouca (All aspects of marsh creation project)	Marsh restoration
STPG	CIAP (via CPRA)	Supporting	\$1,891,000	Bayou Bonfouca (All aspects of marsh creation project)	Marsh restoration
City of Slidell	DWF	Supporting	\$2,500,000	Marina project	Heritage Park
City of Slidell	DWF	Supporting	\$36,000	Sewage pump	Heritage Park
DOTD	State funding (via City of Slidell)	Supporting	\$1,000,000	Streetscaping	Trace
DOTD	State funding (via STPG)	Supporting	\$368,984	Camp Salmen trace connection	Trace
STPG	FEMA - HMGP	Supporting	\$3,400,000	Isaac Elevations - app includes 8 Slidell structures (primary) and 12 alternates	Neighborhood enhancements
City of Slidell	FEMA - HMGP	Supporting	\$1,763,270	Home elevations	Neighborhood enhancements
City of Slidell	FEMA - HMGP	Supporting	\$3,320,059	Home elevations	Neighborhood enhancements
STPG	CDBG entitlement	Supporting	\$100,000	Ben Thomas Master Plan	Ben Thomas Park/Pond

EXHIBIT G: FACTOR 5 - LONG-TERM COMMITMENT

I. COMMITMENT TO RESILIENCE

i. Update on Phase I Commitments

Formed in July 2014, the **North Slidell Revitalization Plan (NSRP)** is one of the most recent initiatives in the Parish that is focused on enhancing long-term resilience and demonstrates a cross-section of individuals focused on the future of the Parish. North Slidell is flood prone and home to numerous vulnerable households. Currently, FEMA has committed to funding a 26-acre retention pond mitigation project, which will increase flood protection for residents and businesses. Other items upon which the NSRP will focus include direly needed infrastructure improvements, including repairing and improving capacity of antiquated sewage and water systems and enhancing means of ingress and egress for the growing population.

The **St. Tammany Parish Environmental Corridor Study** provides two major tools: a Parish-wide land suitability map which identifies areas of the Parish more suited to restoration and preservation projects and an implementation matrix which analyzes storm-damaged property characteristics and potential project success requirements in order to match future projects with the most suitable sites available to the Parish. Specifically within the corridor investigation, the plan focuses on sustainable natural resource management which will enhance disaster resilience, and addresses key needs with respect to hydrology, environment, land use, and the economy.

In the 2014 legislative session, the Louisiana State Legislature passed legislation which allowed for the creation of the **St. Tammany Levee, Drainage and Conservation District (STLDLDCD)**. Previously, St. Tammany Parish was bundled into a levee district with the south shore, which included the much larger New Orleans metropolitan area. While on its face, the creation of the

STLDLDCD may seem to act counter to the notion of regional coordination, this action was in fact a necessary step for the Parish to focus and prioritize critical measures for protecting its citizens and assets. The creation of the STLDLDCD will allow the Parish to manage, implement and regulate its future in terms of flood control measures and initiatives.

Coastal Protection and Restoration Initiatives - The Parish has partnered with the Coastal Protection and Restoration Authority to complete the following projects: (1) **Madisonville Bulkhead Project** – Engineering and design for construction improvements to existing bulkhead along the shore of Lake Pontchartrain and the Tchefuncte River at the Madisonville Marina at a total cost of \$2.1 billion (funded via US Fish and Wildlife Coastal Impact Assistance Program (CIAP)); (2) **St Tammany Parish Watershed Management Study** – Engineering and design for an assessment of natural water resource features in the Parish and their interactions with existing man-made infrastructure for water resource management. This will yield a comprehensive understanding of the water management system and the dynamics between its various natural and man-made components. The study would then be used to evaluate project and/or program priorities within the whole system (estimated total cost of \$1.3 million funded via CIAP); (3) **Goose Point/Point Platte Marsh Creation** – Engineering and design to create about 437 acres of marsh and nourish about 114 acres of degraded marsh along the northern shoreline of Lake Pontchartrain (estimated total cost \$22.1 million funded via Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA)); (3) **Bayou Bonfouca Marsh Creation** – Engineering and design for the restoration and nourishment of approximately 621 acres of interior marsh and reestablish the lake rim shoreline (estimated total cost of \$29.2 million funded via (CWPPRA)); and (4) **North Shore Hurricane/Flood Protection and Restoration Plan** –

Engineering and design for the development of a hurricane protection plan and design for certain segments on the North Shore (estimated total cost of \$1.2 million funded via State of Louisiana).

ii. Actions Taken since NOFA Publication

- Storm water ordinances and establishment of watershed management program
- Finished hazard mitigation plan and had it approved
- Bought southeast hospital in June
- Governance structure that include multidepartment cooperation to assist parish in implementing resilience values in all projects- formalize

iii. Actions to Be Taken within One Year of Award Announcements

- Master plan for Safe Haven
- Master plan for NSRP Implement Watershed Management Program
- Training through NTCC
- Begin construction on W-15
- Bid out Bayou Bonfouca/Northshore Beach
- Establish Parish-wide resilience task force

II. COMMITMENT CATEGORIES

i. Lessons Learned from Developing/Implementing Proposal

The NDRC process has led the Parish to look at project development and implementation through a more holistic lens. By collaborating regionally and incorporating

various engaged partners the Parish has realized its ability to have stronger and longer impacts that can be used as models to meet needs throughout the area.

ii. Legislative Actions

- Revisions to ordinances to implement WMP
- Adopt budget to reflect resilience projects

