FUTURE FLOOD RISK IN PROJECT PLANNING AND DESIGN

Flood risk is neither certain nor static; it is affected over time by changes in land use, climate, and other environmental conditions. To quote Gov. John Bel Edwards following the signing of Executive Order JBE 2018-16, which established the Council on Watershed Management, “Louisiana is no stranger to flooding and severe weather, and people all across Louisiana have suffered tremendous loss as a result. We should advance our commitment to increasing community and regional resilience to flooding by managing, mitigating, and adapting to future flood risk.”

Investments in flood risk management must be made with considerations of possible changes in flood risk over time to ensure that these investments are effective and that benefits last as expected. Catastrophic failures and damages are known to occur when project design levels are exceeded, which is more likely to happen if future conditions aren’t adequately accounted for. For this reason, Round 1 Funding project applicants must demonstrate consideration of how flood levels can change over time in project approach and design.

This document provides how-to guidance to incorporate consideration of future flood risk into project planning for Round 1 Funding applications. Its use will also support Louisiana Watershed Initiative (LWI) application reviewers in evaluating applicants’ consideration of future flood risk, accounting for varying degrees of capacity and capability in data-gathering, staff availability, and skill level amongst applicants.

It is worthwhile to note that as the state progresses toward developing higher statewide standards for data collection and use, the LWI is expected to evolve guidance for the consideration of future flood risk in mitigation action identification and design across all types of flood hazard. In the interim, applicants applying for funding for relevant mitigation actions should demonstrate in their project scope of work how consideration of future flood risk informed project development. This approach should be justified by the applicant based on the needs, criticality, timeframe, and risk tolerance of the project, and be based on best-available, actionable science, as defined by FEMA’s Technical Mapping Advisory Council (TMAC). Suggested sources of best-available, actionable science are provided in the following sections.

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DRIVERS OF FUTURE FLOOD RISK

Applicants whose projects are subject to and/or seek to address coastal, riverine, and/or stormwater flood risk must demonstrate consideration of the following two drivers of future flood risk, in some capacity, as detailed further in the following sections:

1. Climate change impacts (i.e., precipitation, sea level rise)
2. Future development and land use (i.e., impervious surface coverage, flood storage capacity)

Applicants whose projects are subject to and/or seek to address coastal and/or riverine flood risk are also encouraged, but not required, to consider the following driver of future flood risk:

3. Future erosion hazard

Accounting for Uncertainty: A Scenario-Based Approach

Future conditions will not necessarily reflect historical conditions. Uncertainties are inherent in projections of future flood risk conditions in two forms:

1. Inherent uncertainty about future changes in natural systems, including variations in future climatic and atmospheric conditions, precipitation patterns, topographic changes, hydrologic and geomorphic changes in riverine systems, and future tailwater conditions; and manmade systems, such as land use and development and hydraulic changes
2. Inherent uncertainty about the accuracy and completeness of existing models and observations

For this reason, applicants should seek to ensure that they identify and quantify, in some way, the level of accuracy and uncertainty of the data used to project future flood conditions. This may be best ensured by taking a scenario-based approach to determining future flood risk. A deterministic approach uses historical averages and trends to project future conditions. This approach is strongly discouraged, given the high degree of future uncertainty. Instead, the LWI recommends that applicants take a scenario-based approach to considering drivers of future flood risk. Applicants should, at minimum, demonstrate consideration of low, medium, and high future scenarios for each driver of future flood risk relevant to the proposed project (e.g., precipitation, sea level rise, impervious surface coverage). The scenarios chosen must be justifiably based on best-available, actionable science and chosen to be commensurate with the nature and criticality of the project, the timeframe and level of investment of the project, and the risk tolerance of the project.

Figure 1 provides an example of a critical facilities and infrastructure mitigation action subject to and addressing coastal storm-surge-based flooding. The example demonstrates how low, medium, and high scenarios of local relative sea level rise (including rates of land subsidence), based on existing CPRA data, were used to inform project design, with a timeframe commensurate with the project useful life (2100).

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\(^{3}\) FEMA TMAC 2015.

\(^{4}\) Ibid.

\(^{5}\) Ibid.
RECOMMENDATIONS

CLIMATE CHANGE IMPACTS

Depending on the type of flood risk the proposed project seeks to address and/or is subject to, the applicant must incorporate scenarios for future precipitation and/or future sea level rise (including expected future rates of land subsidence to reflect local conditions).

- Projects addressing and/or subject to coastal storm-surge flood risk must consider scenarios of future precipitation and future sea level rise, including subsidence.
- Projects addressing and/or subject to riverine flood risk must consider scenarios of future precipitation. Where applicable (e.g., in estuarine areas or other transition zones), project planning must also demonstrate consideration of relevant impacts of future sea level rise scenarios on riverine flooding, such as impacts on drainage patterns, tailwater conditions, and backwater effects.
- Projects addressing and/or subject to stormwater flood risk must consider scenarios of future precipitation only.

Suggested Approach

For coastal areas, CPRA provides future flood depths for several scenarios, which incorporate future precipitation and sea level rise values (including subsidence), in addition to other inputs such as tropical storm
intensity and frequency. These scenarios are regarded as best-available, actionable science for use by the applicant and can be found on CPRA’s online Master Plan Data Viewer\(^6\) and in CPRA’s 2017 Coastal Master Plan.\(^7\)

Similar models that can be regarded as best-available, actionable science have not yet been developed statewide for the state of Louisiana. In future rounds of funding, the LWI will move toward incorporating new models and best-available, actionable data developed through expert consensus in collaboration with stakeholders in order to further evolve this guidance and ensure consistency in the future. For the purposes of the Round 1 Funding application process, applicants pursuing mitigation actions addressing and/or subject to riverine and/or stormwater flooding may select low, medium, and high future precipitation scenarios using CPRA’s plausible range of values from the 2017 Coastal Master Plan (found in Appendix C: Modeling\(^8\)). These scenarios may be presented as historical precipitation values (found, for example, on NOAA’s Atlas 14 online tool\(^9\)) increased or decreased by specified percentages. The applicant may also extrapolate scenarios based on future carbon emissions and extreme precipitation projections published by other reputable entities, such as the National Climate Assessment\(^10\) (NCA), within reason and with justification. Any applicant selecting from within CPRA’s plausible range of values or extrapolating based on NCA projections should justify how the range of scenarios generated (using low, moderate, less optimistic, and/or high values) adequately reflects the project’s criticality, timeframe, and risk tolerance.

**FUTURE DEVELOPMENT AND LAND USE CHANGE**

Development and land use change can have significant impacts on flood hazard, and projections are known to under-predict actual changes over time.\(^11\) For example, increased use of fill within the floodplain can decrease natural flood storage capacity and increases in impervious surfaces in urban areas can increase stormwater runoff significantly. As the EPA explains, when “impervious surfaces reach 10-20% of local watershed area, surface runoff doubles and continues to increase until, at 100% impervious surface coverage, runoff is five times that of a forested watershed” (EPA 2018).\(^12\) This can seriously impact flood levels over time. For this reason, applicants pursuing mitigation actions addressing and/or subject to coastal, riverine, and/or stormwater flooding are required to demonstrate consideration of the impacts of future development and land use change on future flood risk in project planning and design. Similar to consideration of climate change impacts, this can be achieved by taking a scenario-based approach.

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\(^11\) FEMA TMAC 2015.
\(^12\) EPA. 2018. Envirotiles Fact Sheet: Percent Impervious Area. Available online at: [https://enviroatlas.epa.gov/enviroatlas/datafactsheets/pdf/ESN/PercentImperviousArea.pdf](https://enviroatlas.epa.gov/enviroatlas/datafactsheets/pdf/ESN/PercentImperviousArea.pdf).
**Suggested Approach**

Applicants should, at minimum, demonstrate consideration of **low, medium, and high** future scenarios for the following factor:

a. *Change in impervious surface coverage in the project area.* Project design should demonstrate consideration of potential changes in rainfall/runoff relations that result from each scenario.

Applicants may use one of, or some combination of, the following approaches to determining future scenarios of development and land use change:

1. Use of future land use maps to predict future land use characteristics over the useful life of the project, if available (e.g., in a parish or municipality comprehensive plan)
2. Use of population growth statistics over time and by location as an indicator of future development trends
3. Use of spatial analysis techniques to predict future development patterns based on trends in zoning, permitting, and other factors

It is recommended that the applicant work with a professional engineer to undertake simple hydrologic and hydraulic analysis based on these predictions of future development and land use change in project planning and design.

**FUTURE EROSION HAZARD**

Coastal and riverine erosion can alter flooding patterns due to changing shorelines or channel migration. Nevertheless, existing data on future erosion hazard is sparse. Consideration of the impacts of future patterns of coastal and riverine erosion on flood risk is therefore encouraged, but not expected, for the present round of funding. In extreme cases, it is strongly preferred that the applicant demonstrate consideration of future riverine erosion hazard. Further investigation through the LWI may lead to consensus on best practices and/or best-available, actionable future coastal and riverine erosion data for the state of Louisiana.
Town of Malone Acquisitions
Jackson County, Florida

Parcel ID Map

This map is for reference purposes only. Data was obtained from the Florida Department of Revenue and the US Census Bureau.

Acquisition Parcels selection

Example Parcel Map with Property Identification Number
Example Project Location Map

Project Location 1

Project Location 2
This map is for reference purposes only. Data was obtained from the Florida Department of Revenue and the US Census Bureau.
FIRM FLOOD INSURANCE RATE MAP
JEFFERSON PARISH, LOUISIANA AND INCORPORATED AREAS
PANEL 215 OF 600
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)
CONTAINS:
COMMUNITY NUMBER PANEL SUFFIX
GRETNA CITY OF 22051C 0215 F
JEFFERSON PARISH 220519 0215 F
Notice to User: The Map Number shown below should be used when placing map orders, the Community Number shown above should be used on insurance applications for the subject community.

MAP NUMBER
22051C0215F

MAP REVISED
February 2, 2018

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov
PHOTOGRAPHIC LOG

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LOUISIANA WATERSHED INITIATIVE

Applicant: ___________________  Project Name: ___________________  Project #: __________

Property Address: _______________  Tax Identification No.: ___________________
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1No floodway calculated
2Feet above confluence with Cypress Bayou

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1 No floodway calculated
2 Feet above confluence with Cypress Bayou
FLOODPLAIN RESTORATION AND PRESERVATION

Floodplains are natural, vegetated areas bordering a stream or river that periodically overflow. When the banks are overtopped and the floodplain is inundated, floodwaters are slowed and temporarily stored, then returned to the stream channel, infiltrated, or evaporated as floodwaters recede. This process helps moderate peak stream flows and improves water quality by decreasing pollutant and sediment loads downstream, helps shallow groundwater recharge, and reduces instream erosion and downstream sediment transport. Additionally, floodplains are rich habitat corridors with recreational opportunities.¹

In many urban areas, high discharge runoff from increased impervious surfaces often causes stream channels to become deeper and wider, delivering larger storm flows within the channel banks, and disconnecting from the floodplain. Some agricultural practices can lead to similar issues. The increased conveyance capacity can result in flooding downstream. Levees, parallel roadway embankments, placed fill, and other physical encroachments can have a similar impact, altering floodplain conveyance, peak flows, and increasing flooding problems downstream. Restoring and preserving natural floodplain functions can mitigate these issues.

PLANNING CONSIDERATIONS

Floodplain restoration projects allow for many co-benefits to be integrated into the designs. These could include:

- Restoring function of degraded stream(s)
- Protect existing utilities and infrastructure from actively migrating stream
- Water quality and habitat improvement
- Floodplain filtration and plant uptake
- Reduced instream erosion and sediment transport
- Volume reduction achieved by infiltration and evaporation
- Groundwater recharge
- Aesthetic and recreational features
- Demonstration project/educational opportunities

Key activities along the stream may include:²

- Bar and floodplain grading
- Vegetation plantings/reforestation
- Riprap placement
- Creating side cavities, side channels, or riffles and pools
- Structure removal
- Artificially placed wood/engineered logjams

KEY DESIGN CONSIDERATIONS

When evaluating whether floodplain preservation or restoration will mitigate flooding, a key factor to consider is, “Is the waterway connected to a floodplain or can it be better connected to the floodplain?” Restoring floodplain connectivity must first take place in order to have flood risk reduction benefit.³

Floodplain reconnection can involve multiple techniques of physically re-shaping the floodplain and stream. These include resizing the channel cross-section (changing the width and depth of the stream), raising the stream profile by raising the height of the stream bed, or redirecting the stream to a higher area of the floodplain. Additionally, re-introducing natural meanders can slow stream flow, reconnect to the abandoned floodplain, and allow more frequent overbank flooding where appropriate.