Attachment D Citizen Participation and Consultation Summary Chart

Agency Name or Stakeholder Group (if applicable)	Agency Type - Target Population (If applicable)	Type of Outreach	- Method of Notification (if applicable) - Materials Provided
North Slidell Revitalization Plan Meeting	Local Advocacy Group	Meeting	Attended Meeting to introduce NDRC
Lake 94.7	Local Radio Station	Radio Show	Ronnie Simpson, Director of Public Information & Intergovernmental Relations, discussed resilience on morning show
Fox 8 News Morning Show	Regional TV Station	TV Show	Parish President discussed resilience on morning show
WWL TV Morning show,	Regional TV Station	TV Show	Parish President discussed resilience on morning show
WWL Radio	Regional Radio Station	Radio Show	Parish President discussed resilience on morning show
Plus Ten A Decade of Resilience	Public Event	Meeting	Hosted resiliency information station table
Slidell Transportation Center Task Force	Local Advocacy Group	Meeting	Attended task force meeting and discussed NDRC
Councilwoman Michele Blanchard's Community Meeting	District 13/Slidell	Meeting	Attended community meeting and discussed NDRC
WBOK Radio, <i>The Good Morning Show</i>	Local Radio Station	Radio Show	- Parish President Pat Brister discussed NDRC
The Lake 94.7	Local Radio Station	Radio Show	Amy Bouton, Public Information Officer, discussed NDRC
District 9 Community Meeting	Community Meeting	Meeting	Attended meeting and Presented NDRC concepts
Water Quality Task Force Meeting	Lake Pontchartrain Basin Foundation	Meeting	Attended meeting and Presented NDRC concepts
Residents and Stakeholders of St. Tammany Parish	Entire Parish population	Survey	NDRC survey posted on parish website www.stpgov.org
Residents and Stakeholders of St. Tammany Parish	Entire Parish population	website	www.stpgov.org used as resource to education public on NDRC
GCR, Inc.	Private consulting firm	Application Draft Partner	Phone, email, in-person meetings

Building Resilience Workshop	Regional stakeholder	Meeting/Panel discussion	Resilience and partnership discussion and presentations
Facebook	Social Media Outlet	Social Media Call to Action	Social Media Post with link to Input Card on Web
twitter	Social Media Outlet	Social Media Call to Action	Social Media Post with link to Input Card on Web
Council on Aging St. Tammany	Senior Citizens	Meeting	Jeanne Betbeze attended meeting (get Date From Jeanne)
St. Tammany Parish Mosquito Abatement	Mosquito Management Agency	Email blast	NDRC survey
New Orleans Bicycle Club	Athletic Training Group	Email/Social Media	Contacted President and Outreach Coordinator by email
Coastal Residents	Lakefront Residents	Personal Discussion	Word of Mouth Discussion with residents
St. Tammany Parish Government Employees	Parish Government Employees	E-blast	Internal Email blasts with call to action
Varsity Running Group	Runners	Email/Phone	Email blast and social media posts
Northshore Technical Community College (NTCC)	Educational Institution	Personal Meeting	Jeanne Betbeze and Gina Campo (Talk with Gina And Jeanne)
15 th Street Flyers Club	Runners	Email/Phone	Email blast and social media posts
GNO Tri	Runners/Swimmers/Bikers	Email	Email Blasts and Social Media Posts

Attachment F Benefit Cost Analysis Narrative

I. BCA PREPARATION PROCESS

BCA DEVELOPMENT TEAM	
Name	Affiliation
Jeanne Betbeze	St. Tammany Parish Government
Gina Campo	St. Tammany Parish Government
Elizabeth A. Warren	St. Tammany Parish Government
Amy Bouton	St. Tammany Parish Government
Ronnie Simpson	St. Tammany Parish Government
Erin Stair	St. Tammany Parish Government
Christie Eastman	St. Tammany Parish Government
Joseph Guillory	Duplantis Design Group
Tommy Buckel	Duplantis Design Group
Dayton Crites	Design Workshop
Connors Ladner	Design Workshop
Ted Guillot	GCR
Ella Camburnbeck	GCR

The BCA development process began with GCR developing a BCA inputs guidance tool to gather and track data sources as they applied to each project activity. The tool prompted the team to determine the following:

1. Process for preparing BCA
2. Full proposal cost

- a. Sources: federal, state, local, and private funding
 - b. Expected operation and maintenance costs
 - c. Functionally or geographically related work
3. Current situation and problem to be solved
- a. Quantified impacts of qualifying disaster
 - b. Existing risk from potential hazards and climate change
 - c. Existing social conditions and challenges
 - i. What specific populations are vulnerable
 - d. Environmental conditions
 - i. Air and water quality
 - ii. Land-use patterns and habitats
 - iii. Environmentally sensitive areas
 - e. How trends in land use, housing development, affordability and employment affect disaster recovery or risks outlined above?
4. Proposed project or program
- a. Key proposal objectives
 - i. All individual activities (relate geographically, functionally or logically)
 - b. Design philosophy
 - c. Geographic boundaries and/or service areas
 - d. Main components of the proposal and their interaction
 - e. Anticipated changes to local policies
 - f. Timeline for completion of full project and each component
 - g. Estimated useful life of the proposal

- h. Alternative discount rates and justification
5. Description of risk to community if proposal and any land use, zoning or building code changes are not implemented (cite data and sources)
- a. For full proposal and each component, what would happen 5, 20, and 50 years from now?
 - b. Impact on community as a whole and vulnerable lower income populations
 - c. If multiple components, are there additive benefits or impacts that will not be realized?
 - d. Areas of concentrated poverty that will remain impacted
 - e. Estimate costs avoided if similar disaster struck again
 - f. How development will be done differently if proposal is implemented?
6. List of Benefits and Costs of Proposal and Rationale
- a. Lifecycle costs
 - b. Resilience value (protection from future/repeat disasters)
 - c. Environmental value
 - d. Social value
 - e. Economic value

The team then initiated a series of working sessions to, as a team, to apply the tool to each project activity. The team explored possible inputs that would address each value point, sample metrics that could quantify that input and finally the availability of required data.

These input concepts were then researched and developed using a process that was ultimately tailored to meet the specific needs of each project. Initially, a universal template of

potential BCA metrics was created, using previously existing Analyses as a guide. Broad categories, including Parks and Recreation, Green Infrastructure, Road Improvements and Flood Protection were a starting point, and a series of potential metrics were brainstormed and entered into a spreadsheet as a research guide. Using this resource as a base, research was undertaken to find additional metrics and develop appropriate formulas to calculate precise cost benefits. The first step was to look at the methodology used in existing Benefit Cost Analysis and Economic Benefit Analysis, with particular emphasis with those created to fulfill requirements for FEMA and HUD funding processes. In many cases, there was direct correlation between these existing projects and those under development, and, as they were created to fulfill similar requirements, analogous or identical metrics and formulas were able to be used. When corresponding formulas and metrics were not present, research expanded to include other reliable sources, including reports and supplemental material released by U.S. Government departments and agencies; scholarly, peer-reviewed articles; and reports commissioned by City and State municipalities. To ensure uniformity, only material created in the US was reviewed.