Figure 1. Illustration courtesy of United States Forest Service

Where levees or other features constrict the natural floodplain, removal of these features may be considered to restore the hydraulic connection. Routing of high flows, similar to how flows are redirected to an offline flood storage project, can also be a method of restoring connectivity. Flows can easily be rerouted to adjacent downstream areas that are lower in elevation than the top of the bank, though at times the stream banks may need to be lowered. Additional considerations for these types of projects can be found in the Flood Storage Mitigation Action Sheet (Appendix 2.11.2).

If a stream and riparian buffer is undisturbed and appears to be well connected to its floodplain, actions to preserve the natural state can be taken, such as conservation easements. If the riparian buffer has been converted or degraded, but the stream and floodplain are still hydraulically connected, revegetation and reforestation activities can help restore the natural functions of the floodplain.

Case Study: Mollicy Farms

By removing portions of a 17-mile long levee built in the 1960s, this project reconnected bottomland hardwood forests to the seasonal flooding of the Ouachita River. The Nature Conservancy working with the U.S. Fish and Wildlife Service was planning to artificially breach the levee prior to historic flooding that overtopped the levee in spring 2009. Original plans were adapted, and the natural levee breaches were permanently widened. The partners then worked to restore the natural hydrology of the floodplain, recreating over 25 square miles of wetlands and bayous. The reclaimed historic floodplain again provides valuable fish and wildlife habitat in the hardwood forests as part of the Upper Ouachita National Wildlife Refuge.⁴ In terms of flood risk mitigation, the project lowered the record flood stage of the Ouachita River by one foot.⁵

³Id.
Example Project Evaluation

**PROS**

Benefits to water quality. For example, a project may reduce sedimentation, reduce nutrients and impurities from runoff, process organic wastes, or moderate temperature fluctuations.¹

Benefits to habitat value. For example, a project may add rich alluvial soils to promote vegetative growth, maintain biodiversity, maintain integrity of ecosystems, provide breeding and feeding grounds, create enhanced waterfowl habitat or protect habitats for rare and endangered species.¹

Benefits to natural hydrology. For example, an activity may provide flood storage and conveyance, reduce flood velocities, reduce peak flows, promote infiltration and aquifer recharge or reduce frequency and duration of low surface flows.¹

Enhance active recreational assets

Downstream benefits

Passive and reliable solution

**CONS**

Projects may require land acquisition or approval of private landowners to flood their land.

Projects may require significant planning, engineering design, permitting, and construction, which may lead to high costs.

Projects may require coordination with FEMA and submittal of Conditional Letter of Map Revision and Letter of Map Revision.

Many years of monitoring are needed for restoration and revegetation projects.

Potential utility and infrastructure conflicts

### ACTIVITY TYPE GUIDELINES

Activities in the category should follow the relevant guidelines outlined by the National Resources Conservation Service for the proposed activity, such as the National Engineering Handbook 653 – Stream Corridor Restoration. U.S. Forest Service’s Guidance for Stream Restoration and the National Engineering Handbook 654 provide additional guidance. Projects that include wetlands should also reference NEH 650.13-Wetland Restoration, Enhancement, or Creation. Additional best practices can be found in “Hydro-morphological parameters generate lifespan maps for stream restoration management” by Schwindt et al.

Image courtesy of Paul Powers

*Introduction of large woody debris helps slow water and provides habitat in areas with adequate capacity*
ADDITIONAL DETAILED APPLICATION GUIDELINES: FLOODPLAIN RESTORATION AND PRESERVATION

Application Checklist: Floodplain Restoration and Preservation

☐ Record of deed (AS APPLICABLE)
☐ Letter of support from land trust/state agency in charge of managing the land (AS APPLICABLE)


Competitive Detailed Applications will include the following information in the technical report in addition to the basic technical report requirements outlined in the detailed application.

- Documentation of how design considerations listed herein are addressed or do not apply (include any associated calculations, hydrologic and hydraulic analysis, drawings, etc.)
  - Rationale and supporting materials for conclusion regarding whether stream is hydraulically disconnected from floodplain
- List of reference sources and guidance documents used and discussion of how they were applied
- Address watershed-level concerns that may be causing stream impairments in a short narrative, in order to be sure investing in stream and floodplain restoration at the proposed location will provide lasting benefit
- Identify what measurable attributes have been collected for the following:
  - Hydrology
  - Land use/land classification (impervious surfaces, agricultural land, etc...)
  - Erosion and sediment yield
  - Floodplain/riparian vegetation
  - Channel processes
  - Water quality
  - Aquatic and riparian species and critical habitats
  - Corridor dimensions
- Proposed streambed/floodplain modification (benching, terracing, excavation, etc.)
- Proposed planting plan (initial - 3-5 years) (if applicable)

Additional References/Literature

This document provides a brief overview of Flood Storage actions, pros and cons, key considerations, and links to additional project development resources.

**Flood storage actions** include regional detention basins, retention basins, and may include bundled smaller upstream detention or retention projects. Flood storage projects store excess runoff from a potentially overtopping body of water into either another body of water, or an area where it can be safely stored, such as in a wetland, undeveloped floodplain, reservoir or tank, green infrastructure element, or other storage facility. Detention and retention basins are intended to reduce peak flows and the frequency or magnitude of flooding by providing available storage volume for floodwaters. Storage volume for both detention and retention basins is often created by excavation but may also be created by constructing embankments above existing grade. These actions typically complement or are part of a watershed-wide system of practices to reduce flooding.

**Detention basins**, often called “dry ponds,” store floodwaters for a limited time, slowly releasing floodwaters after water levels in the receiving water body recede. Weirs, orifices, or other engineered outlet structures are typically used to meter release rates from detention-based practices. Real-time controls can be used to optimize detention and storage requirements.