Once the universal template was built out, project specific research and development began. In many instances, cost benefits were able to be calculated using existing metrics, however some required additional research. Again the first step was to see if the data or process had already been created, or a specific figure calculated. FEMA tools, such as the ‘Consideration of Environmental Benefits in the Evaluation of Acquisition Projects under the Hazard Mitigation Assistance (HMA) Programs’, and the ‘Benefit Cost Analysis Re-engineering Development of Standard Economic Values’ were crucial in providing formulas and figures for otherwise difficult to monetize benefits. When additional inputs were needed, for example, the

amount of carbon sequestered per tree per year, further research was undertaken, and all data was checked against at least one additional source to ensure accuracy.

II. PROPOSAL COST

Cost Proposal Summary

Project Components	Funding Sources					
	Local	State	Federal*	Private	NDRC	Total
Fritchie Marsh Hydrologic Restoration						
Phase I: Planning & Design	\$200,000		\$270,000		\$728,000	\$ 1,198,000
Phase II: Construction	\$2,215,187				\$1,404,813	\$ 3,620,000
Functional Improvements			\$3,788,250		\$4,075,250	\$ 7,863,500
Subtotals =	\$2,415,187	\$ -	\$4,058,250	\$ -	\$6,208,063	\$ 12,681,500
Functional Stormwater Management Areas						
French Branch						\$ 11,261,952
Ben Thomas Road	\$100,00				\$6,947,941	\$ 7,047,941
Bayou Bonfouca						\$ 37,796,968
Robert Road						\$ 5,593,293
W-14/West Diversion						\$ 3,261,135
Fremaux						\$ 5,977,060
Subtotals =	\$100,000	\$ -	\$ -	\$ -	\$6,947,941	\$ 70,938,350

Environmental & Recreational Enhancements						
Habitat Preservation						\$ 2,500,000
Neighborhood Parks						\$ 1,475,000
Urban Park						\$ 3,100,000
Landscape Restoration						\$ 200,000
Neighborhood Amenity Projects						\$ 250,000
Greenway Improvements						\$ 10,950,000
Subtotals =	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 18,475,000
Safe Haven Behavioral Health						
Phase I: Planning & Design					\$172,500	\$172,500
Phase II: Land Acquisition	\$6,500,000				\$975,000	\$7,475,000
Phase III: Construction	\$3,156,000				\$577,632	\$3,733,632
Subtotals =	\$9,656,000	\$ -	\$ -	\$ -	\$1,725,132	\$ 11,381,132
Unified Development Code						
Code Development						\$750,000
Subtotals =	\$ -	\$ -	\$ -	\$ -	\$ -	\$750,000

Totals =	\$12,171,187	\$ -	\$4,058,250	\$ -	\$14,908,136	\$ 102,844,850
-----------------	--------------	------	-------------	------	--------------	----------------

*Non-NDRC Federal Funding

III. PROJECT CONTEXT AND CURRENT SITUATION

Summary of Disaster Impacts

St. Tammany has been impacted by five major named hurricanes over the last ten years – Katrina and Rita in 2005, Gustav and Ike in 2008, and Isaac in 2012 (the Qualified Disaster). Damage from Hurricane Isaac was substantial, and its impact was particularly tragic to a community still recovering, economically and physically, from previous storms.

Hurricane Isaac made landfall on the Gulf Coast of Louisiana on August 28, 2012 and remained over Southeast Louisiana for three days with winds of 80 mph whose reach extended over 200 miles. The slow moving storm produced unprecedented amounts of rainfall (61 year event in East St. Tammany/100 year event in West St. Tammany) causing significant flooding throughout the Parish, specifically in the low lying areas of Slidell. Power outages, debris covered streets, and business closures lasted weeks as a result of the inability to drain floodwaters caused by extraordinary amounts of rainfall.

Existing Vulnerabilities

The unfortunate truth of living along the Gulf Coast is that some degree of tropical flooding is inevitable; however, this is the way of life and culture we know. These coastal communities are familiar with the evacuations that are necessary when storms enter the area. The hope is that the storm comes and goes and that all return to a normal life. Storm surges seen during Hurricane Isaac were 9.0' just south of the Fritchie Marsh, at the Rigolets Pass gage. The time required for water levels to reside were lengthened by the fact that all water that enters

the system by overtopping Hwy 90 had to leave through the limited channel network of the Fritchie Marsh. The restoration of the Fritchie Marsh's hydraulic capabilities, as would be performed in our project, would not only provide the necessary fresh water, nutrients, and restore the hydrologic ecosystem but would also decrease the time it takes for flood waters to reside which would help to decrease damages and shorten the time people are away from their homes during storm events.

Housing - The Federal Emergency Management Agency (FEMA) conducted an assessment of homes damaged during Hurricane Isaac in 2012. The assessment revealed 3,812 owner occupied households with damage, and 1,472 renter households with damage within St. Tammany Parish (STP 2013 Action Plan). According to the National Flood Insurance Program (NFIP), there are 1,358 insured properties that filed flood claims for Hurricane Isaac. St. Tammany Parish Government (STPG) did not allocate Hurricane Isaac CDBG-DR funding for a recovery housing program. STPG has utilized over \$30 million from both the Hazard Mitigation Grant Program (HMGP) and Flood Mitigation Assistance (FMA) toward eliminating or drastically reducing future flood claims to residences throughout the Parish. Furthermore, FEMA approved \$6,734,674 in housing assistance to renters, and \$8,708,405 to homeowners for Hurricane Isaac.

Despite significant Federal and private investment in repairing homes damaged by Hurricane Isaac, there is a desperate need to provide long term increased security to the homes within the community. As the parishes first line of natural defense against storms, as long as Fritchie Marsh remains weak and unrestored all homes within the Slidell area, no matter their level of repair or elevation since previous disasters, remain vulnerable. Furthermore, inadequate conveyance within critical drainage systems such as the W-14 leave homes at persistent risk of flooding.