**Retention basins**, often called “wet ponds,” are like detention basins except that they maintain a permanent pool and remain wet. Retention is achieved through a combination of storage, infiltration to shallow or deep groundwater systems, evapotranspiration, or on-site reuse. Weirs, orifices, or other engineered outlet structures are typically used to meter release rates from detention-based practices. Real-time controls can be used to optimize retention and storage requirements. Use of forebays can extend the life of the facility and facilitate maintenance operations.

Flood storage projects that provide significant storage and reduction in flooding frequency or magnitude are often located near tributaries of rivers, streams, lakes, or bays where sufficient storage volume can be provided to obtain measurable results. Flood storage projects can also be bundled in a holistic watershed scale approach in upstream areas along the stormwater system, farther from the receiving water body, to reduce the occurrence or magnitude of flooding in downstream areas.

**PROJECT TYPE GUIDELINES**

Projects in this category should refer to [deq.louisiana.gov/page/storm-water-protection](http://deq.louisiana.gov/page/storm-water-protection) for guidance, as well as [NOAA Green Infrastructure Options to Reduce Flooding](https://www.noaa.gov), The Nature Conservancy’s [A Flood of Benefits - Using Green Infrastructure to Reduce Flood Risk](https://www.nature.org), [Great Lakes Coastal Resilience Planning Guide](https://www.greatlakes.org), [Green Infrastructure Guidance for Flood Reduction Extended Methodology](https://www.greeninfrastructure.org), and other more context-specific sources, as appropriate.

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Example Project Evaluation

For certain designs, project site can be used as active recreation areas when dry (park, recreational area, etc.).

Projects can enhance groundwater infiltration and increase baseflow.

Can be easily designed to adapt to higher flood levels

Largely passive solutions

For some designs, may increase sedimentation downstream

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A competitive application in this category will identify locations that suffer from excessive flooding to be mitigated by the project and demonstrate how the design will specifically address these issues. Competitive applications should also show that the project addresses projected future flood risk or accommodates flood risk uncertainty. Projects that result in new or restored wetlands, estuaries, riparian, or green spaces are encouraged.

| PROS                                                                 | CONS                                                                 |
|                                                                     |                                                                      |
| May provide significant floodwater storage to reduce downstream flooding frequency and extents | Projects typically require significant land acquisition. |
| Multiple projects can be bundled in upstream areas to obtain desired benefits downstream. | Projects will require planning, engineering design, permitting, and construction. |
| May be designed to mitigate existing flooding in addition to providing additional capacity for increased runoff and peak flows resulting from future development or natural hydrologic changes | Projects require active long-term inspection and maintenance to maintain effectiveness, control vegetation, and remove accumulated sediments, trash, and debris. |
| Can be designed to provide co-benefits                              | Projects can have unintended impacts on downstream flooding if designed improperly. |
|                                                                     | Public safety and access to the project must be considered. Drowning or exposure to pollutants are risks to public. |

KEY DESIGN CONSIDERATIONS

While these projects can reduce flood risk, they must be well planned and designed to avoid negative consequences and function as intended. In addition to the considerations listed above, other factors that must be considered to successfully design and maintain a project that serves its intended function include unintended downstream impacts related to improper timing of releases, groundwater impacts, potential for existing contaminated soils or groundwater, soil types, infiltration rates, plant and invasive species management, inspection and operation of hydraulic control structures, and inspection and maintenance intervals, among others.

Case Study: Harris County, Texas

The Harris County Flood Control District has begun construction on two regional stormwater detention basins that will reduce flooding risks and damages in portions of the Greens Bayou watershed in north Harris County. The basins will benefit the area by storing floodwater and slowly releasing when the threat of flooding has passed. The two basins will be able to store up to 1.05 billion gallons of storm/flood waters and will benefit more than 1,100 structures.
ADDITIONAL DETAILED APPLICATION GUIDELINES:
FLOOD STORAGE

Application Checklist: Floodplain Restoration and Preservation
☐ A map of property and property owners from which easements or property rights must be acquired

Technical Report Guidelines: Flood Storage

Competitive Detailed Applications will include the following information in the technical report in addition to the basic technical report requirements outlined in the detailed application:

- Documentation of how design considerations listed herein are addressed or do not apply:
  - Planning and design methods and calculations
  - Hydrologic and hydraulic analysis/modeling
  - Preliminary plans or drawings of the proposed facilities, watershed maps, etc.
  - Water quality evaluations/modeling, if prepared
  - Flood storage footprint and available storage volume
  - Contributing drainage area
  - Storage volume required and available to provide desired flood mitigation
  - Inspection and maintenance
  - Invasive species management
  - Groundwater
  - Co-benefits

- List of reference sources and guidance documents utilized and discussion of how they were applied

- Current capacity of water body and estimated capacity if project is implemented. One method of evaluating capacity may be to demonstrate which return interval storm event (2-, 5-, 50-, 100-year, etc.) results in overbank flooding.

- Distance of proposed storage project from hazardous materials, EPA superfund sites, Animal Feed Operations, other hazardous assets

- A map of property and property owners from which easements or property rights must be acquired, status and any existing documentation or agreement, a general plan of the process expected to obtain appropriate agreements, and a statement of alternatives in case the plan is not successful
Critical facilities and infrastructure are assets that, because of their function, size, service area, contents, or other uniqueness, could result in further community harm if they are destroyed, damaged, or if their functionality is impaired. This could mean public health impacts, property damage, ecological impacts, or disruption of vital socioeconomic activities during or after a flood event. For communities to function effectively and meet the needs of their citizens, they must have power, water, waste disposal, transportation, communications, hospitals, fire services, police, and other essential services.

Critical facilities and infrastructure flood mitigation actions are those that: a) protect against or limit disruption to public services, b) limit cascading impacts as a result of service disruption, and c) consider and address key interdependencies that could result in or exacerbate impacts as a result of a flood event.

CRITICAL FACILITIES AND INFRASTRUCTURE FLOOD RISK MITIGATION TECHNIQUES

Eligible actions will help an entity limit disruption to critical public services. Activities may include, for example, constructing localized floodwalls or berms; raising existing equipment, structures, or roadways above flood elevations; or installing submersible equipment, backflow preventers, and backup generators. Multiple activities and flood proofing techniques (see Physical Non-Structural Flood Mitigation, Appendix 2.11.4) are frequently combined to provide a comprehensive solution. Passive mitigation measures, those that do not require human or mechanical intervention to be effective at mitigating loss during a flood event, are preferred.

Figure 1. Active measures require proper warning time and human or electrical/mechanical intervention, while passive mitigation options require no action or moving parts to be effective.

<table>
<thead>
<tr>
<th>Active Mitigation</th>
<th>Passive Mitigation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temporary/retractable floodwalls</td>
<td>Elevated structures/assets</td>
</tr>
<tr>
<td>Vehicular flood gates</td>
<td>Relocation of structures/assents</td>
</tr>
<tr>
<td>Ingress/egress protection within permanent floodwall</td>
<td>Natural drainage solutions</td>
</tr>
<tr>
<td>Submersible doors</td>
<td>Submersible equipment</td>
</tr>
<tr>
<td>Pumping systems</td>
<td>Floodwalls/berms that do not use breaks in the line of protection to provide access (for example, by using stairs or ramps)</td>
</tr>
<tr>
<td>Flood proofing techniques</td>
<td></td>
</tr>
</tbody>
</table>

1 These standards can be purchased at https://ascelibrary.org/


Example Project Evaluation

**PROS**

- Mitigation actions to critical facilities often have a project useful life of 30 to 50 years or more.

**CONS**

- May require significant technical expertise to understand risk, as well as develop solutions
- May be challenging to identify and address interdependencies in the system

### Case Studies

**Southwest Wastewater Treatment Plant, Baton Rouge, Louisiana**

The Southwest Wastewater Treatment Plant in Baton Rouge installed backup generators at the plant and pump stations in response to service loss impacts with Hurricane Gustav in 2008. The backup generators allowed the collection system to maintain full operations in August 2016 when Baton Rouge was inundated with historic flooding. The city’s treatment plant and pump stations incurred damages of approximately $5 million but maintained full functionality.

**Texas Medical Center, Houston, Texas**

Following Tropical Storm Allison in 2001, Texas Medical Center (TMC) implemented numerous mitigation projects to prevent future similar flood damages. TMC constructed perimeter floodwalls, berms, and barriers to the 0.2 percent annual chance flood elevation and over 50 watertight flood doors and gates, mostly within the tunnels under TMC’s campus, to allow personnel, people, and patients to move between facilities. TMC also elevated critical routes to allow drivers to access TMC from the state highway.

### PROJECT TYPE GUIDELINES

Projects in the category should follow the guidelines set forth in the State Hazard Mitigation Plan, as well as the parish’s local Hazard Mitigation Plan. All projects should meet ASCE 24-14 and ASCE 7-16 standards. FEMA’s Performance Based Design Guidelines are a helpful resource in the development of effective flood mitigation projects. A competitive application in this category will identify key interdependencies with the asset(s) proposed for mitigation and demonstrate consideration or mitigation of possible cascading impacts in the application. For example, if the application proposes flood mitigation directly to a hospital to mitigate service disruption, the application should demonstrate how key services necessary for the functioning of the hospital have also been considered (e.g., power, water, wastewater, and gas).

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## ADDITIONAL DETAILED APPLICATION GUIDELINES: CRITICAL FACILITIES AND INFRASTRUCTURE

### Application Checklist: Critical Facilities and Infrastructure

- ☐ For the Detailed Application: *Initial Property Assessment (Critical Facility Project)* (Appendix 2.5) and all required attachments *(REQUIRED for each facility or infrastructure item being mitigated)*

  - ☐ Aerial Photograph, Map, and/or Facility Master Plan of facility grounds with structure, as well as points of ingress and egress to/from structure, identified *(REQUIRED, see Appendix 2.8 for mapping examples)*
  - ☐ USGS Topographic map with facility clearly marked on the map *(REQUIRED)*
  - ☐ Property Appraiser Record *(REQUIRED)*
  - ☐ Conceptual or preliminary plans, narratives, and/or drawings *(REQUIRED)*
  - ☐ Professional Assessment Report and Scope of Work *(REQUIRED)*
  - ☐ Details and documentation of previous flooding and associated flood losses included in the *Benefit-Cost Analysis Worksheet* (Appendix 2.1) *(REQUIRED)*
  - ☐ Copies of *Section C. Detailed Structure Information* *(REQUIRED for each structure being mitigated on facility grounds)*

  - ☐ Structure Photograph Log *(REQUIRED, see Appendix 2.9 for template)*
  - ☐ Elevation Certificate or survey for the structure *(IF AVAILABLE)*
  - ☐ Completed *Project Budget Template* (Appendix 0.5) for each structure *(AS NEEDED)*
  - ☐ Additional budget back-up documentation (i.e., quotes or detailed contractor assessment) *(AS NEEDED)*

- ☐ Copies of Additional Critical Assets/Systems Form (Appendix 2.12) *(AS NEEDED)*

### Technical Report Guidelines: Critical Facilities and Infrastructure

Competitive Detailed Applications will include the following information in the technical report in addition to the basic technical report requirements outlined in the detailed application.

#### A competitive Detailed Application for the critical facilities and infrastructure project:

- Clarifies service population (or traffic counts) and potential loss of public service as a result of flooding
- Clarifies existing flood mitigation measures on site (such as flood walls or gates, pumps, stocked sandbags, backflow prevention)
- Clarifies the scale and extent of risk mitigation needed. With Round 1 Funding, it is unlikely that full system mitigation strategies will be funded, but the project application should clarify how the proposed project fits into a larger plan for infrastructure resilience at the facility or within the infrastructure system.
- Considers and clarifies interdependencies
- Provides existing facility drawings, where appropriate (site plans, structural, mechanical, electrical, and plumbing (MEP), Process Diagrams)
ASCE 7 Risk Categories (from ASCE 7-10)