Infrastructure - Public infrastructure damage caused by Hurricane Isaac included water control facilities, roads, bridges, and levees. STPG has made significant progress in addressing damage caused by Hurricane Isaac and previous federally declared disasters. As of 2013, the Parish had 29 infrastructure projects underway using Isaac and pre-Isaac CDBG-DR funds, 125 projects in planning stages, and 36 completed infrastructure projects (including drainage, levee repairs, roads, water and sewer repair, and conservation). Despite this progress, the Parish still faces unmet infrastructure recovery needs caused by Hurricane Isaac. The Parish sustained damage to the Drainage District No. 2 Lakefront Pump Station and Levee Segments 1 and 3B in Slidell. The project costs for replacing these two critical pieces of infrastructure are \$520,000 for the Lakefront Pump Station and \$67,019 for Levee Segments 1 and 3B, for a total of \$587,019. Total replacement costs exceed the amount of funding available. To date, \$22,678 in FEMA Public Assistance has been allocated to Slidell Levee Segments 1 and 3B. A total of \$163,875 in FEMA Public Assistance has been allocated to Drainage District No. 2's Lakefront Pump Station. Therefore, the total unmet infrastructure needed for both Lakefront Pump Station and Levee Segments 1 and 3B is \$400,466.46. See [Dropbox folder](#) for certifications from Paul Carroll P.E.

Economic Revitalization - The economic impact from Hurricane Isaac consisted of flood and structural damage to businesses, loss of inventory, and business interruption (i.e. revenue loss) due to road closures and power outages. Since the Parish relies on sales tax revenue for operations and capital projects, the economic damage caused by Hurricane Isaac impacted the Parish's ability to recover and rebuild. Parish staff surveyed small businesses in the most heavily impacted areas (i.e. the cities of Slidell and Mandeville and the Town of Madisonville). A total of 52 business owners were contacted to discuss remaining repair and mitigation needs, as well

as continued loss of revenue as a result of Hurricane Isaac. Five of the fifty-two business owners have certified that remaining damages and/or mitigation needs are a result of Hurricane Isaac and they have inadequate resources to complete the needed repairs or mitigation measures. Based on the surveys ([see Dropbox folder](#)), local businesses received funding from various sources, both private and public, including insurance companies. The total amount of funding received by area businesses in total is still being determined; however, based on discussions with business owners, the Parish has confirmed that there are remaining recovery and mitigation needs.

General Environmental Conditions

At approximately 850 square miles, St. Tammany Parish is one of the largest parishes in Louisiana. More than half of the land in St. Tammany is designated as wetlands, with three rivers and several more substantial bayous located in a watershed that drains 65% of the Parish into Lake Pontchartrain and the remaining 35% into the Pearl River watershed along the Mississippi State border. The geography and topography of St. Tammany dictates the need for smart and strategic planning for the vast growth and development currently experienced by the Parish and predicted for the future. St. Tammany Parish is vulnerable to natural disasters due to increasing loss of coastline and marshland. As a result of its location along Lake Pontchartrain and proximate to the Gulf of Mexico, repetitive events have impacted St. Tammany Parish. The sustained damage from Hurricane Isaac exacerbated loss to wetlands, land, and environmental protections from previous storms. The environmental damage from Hurricane Isaac has not fully

been addressed and it will take significant resources to fully recover and create additional resilience for St. Tammany Parish.

One area that has sustained major impacts is the Fritchie Marsh, an area of intermediate to brackish marsh near the City of Slidell. The marsh is approximately 6,291 acres in size and bounded on the east by Highway 90, on the south and west by Highway 433 and on the north by portions of the W-14 canal, as well as developed and undeveloped land below Slidell. For an approaching storm, Fritchie Marsh is the final land mass before reaching the residents of Slidell. The marsh is comprised of US Fish and Wildlife Service property as well as privately owned land. Both the W-14 and W-15 canals, as well as part of the Pearl River, via Salt Bayou, drain into the Fritchie Marsh. The Fritchie Marsh provides many environmental and storm protection benefits for lower St. Tammany Parish and, as such, the Parish believes protecting this area is of vital importance. According to an analysis prepared by GCR Inc. ([see Dropbox folder](#)), Fritchie Marsh lost approximately 273 acres of land from 2010 to 2012, largely due to Hurricane Isaac. The State's Coastal Restoration and Protection Authority has also deemed the Fritchie Marsh as an essential area for protection and has included the marsh creation project in its Coastal Master Plan.

IV. PROPOSED PROJECT DESCRIPTION

STRENGTHEN DEVELOPED AREAS

In order to fully address the unmet needs of the Slidell area, direct protection to homes in the face of flooding events must be provided by strengthening environmental defenses. However, the goal of Resilient St. Tammany is to not only improve community safety but also encourage

overall behavioral health and wellness amongst its citizens, increasing mental and physical strength. To this effect, **Layer Strengthen** proposes 7 green infrastructure projects that will upgrade storm water infrastructure, create water quality benefits, and incorporate recreational and community improvements parish wide.

Detention Ponds

First, resilient St. Tammany proposes a series of six detention ponds layered throughout the Slidell watershed. During past tropical storm events the overland storm surge has not yet reach the locations where detention ponds are proposed; however, the elevated water surface elevation in the receiving basin has prevented water from draining out to the lake. The proposed series of ponds will provide approximately 1,480 acre-ft of storm water storage or enough water to cover 2.3 square miles in 1 foot of water. This amount of volume added to the basin and target area will provide a significant amount of stormwater storage to the basin.

Canal Conveyance

As the ponds store water within Slidell, major drainage canals W-14 and W-15 serve as vital organs for moving water through both incorporated and unincorporated portions of the City of Slidell. Based on the results of detailed watershed basin models by the Parish, its partners, and the Army Corps of Engineers, STPG proposes to increase capacity of these canals. This activity, in conjunction with the aforementioned detention ponds, will diminish the risk of flooding in densely populated areas of the City. Furthermore, improving conveyance in both the W-14 and W-15 will improve the rate of water flowing through Slidell into the Fritchie Marsh, located at the Southern point of the Parish, as storm waters subside.

Trail Improvements

To compliment environmental strength with strength of community, Resilient St. Tammany will expand the purpose and value of critical infrastructure by incorporating recreational and community enhancements. STPG is well versed in creating and valuing successful, sought after environmental amenities. In 1992 St. Tammany Parish purchased the abandoned Illinois Central Railroad corridor and transformed it into the 31-mile Tammany Trace (commonly referred to as, “The Trace”). It is Louisiana’s first and only rails-to-trails conversion and the first Louisiana trail under the Rails-Trail Network. Considered to be one of Louisiana’s premier recreational amenities, The Trace is a bicycle and pedestrian path. Furthermore, it connects the five (5) St. Tammany Parish cities of Covington, Abita Springs, Mandeville, Lacombe, and Slidell. The Trace is a popular recreation, transportation, educational and wildlife conservation corridor, linking isolated parks, creating greenways, and preserving historic landmarks and wetlands. Resilient St. Tammany proposes to install a nine mile extension of the well trafficked Trace from Northshore Boulevard via Camp Salmen to Fremaux Town Centre. This addition will bring the rural trail in to the heart of the city of Slidell, create healthy connectivity and ensure all community members have access to jobs and services. The trace will also link to proposed access paths on top of the W-14 and W15 canal improvements. Canals, unseen and uncelebrated will be converted into celebrated recreational amenities that provide new transportation routes to communities throughout Slidell, connecting to parks and community centers while promoting health and wellness by providing opportunities for active transportation and recreation.

Neighborhood Amenity Projects

The vast majority of the storm damaged properties currently owned by the Parish are in suburban or semi-suburban contexts. These are parcels smaller than a quarter acre located in

neighborhoods where the majority of homes are occupied and the neighborhood vibrant. As indicated in the St. Tammany Culture, Recreation and Tourism Strategic Plan (p.45, 57, appendix) these properties can benefit and be cared for by the local neighborhood. Thus, Resilient St. Tammany proposes to restore these areas as orchards, community gardens, playgrounds, or simple shaded lawns, dependent on the feedback of each neighborhood. Properties with these retrofits will be able to store stormwater, decreasing flood risks, while providing high quality neighborhood amenities at little expense to the Parish.

Landscape Restoration

The St. Tammany Parish Culture, Recreation and Tourism Plan also provides a detailed regional GIS analysis which indicates the best future use for many Parish-owned mitigated properties is to restore them. Thus, through infrastructure removal, minor re-grading and restoration of native plant life proposed by Resilient St. Tammany, these properties can serve educational purposes, while simultaneously detaining and collect stormwater.

Neighborhood Parks

A few properties identified in the St. Tammany Parish Culture, Recreation and Tourism Plan were identified as ideal neighborhood parks (p.44, appendix). Specifically, Resilient St. Tammany will construct Ben Thomas Park and Hiawatha Park. These moderate sized parks will offer dedicated recreation facilities to the surrounding community while offering additional benefits by preserving impervious cover while detaining and cleaning stormwater runoff.

Habitat Preservation

Natural habitat preservation of a site serves multiple purposes towards promoting resilience. Through maintenance of undeveloped hydrology, local water bodies are cleaned and

runoff slowed as it passes through the site. In addition to providing educational opportunities and screening urbanized uses from view, native landscape preservation can ensure land does not urbanize and exacerbate flooding concerns in the watershed.

EMBRACE THE COAST

The ability of Louisiana's coastal marshes to suppress storm surge is widely accepted, however, the amount of suppression is a matter of debate. One of the first publications on this issue was in 1963 by the United States Army Corps of Engineers (USACE) which reported that every 2.7 miles of marsh land reduces 1 foot of storm surge (USACE, 1963). Since then, there have been many publications citing a wide range of values, proving that calculating the value of coastal marsh is a complicated task. Factors impacting this value include storm size, intensity, direction and speed, as well as vegetation and topography of the area. One thing that is not debated is that the conversion of coastal marsh land into open water increases the risk of flooding in coastal communities. In order to Embrace its coastal identity, STPG is to restore the Fritchie Marsh as a first line of defense against coastal erosion.

Fritchie Marsh Structural and Hydrologic Restoration

The Fritchie Marsh is an area of intermediate to brackish marsh near Slidell, La that provides both environmental and storm protection benefits to lower St. Tammany Parish. The Fritchie Marsh is approximately 6,291 acres in size and bound to the east by Highway 90, to the south and west by Highway 433 and to the north by Apple Pie Ridge Road and Hwy 190. The area contains the lower portion of the W-14 canal and Doubloon Bayou, as well as developed and undeveloped land south of the city of Slidell. It is the final land mass protecting the residents of Slidell from an approaching tropical storm. According to an analysis prepared by GCR Inc.,

the Fritchie marsh lost approximately 273 acres of land from 2010 through 2012, largely due to Hurricane Isaac. The preservation/restoration of the Fritchie Marsh has been identified as being crucial to protecting the surrounding area from flooding. The Coastal Wetland Planning Protection and Restoration Act (CWPPRA), the USACE, and St. Tammany parish are all working on marsh creation projects in the marsh. However, without a large scale hydrologic restoration of the area, the rebuilt marsh will not reach its full potential.

The unfortunate truth of living along the Gulf Coast is that some degree of tropical flooding is inevitable; however, this is the way of life and culture we know. These coastal communities are familiar with the evacuations that are necessary when storms enter the area. The hope is that the storm comes and goes and that all return to a normal life. Storm surges seen during Hurricane Isaac were 9.0' just south of the Fritchie Marsh, at the Rigolets Pass gage. The time required for water levels to reside were lengthened by the fact that all water that enters the system by overtopping Hwy 90 had to leave through the limited channel network of the Fritchie Marsh. The restoration of the Fritchie Marsh's hydraulic capabilities, as will be performed in this project, would not only provide the necessary fresh water, nutrients, and restore the hydrologic ecosystem but will also decrease the time it takes for flood waters to reside which will help to decrease damages and shorten the time people are away from their homes during storm events.

TRANSFORM DEVELOPMENT AND GROWTH

Strengthening community and embracing the realities of coast and climate require transformation in thinking and a focus on long term social resilience growth for generations to come. **Layer Transform** proposes Safe Haven, a mental health facility for St. Tammany and the surrounding region.

Safe Haven

Because of the growing mental health care crisis within St. Tammany Parish, leaders, officials, non-profits and residents have consistently sought new, proactive approaches to the provision of behavioral health care within the parish. The St. Tammany Parish Behavioral Health Task Force (“Task Force”) currently exists as a collaboration between government, law enforcement, education, judicial, healthcare and non-profit leaders created under a common goal to create sustainability and results in the provision of local behavioral health services. The task force sought the help of the Louisiana Public Health Institute to assess the current behavioral health situation within the parish and provide recommendations for the future. In its report, the Louisiana Public Health Institute outlined the continued problems associated with the provision of behavioral health services within St. Tammany Parish. (A copy of the Louisiana Public Health Institute Report is attached as Exhibit “A”).