<table>
<thead>
<tr>
<th>Use or Occupancy of Buildings and Structures</th>
<th>Risk Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buildings and other structures that represent a low risk to human life in the event of failure</td>
<td>I</td>
</tr>
<tr>
<td>All buildings and other structures except those listed in Risk Categories I, III, and IV</td>
<td>II</td>
</tr>
<tr>
<td>Buildings and other structures, the failure of which could pose a substantial risk to human life.</td>
<td>III</td>
</tr>
<tr>
<td>Buildings and other structures, not included in Risk Category IV, with potential to cause a substantial economic impact and/or mass disruption of day-to-day civilian life in the event of failure. Buildings and other structures not included in Risk Category IV (including, but not limited to, facilities that manufacture, process, handle, store, use, or dispose of such substances as hazardous fuels, hazardous chemicals, hazardous waste, or explosives) containing toxic or explosive substances where their quantity exceeds a threshold quantity established by the authority having jurisdiction and is sufficient to pose a threat to the public if released.</td>
<td>IV</td>
</tr>
<tr>
<td>Buildings and other structures designated as essential facilities.</td>
<td></td>
</tr>
<tr>
<td>Buildings and other structures, the failure of which could pose a substantial hazard to the community. Buildings and other structures (including, but not limited to, facilities that manufacture, process, handle, store, use, or dispose of such substances as hazardous fuels, hazardous chemicals, or hazardous waste) containing sufficient quantities of highly toxic substances where the quantity exceeds a threshold quantity established by the authority having jurisdiction to be dangerous to the public if released and is sufficient to pose a threat to the public if released.*</td>
<td></td>
</tr>
<tr>
<td>Buildings and other structures required to maintain the functionality of other Risk Category IV structures.</td>
<td></td>
</tr>
</tbody>
</table>

\*Buildings and other structures containing toxic, highly toxic, or explosive substances shall be eligible for classification to a lower Risk Category if it can be demonstrated to the satisfaction of the authority having jurisdiction by a hazard assessment as described in Section 1.5.2 that a release of the substances is commensurate with the risk associated with that Risk Category.
MITIGATION ACTION:
PHYSICAL NON-STRUCTURAL FLOOD MITIGATION

This mitigation action will reduce flood risk to individual homes, businesses, or other buildings through dry or wet floodproofing, elevation, protection of equipment, reconstruction, or acquisition and relocation. The key feature of non-structural flood mitigation is that it reduces damage without influencing or obstructing the natural direction and flow of flood waters; in other words, non-structural projects are those where people adapt to nature.¹ ² While the full definition of non-structural mitigation also includes activities such as community awareness programs, policy changes, and planning improvements, Round 1 funding is specifically focused on the physical non-structural project types. Applicants seeking funding for other non-structural actions should refer to the Regional Capacity Building Grant Program (Appendix 0.2). For Round 1, applicants should aim to include as many contiguous properties as possible for the proposed project.

Non-structural measures are often sustainable over the long term with minimal costs for operation, maintenance, repair, rehabilitation, and replacement.³

COMMON PHYSICAL NON-STRUCTURAL FLOOD MITIGATION TECHNIQUES⁴

Dry Floodproofing: This technique is intended to restrict water from entering the structure below the level of protection. This technique is only allowable for funding to non-residential or high-rise structures as it cannot be used to bring a residential structure into compliance with the flood damage prevention ordinance. This method is also unlikely to apply to high flood depths and/or high velocity flows.

Wet Floodproofing: This method allows floodwaters to enter a structure without damage and calls for all materials and equipment expected to flood to be water resistant. This method is typically not applicable to high flood depths and/or high velocity flows.

Elevation: This technique elevates a structure or equipment/assets to at least the designated flood elevation. Elevation can be performed using extended foundation walls, on piers, post, piles and columns, or through second story conversion. Use of fill is ineligible for Round 1 funding.

Relocation and/or Acquisition: This method involves physically moving or demolishing the at-risk structure and converting the land to floodplain compatible use. All relocations and acquisitions must be voluntary.

⁴Supra notes 2,3
**Example Project Evaluation**

**Mitigation Action:** Physical Nonstructural

<table>
<thead>
<tr>
<th>PROS</th>
<th>CONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Most techniques may be sustainable over a long period of time with minimal maintenance, operational, repair, and rehabilitation costs.</td>
<td>Elevation or acquisition projects may negatively impact existing communities.</td>
</tr>
<tr>
<td>Projects can utilize multiple non-structural mitigation techniques to further enhance resilience or enhance the community.</td>
<td>Dry floodproofing will require training, exercising, and emergency protective measures prior to a flood event.</td>
</tr>
<tr>
<td>The availability of multiple subtypes allows for flexibility in approach based on the needs.</td>
<td></td>
</tr>
</tbody>
</table>

**Case Study: Mandeville, Louisiana**

In Mandeville, Hurricane Isaac had a high water level approximately 0.5 feet less than Katrina (high water marks in Mandeville were 8.25 feet for Isaac (Bourdeau et al., 2013) and 8.8 feet for Katrina (FEMA, 2006)). During the Hurricane Isaac recovery, FEMA conducted a Loss Avoidance Study in Mandeville (Bourdeau et al., 2013) for 14 structures that were elevated after Katrina using federal, state, and local funding. The results of this study showed a total savings of $1,106,000 with an average savings of $79,027 per structure; the total cost of this project was $1,500,000. After just one event, the project received a 74% return on investment. It is expected that during future flood events, the project would continue to accrue additional savings.

**PROJECT TYPE GUIDELINES**

Projects in the category should follow the guidelines set forth in the State Hazard Mitigation Plan, as well as the parish’s local Hazard Mitigation Plan. Projects in this category can also follow the guidelines set for in Louisiana’s Coastal Protection and Restoration Authority Flood Risk and Resilience Program. For projects other than elevation, guidelines set forth in FEMA’s Reducing Flood Risk to Residential Buildings That Cannot Be Elevated should be followed.

A competitive application in this category will address multiple contiguous structures and will demonstrate consideration of the needs and desires of the community.