In 2012, State officials announced major cuts in Medicaid funding and the closure of a well-used mental healthcare facility in Mandeville, Louisiana. By working with the state, parish administration was able to help keep the hospital open to continue to serve citizens of St. Tammany Parish. Moreover, the state’s plan called for St. Tammany Parish Government to acquire the hospital campus consisting of approximately 293 acres in exchange for \$15.5 million dollars. While the hospital remained open under a new operator (Northlake Behavioral Health System), St. Tammany Parish Government officially became the owner of the hospital and the surrounding land in March 2015.

Because of the unique opportunity to acquire such a large parcel of land, parish officials began to determine a variety of public needs which the site could address. After careful planning

and consideration, parish administration decided that the 293 acres would be subdivided into four parcels with four different purposes:

- 99 Acres - The parish will surplus and sell this portion of land to Recreation District Number 1, who will develop the land in order to improve facilities and services at its well-used Pelican Park.
- 75 Acres - This portion will become a parish-owned wetlands mitigation bank. Just as private developers must mitigate impacts to wetlands and floodplains from new development, local governments are required to address the same issues. With its own wetlands mitigation bank, St. Tammany Parish Government will be able to save certain costs associated with wetlands mitigation while preserving a large area as green space for future generations to enjoy.
- 45 Acres - The portion containing the northern hospital facilities itself will eventually be sold or leased to a private behavioral health provider offering services complimentary to the Safe Haven concept.
- 74 Acres – The southern 74 acres of the acreage will serve as the location for Safe Haven.

Within the southern portion of the hospital campus, there are currently a variety of partners and stakeholders already using some of the facilities. Organizations like the Florida Parishes Human Services Authority, the National Alliance on Mental Illness (NAMI) and the St. Tammany Parish School Board are utilizing the southern portion of the campus referred to as the “Quad” and the group homes. For example, NAMI runs a residential community which provides 24-hour care in a group home setting. The Safe Haven campus and programs will draw on the

existing uses present at the site and help to implement the full continuum of care desired by the parish. There is currently 62,000 square feet of vacant space in the Quad that is ready for additional programming for an improved behavioral health care system in St. Tammany Parish.

Resilient St. Tammany seeks to develop a phased implementation strategy for the Safe Haven campus. Safe Haven will serve as a comprehensive, multi-faceted program on the campus of the former Southeast Louisiana State Hospital which will provide a full continuum of care for those suffering with behavioral health illness within the parish. The parish intends to devise a phased implementation strategy starting with existing 62,000 square feet of space that is currently vacant on the hospital campus. The vision for Safe Haven is to serve as a single “point of entry” into the behavioral health continuum of care for law enforcement, the judiciary and local area hospitals while continuing current programs provided by behavioral health entities and non-profits as well as sharing common resources. Moreover, Safe Haven will provide on-site services for persons with behavioral health disorders. These services will include, but not be limited to: training and education, job seeking, resume building, job coaching, interview skills, application assistance for Medicaid and Medicare, legal services and permanent housing.

A primary goal of Safe Haven is the provision of behavioral health treatment to individuals before their problems worsen. Moreover, Safe Haven will act as a jail diversion program for non-violent offenders who may need behavioral health treatment instead of jail time. The process of jail diversion typically begins at the “point of diversion,” or the point where a law enforcement officer first encounters a behavioral health sufferer.

Unified Development Code

Finally, to ensure all transformations are permanent and become the new status-quo of how, where, and why the parish decides to develop and as part of its continued response the inevitable population migration moving towards the Parish, St. Tammany has initiated the process of developing a Unified Development Code (UDC). This process will result in a streamlined, organized development process that is

- Simple, flexible, and easily administered by staff;
- “User-friendly”, easy to read, understand and interpret for all users, staff, developers, and elected and appointed officials;
- Heavily illustrated, with considerable graphics depicting the requirements, recommendations and concepts detailed in the code;
- Flexible to allow for streamlining of the development review process;
- Conducive to development and redevelopment, particularly in targeted areas, including Economic Development Districts and major growth corridors;
- Consistent with the community’s planning and development goals, including resiliency program;
- Built upon the best planning and engineering principles and practices.

The UDC will:

- Eliminate inconsistencies between code provisions;
- Ensure that recommended regulation changes are in compliance with all federal, state and local laws and requirements;
- Incorporate regulation changes that address Parish resiliency programs and priorities;

- Consider input from developers and Parish residents gathered during an aggressive public outreach process
- Include best practices with respect to residential and commercial drainage reviews and recommendations with respect to implementation of the Parish's Watershed Study recommendations.

Key Objectives

reSET

While all of the proposed activities provide value, none is as affective without the others working with it in tandem.

The improved hydraulics of the Fritchie, detention capabilities of the ponds, improved conveyance, and the integrated network of parks, habitats, and restored landscapes will have benefits in common place riverine flooding also well as disaster level events. Both the French Branch Detention pond and the Ben Thomas Detention Pond, currently in the design process, will b produce a little more than a foot of improvements in water surface elevation in a 100 year storm event within the target area downstream of the respective ponds. Improvements in the Fritchie Marsh along with marsh restoration projects and hydraulic restoration should help to reduce those values even further.

These projects offer great protection of the required 50 year design life. What's more, once improved water flow through the marsh is restored as a result of the W-14 and W-15 work and watershed enhancements, Fritchie Marsh will continue to vegetate and re-store land building functions restoring its self-sustaining nature. Although minimal, mineral deposits are present in fresh water which will add to the land building capability; furthermore, the biomass production

fostered by the fresh water will help with vertical accretion of a marsh habitat that is currently threatened. This suite of improvements will allow the Slidell area to return to a normal life more rapidly following a tropical storm events such as Hurricane Isaac. Due to limited maintenance requirement, these project will continue to improve protect the area while restoring the habitat of the coastal marsh that protects the people living in this coastal community.