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ADDITIONAL DETAILED APPLICATION GUIDELINES: PHYSICAL NON-STRUCTURAL FLOOD MITIGATION

Application Checklist: Physical Non-structural Flood Mitigation

☐ For the Detailed Application: Initial Property Assessment (Physical Nonstructural Project) (Appendix 2.4) and all required attachments (REQUIRED)

☐ Attachments required for each structure included in the application (REQUIRED)
  ☐ Notice of Voluntary Interest from each property owner, including the Household Income Questionnaire. (REQUIRED, see Appendix 2.6)
  ☐ Aerial Map (large enough to show the project area) with the project site and structure(s) marked on the map (REQUIRED, see Appendix 2.8 for mapping examples)
  ☐ USGS Topographic map with structure(s) clearly marked on the map (REQUIRED, may be met with overall project map)
  ☐ Property Appraiser record (REQUIRED)
  ☐ Elevation Certificate or survey for the structure (IF AVAILABLE)
  ☐ Copy of the Parcel Map(s) showing each property to be mitigated. The map should include the Tax ID numbers for each parcel, if possible. (REQUIRED, may be met with overall project map)
  ☐ Structure Photograph Log (REQUIRED, see Appendix 2.9 for template)
  ☐ Completed all fields included in the Detailed Application tab of the Structure Prioritization Template (Appendix 0.7) for each structure included in the application

☐ For Final Design, but to be included in Detailed application to the extent that this information is available): Detailed Property Assessment (Physical Nonstructural Project) (Appendix 3.1) and all required attachments (REQUIRED)

☐ Attachments required for each structure included in the application (REQUIRED)
  ☐ Voluntary Participation Agreement from each property owner, including Household Income Questionnaire, and Flood Insurance/Loss Information (REQUIRED, see Appendix 3.2.2)
  ☐ Declaration of Eligibility and Release of Liability form (Appendix 3.2.3) from each property owner (REQUIRED)
  ☐ Aerial Map (large enough to show the project area) with the project site and structure(s) marked on the map (REQUIRED, see Appendix 2.8 for mapping examples)
  ☐ USGS Topographic map with structure(s) clearly marked on the map (REQUIRED, may be met with overall project map)
  ☐ Property Appraiser record for each structure (REQUIRED)
  ☐ Elevation Certificate or survey for the structure (REQUIRED)
  ☐ Copy of the Parcel Map(s) showing each property to be mitigated. The map should include the Tax ID numbers for each parcel, if possible. (REQUIRED, may be met with overall project map)
  ☐ Structure Photograph Log for each structure included in the project (REQUIRED, see Appendix 2.9 for template)
  ☐ Appraisal (APPLICABLE TO ACQUISITION PROJECTS ONLY)
Hazardous/Toxic Materials Coordination Letter (AS APPLICABLE)

Historic Preservation Coordination Letter (AS APPLICABLE)

Professional Assessment Report and Scope of Work (REQUIRED)

Conceptual or preliminary plans, narratives, and/or drawings (REQUIRED)

Completed all fields included in the Final Design tab of the Structure Prioritization Template (Appendix 0.7) for each structure included in the application

Completed Project Budget Template (Appendix 0.5) for each structure (AS NEEDED)

Additional budget back-up documentation (i.e., quotes or detailed contractor assessment) (AS NEEDED)

Technical Report Guidelines: Critical Facilities and Infrastructure

Competitive Detailed Applications will include the following information in the technical report in addition to the basic technical report requirements outlined in the Detailed Application.

A competitive Detailed Application for the physical non-structural mitigation project:

- Includes as many contiguous properties as possible
- Demonstrates careful consideration in selecting the appropriate mitigation measures
- Demonstrates careful consideration of the post-project social and economic impacts to the benefitting community
- Completes the following attachments, as applicable:
  - Structure prioritization template – This will help collect by structure information and will also be useful in the case that funding is not available for all structures included in the project application
  - The Initial Property Assessment for each structure included in the project. The Detailed Property Assessment will be required in the Final Design phase, but should be submitted in the Detailed Application Phase to the extent that this information is available.
  - For acquisitions:
    - Statement of assurances
    - Model deed restrictions
    - Maintenance agreement

Additional Applicant References

The following are additional resources for applicants to reference as desired:

FEMA Dry Flood proofing:
https://www.fema.gov/media-library-data/15265000101873-c3255382abe99394daf0316e04349b6e/TX_Harvey_RA1_V051618_508.pdf

FEMA, Reducing Flood Risk of Residential Buildings that Cannot be Elevated:
https://www.fema.gov/media-library-data/1443014398612-a4dfc0f86711bc72434b82c4b100a677/revFEMA_HMA_Grants_4pg_2015_508.pdf

FEMA P936, Floodproofing of Non-Residential Buildings,
https://www.fema.gov/media-library/assets/documents/34270
When water is absorbed into soil, it is filtered and ultimately replenishes aquifers or flows into streams and rivers. In urban and developed areas, impervious surfaces such as pavement and roofs prevent precipitation from naturally soaking into the ground. Instead, water may run rapidly into storm drains, sewer systems, and drainage ditches and can cause flooding, erosion, turbidity, storm and sewer system overflow and infrastructure damage. Stormwater is water run-off from buildings, streets, yards, parking lots, and other impervious or water-saturated surfaces. Stormwater management is an effort to reduce runoff and safely convey flows in order to mitigate potential damage and disruption from flooding, while improving water quality.

Gray stormwater infrastructure refers to stormwater management techniques that capture and convey water using non-natural, engineered methods, such as through storm drains, sewers, and culverts. It can also refer to flood management techniques that improve hydraulic efficiency such as channel hardening and straightening. A successful project will reduce the risk from exposure to floodwaters and erosive flows and can effectively work in tandem with green or nature-based infrastructure (for information on green infrastructure projects, see Appendix 2.11.6). This mitigation action may also be used for redesign or enhancement of existing gray infrastructure.

**Culverts** allow water – whether from rivers and streams, tidal inlets, or storm events – to pass underneath a bridge, road, or railway without disrupting traffic. If sized appropriately, culverts can reduce flooding on adjacent properties by transporting large volumes of water, preventing any backup of floodwater and spillover onto adjacent properties, while still enhancing stream stability and allowing passage for fish and other aquatic life.

**Hardened channels** efficiently convey flows by allowing increased stormwater velocities in a watercourse without resulting in erosion. Hardened channels can reduce flooding on adjacent properties by efficiently transporting larger flows in smaller cross sections or at lower depths. Channel hardening can be disruptive to the local ecosystem, but natural restoration techniques can mitigate some of these impacts and should be explored for projects integrating channel hardening.