Resilient St. Tammany then layers a strong sense of security with a strong sense of place. The Trace extension and trail incorporation along W-14 and W-15 create incredible opportunities for physical wellness and connectivity throughout Slidell along with an educational connection to the watershed—resulting in attractive amenities, increased physical health, and deeper understanding of our coastal environment.

Construction of Safe Haven rounds out the Resilient St. Tammany approach by ensuring that all citizens can not only realize environmental and physical strength but mental strength as well. By committing to address regional mental health issues, Resilient St. Tammany is preparing the Parish to not only care for its own community at every level but also to receive and incorporate new communities holistically and effectively. The Unified Development Code will unite all of these approaches and make them standards throughout the Parish. **RESILIENT ST. TAMMANY** is positioned to set (**S**trengthen, **E**mbrace, **T**ransform) the standard for resilience. As a leader in resilience, St. Tammany is positioned to not only address remaining local recovery needs but also to serve as a leader in Louisiana’s overall strategy for increasing disaster preparedness and resilience

Design Philosophy

RESILIENT ST. TAMMANY (RST) embraces the certain global impacts of climate change and sea level rise, strengthens infrastructure for a rapidly growing population, and transforms the mechanisms and management of our natural environment while preserving our world renowned cultures, communities, and industries. St. Tammany Parish, a regional partner in the Louisiana Safe initiative, will set the standard for resilience nationally as a leader in addressing and adapting to the realities of water.

St. Tammany Parish is proposing a multi-layered approach to resilience including revised development standards that encompasses a synergy of retrofit green infrastructure projects and a reconfigured environmental corridor that encompasses projects focused on social resilience and overall community behavioral health and wellness. In addition, St. Tammany is spearheading, with its partners, workforce creation programming that aligns directly with the project initiatives, so that all projects not only protect the citizens but the citizens themselves are instrumental in making it happen.

RESILIENT ST. TAMMANY is positioned to set (**S**trengthen, **E**mbrace, **T**ransform) the standard for resilience. As a leader in resilience, St. Tammany is positioned to not only address remaining local recovery needs but also to serve as a leader in Louisiana's overall strategy for increasing disaster preparedness and resilience. **RESILIENT ST. TAMMANY (RST)** represents a strong diverse economy with innovative development, reinvestment in our natural resources and cultural diversity to preserve and protect the quality of life that makes St. Tammany Parish vibrant and unique.

Geographic Boundaries of Project and Service Areas

Resilient St. Tammany will be modeled in the city of Slidell, Louisiana.

Anticipated Changes to Local Policies

As part of its continued response to recent disasters and in an effort to increase the City's overall resilience, St. Tammany has initiated the process of developing a Unified Development Code (UDC). This process will result in a streamlined, organized development process that firmly dictates how, where and why the Parish develops.

Project Timeline

Due to the high expertise of partners on board many of the activities that comprise Resilient St. Tammany will begin by the first or second quarter of 2016. STP and their partners are also confident that all activities will be complete, functional and able to provide either expected benefits by the second quarter of 2019, at the latest— well within the expenditure deadline per the NOFA.

Estimated Useful Life of Proposal

The BCA was developed using a useful life of between 25 and 50 years, dependent on the nature of the activity within Resilient St. Tammany.

Describe Reasoning around Any Alternative Discount Rate

Resilient St. Tammany is using the 7% discount rate.

V. RISKS IF PROPOSAL IS NOT IMPLEMENTED

Future Risks

Should Resilient St. Tammany not be addressed the inevitable population migration that the area is already experiencing will put a burden on the environment and infrastructure the Parish will not be capable of withstanding.

Community Impacts

Resilient St. Tammany layers a strong sense of security with a strong sense of place. The Trace extension and trail incorporation along W-14 and W-15 create incredible opportunities for physical wellness and connectivity throughout Slidell along with an educational connection to the watershed—resulting in attractive amenities, increased physical health, and deeper understanding of our coastal environment.

Construction of Safe Haven rounds out the Resilient St. Tammany approach by ensuring that all citizens can not only realize environmental and physical strength but mental strength as well. By committing to address regional mental health issues, Resilient St. Tammany is preparing the Parish to not only care for its own community at every level but also to receive and incorporate new communities holistically and effectively.

The Unified Development Code will unite all of these approaches and make them standards throughout the Parish.

Additive Benefits

Enhanced quality of life is sometimes a difficult thing to quantify however it is a critical factor in why people choose to settle and commit in a place. The environmental amenities and the Trace extension proposed by Resilient St. Tammany will make this already sought after community even more appealing.

Risks to Highly Impoverished Areas

The risk of flooding disproportionately affects LMI residents of St. Tammany Parish and more specifically within the City of Slidell. These populations also suffer from advanced health risks due to lack of access to healthcare, exercise and healthy foods. By increasing safety as it relates to flood risks and improving connectivity between the LMI neighborhoods and the needed resources throughout the Slidell area, St. Tammany aims to aid their LMI populations in becoming more resilient.

Avoided Costs

Resilient St. Tammany will greatly decrease flooding risk during future minor and major storm events. Reduced flooding will decrease the cost of response after a storm along with the expenses of cleanup and flood related repair. \

VI. COSTS AND BENEFITS

Benefit Cost Ratio and Net Present Value

Cost/Benefit	Annualized Cost/Benefit	Present Value Cost/Benefit
Life Cycle Costs		
Fritchie Marsh	(\$1,109,122)	(\$15,306,712)
Detention Ponds	(\$3,628,330)	(\$50,073,668)
Environmental and Recreational Enhancements	(\$1,862,474)	(\$21,704,499)
Safe Haven	(\$1,146,065)	(\$13,355,759)
Resilience Value		
Total Resilience Values		\$21,633,199
Environmental Value		
Total Environmental Values		\$152,037,777
Community Development Value		
Total Community Development Values		\$42,182,439
Economic Development Value		
Total Economic Development Values		\$16,675,303

Design Life (yr)	Varies (50 or 25)
Rate (%)	7%

BENEFITS	
Resilience	\$ 21,633,199
Environmental	\$ 152,037,777
Community	\$ 42,182,439
Economic	\$ 16,675,303
Total Benefit	\$ 232,528,718
COSTS	
Life Cycle Costs	\$ 100,440,639
BC Ratio	2.32

VII. RISKS TO ONGOING BENEFITS

Uncertainties

Climate change and sea level rise are two uncertainties that affect the State of Louisiana. STP aims to plan as well as possible in the face of the inevitable unknowns.

Adaptability

St Tammany is initiating a suite of interventions as demonstration projects that can be implemented across the Parish in varying degrees and adapted based on the needs of a specific area. While not every part of St. Tammany Parish interacts with both marsh and lake, each region touches at least one of the two and all areas suffer from overburdened infrastructure as well as the need for connectivity. Resilient St. Tammany will be a model for each drainage region running the length of the Parish, targeting Madisonville, Covington, Abita Springs, Mandeville, and Lacombe. Each town contains drainage canals similar to the W-14 and W-15 that require retrofits. Similarly, each watershed requires the incorporation of detention ponds to manage water inland. Finally, the Trace links each town to one another and can be enhanced through added trails that move in the more developed areas providing improved access and connectivity.

VIII. IMPLEMENTATION CHALLENGES

Political or Stakeholder Risks

STP recognizes that the project and its components are ambitious – both in terms of scale and timeline for implementation. Nevertheless, STP has been strategic in selecting dedicated, committed partners, as well as in collaborating with internal departments, lessening the risk of political or stakeholder challenges.

Technical Risks

While all projects lend themselves to unknowns and alternations, STP is confident in the past success of their partners to research and prepare for any and all challenges that may arise. As a result, STP is confident that any technical encounters will not inhibit the success of Resilient St. Tammany.

Procedural or Legal Risks

STP has a strong legal department that has reviewed all legal documents for compliance. In addition, GCR Inc. is a leading expert on HUD and CDBG procedural compliance and has been enlisted as a partner in order to ensure Resilient St. Tammany is eligible and proposes activities that embody the spirit and the letter of the NDRC requirements.

Community Support for the Proposal

The STPG consultation process involved community outreach and stakeholder meetings that provided an abundance of information, which was shared with internal and external team

members and used to generate the ideas and concepts that formed the overall project approach. The Parish has been transparent during all outreach and engagement efforts with respect to its project approach as well as its target areas and priority initiatives in order to solicit meaningful and relevant feedback from those involved in the meetings and discussions. The input received was used to shape the direction of the application, expand thinking related to unmet needs, risks, and vulnerabilities, and broaden the Parish's perspective regarding how residents and stakeholders perceive resilience.

The comprehensive outreach plan for Phase II of the National Disaster Resilience Competition was designed to engage all citizens in St. Tammany Parish, including those citizens who live areas that have been identified as having one or more of the identified vulnerabilities. This plan included the following objectives:

6. To introduce the vulnerabilities identified in St. Tammany Parish.
7. To encourage citizens to participate in meaningful feedback as it relates to their needs as citizens of St. Tammany.
8. To provide opportunities and an easy platform for participation in the comment phase.
9. To introduce proposed project concepts that will address the vulnerabilities.
10. To provide public updates on the outcome of the competition and the progress of the proposed projects.

Implementation of the plan included: website postings, input cards (both digital and hard copies), presentations throughout the community, radio and television appearances, social media posts, specific outreach to specialty groups, one-on-one outreach to neighboring communities, one-on-one outreach to community stakeholders and word of mouth.

Throughout this process, the goal was to reach every community within St. Tammany Parish, to educate them about the NDRC, to present them with proposed project concepts and identified vulnerabilities, and to ask them to give feedback on these proposed concepts. The www.stpgov.org webpage was utilized to house the National Disaster Resilience Competition (NDRC) comment card. This offered to the general public, a comprehensive explanation of the NDRC competition, as well as a portal to offer commentary through a digital comment card. This webpage was utilized from the beginning of Phase II, (June 25, 2015) and continued until October 8, 2015. There were 136 comment cards entered through this portal.

The NDRC team presented the proposed project concepts to several groups throughout the community. (See Attachment) These presentations included a PowerPoint presentation explaining in detail the identified vulnerabilities in St. Tammany Parish, the ways in which they impact St. Tammany Parish, and the proposed project concepts. Each attendee was given a comment card, and during the presentation, each attendee was walked through the concepts presented on the card, at which time, questions regarding the NDRC, the identified vulnerabilities and the proposed project concepts were addressed.

From the beginning of Phase II, June 25, 2015, team members utilized television, radio and social media to solicit input from members of the community. Eleven separate radio and television appearances over a two-month period, spanning a wide variety of audiences, were utilized to both inform the entire citizenry both within St. Tammany, in surrounding Parishes and in surrounding states, of the NDRC, proposed project concepts, and ways in which they could offer commentary. Discussions were held at length during the interviews to answer any questions

regarding the process, the concepts, the identified vulnerabilities, and any and all other topics surrounding public comment.

Social Media was utilized to reach out to the nearly 9,000 followers of the St. Tammany Parish Facebook Page, as well as the nearly 3,000 St. Tammany Parish Government twitter followers. This effort reached 5,667 people through Facebook, was shared a total of 29 times, and received 200 post clicks. On Twitter, this tweet was seen by 421 twitter users, 17 total engagements, 11 link clicks, five detail expands, and one retweet . We also enlisted five separate groups to share on their social media sites.

Specialty Groups were targeted for input because of the ways in which specific concepts impact their interests. These groups were asked to disseminate the information regarding NDRC to their groups through Social Media, email blasts, and word of mouth. As a result, the information was shared through multiple municipalities, neighboring Parishes, neighboring states, and various communities whose activities often spill over into St. Tammany.

Neighboring communities were contacted through personal phone calls and email correspondence, and asked to offer input on identified vulnerabilities, proposed project concepts and partnership possibilities. Community Stakeholders were contacted to discuss their role in the future of the resilience of St. Tammany. They were also asked to disseminate the information regarding the NDRC and ask their colleagues and neighbors to give feedback on identified vulnerabilities and proposed project concepts.

St. Tammany Parish Government employees were contacted through an internal newsletter. Everyone who was engaged directly through a presentation, radio interview, email,

etc. was asked to spread the word about the NDRC and go to the www.stpgov.org/national-disaster-resilience-competition website to give input.

The outreach campaign generated hearty discussion and the exchange of ideas throughout St. Tammany Parish.

Consultation with Environmental Groups

STP collaborated with environmental advocates and experts to design the Resilient St. Tammany Approach.