**Floodgates**, flap gates, or other backflow prevention devices can be installed to prevent floodwaters from inundating upland areas during a storm event. Once the

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Example Project Evaluation

**Pros**

- Can address multiple sources of flooding
- Can improve and increase capacity of older infrastructure that was not designed for the current flood risk context
- Capable of addressing present and future flood risk
- Can be selectively applied as part of broader green or nature-based solutions

**Cons**

- Projects may require purchase of land and easements, which could affect project feasibility.
- Must be paired with other actions for the project to provide co-benefits, such as recreational value
- Channel hardening can cause adverse instream impacts and will be ineligible unless this can be unequivocally mitigated.
- Can reduce groundwater refresh and lead to erosion if poorly designed.

**Project Type Guidelines**

Projects in the category should follow guidelines set in the National Engineering Handbook 654 for channel hardening activities and the Federal Highway Administration for culvert improvements. Floodgates and flap gates often require structural analysis. A competitive application in this category will identify locations that suffer from excessive flooding or infrastructure risk. Competitive applications should also show that the project addresses projected future flood risk. Stability of upstream and downstream systems is a key consideration. Ideal applications would involve a stable transition between natural watercourses and gray infrastructure techniques, with minimal impacts to ecosystem function. Project applications should include information on the project decision-making process, why natural systems are not appropriate in this case, and expected impacts on natural systems.

A competitive application in this category will address multiple contiguous structures and will demonstrate consideration of the needs and desires of the community.

**Case Study: Stanwood, Washington**

Stanwood sits near the mouth of the Stillaguamish River, and parts of the city fall within a 1 percent annual chance floodplain (the FEMA Special Flood Hazard Area). The city invested in a drainage floodgate that replaced a 100-foot section of the Old Stillaguamish River Levee after experiencing severe flooding in 1996. The floodgate...
allows surface water to drain more quickly, preventing damage to local infrastructure, including a railroad and a busy commuter roadway. The local railroad line, often affected by flooding, reopened 12 hours after the end of rain from one flood event, compared with three to four days during previous floods. In addition, Marine Drive, which is frequented by roughly 10,000 commuters per day, was reopened in a day and a half, instead of four days. In prior floods, commuters had been forced to make a 15-mile detour until the floodwaters had cleared.
ADDITIONAL DETAILED APPLICATION GUIDELINES: STORMWATER MANAGEMENT, GRAY INFRASTRUCTURE

Application Checklist: Stormwater Management, Gray Infrastructure

No additional attachments required


Competitive Detailed Applications will include the following information in the technical report in addition to the basic technical report requirements outlined in the detailed application:

- Describe how the project will manage storm flows and reduce flood elevations.
- Identify type of capital improvements, and how the project will improve upon existing infrastructure.
- Stormwater best management practices to be employed.
- Explain the decision-making process to select gray infrastructure, as opposed to activities that would employ natural floodplain functions.
- If applicable, describe how gray infrastructure is a necessary component to maximize the effectiveness of green or nature-based solutions.
- Identify the project design storm.
- Describe potential consequences of project design storm being exceeded.
MITIGATION ACTION:
STORMWATER MANAGEMENT – GREEN INFRASTRUCTURE

Green infrastructure refers to a range of water management techniques that help rainfall soak into the ground, as in natural conditions. This includes adding soil, vegetation, and/or permeable pavement strategies that treat stormwater at its source in addition to reducing runoff and possible flooding by increasing infiltration.1 These projects are mainly implemented in urban and suburban areas where the natural hydrology has been significantly altered. When designed well, green infrastructure can capture up to 90 percent of a year’s rainfall.2 Projects in less developed areas should consider additional actions that reconnect streams with their floodplains (see Floodplain Restoration and Preservation sheet).

HOW CAN GREEN INFRASTRUCTURE REDUCE FLOOD RISK?

Depending on the project, green infrastructure can reduce flood risk by: a) slowing, retaining, and infiltrating stormwater to reduce pressure on existing drainage networks, b) reducing the volume/regulating the flow of stormwater into bodies of water (streams and rivers), and c) emulating the natural function of floodplains.3 In addition to reducing flood risk, green infrastructure projects have the ability to protect water quality by lowering pollutant loads and reducing stream bank erosion and sedimentation.4

Green infrastructure projects capture and reduce the flow of stormwater by increasing a site’s ability to store and absorb stormwater and increasing the infiltration capacity to groundwater. This can mitigate against land subsidence due to dewatering (surface water pumping to lower the water table, which prevents standing water and soggy ground). Land subsidence is the gradual caving in or sinking of an area of land and it occurs when large amounts of groundwater have been withdrawn from certain types of silt, sand, and fine-grained sediments.5 This has occurred across Louisiana due to pumping of groundwater to facilitate urban, agricultural, and industrial needs.

Large-scale green infrastructure projects can have significant impact on flood risk reduction. Multiple small-scale green infrastructure projects such as tree trenches, green parking, planter boxes, bioretention, etc., can greatly mitigate against stormwaters when networked over a large district, parish, area, or region. Applicants preparing stormwater applications should seek to integrate effective green infrastructure elements, where possible, and confirm green infrastructure is not appropriate before submitting gray infrastructure projects (see Stormwater Management - Gray Infrastructure Mitigation Actions).

KEY CONSIDERATIONS

What are the soil and groundwater conditions of the existing site?

What are the current flow rates into the existing drainage systems?

What are the maintenance requirements to ensure that the green infrastructure project functions correctly?

Does the project site have existing utilities or structures that will have to be worked around?

What co-benefits can be integrated into the project?

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Example Project Evaluation

PROS

- Reduces the amount of water entering the storm sewer systems, stream channels and other natural bodies of water that could cause flooding
- Projects can often be applied both alone and in concert with gray infrastructure improvements.

CONS

- Maintenance is critical to ensuring the longevity and continued effectiveness of green infrastructure projects.
- Projects are based on a variety of location-specific elements such as soil type, frequencies, and groundwater levels.

Case Study: Episcopal High School, Baton Rouge, Louisiana

Episcopal High School’s quadrangle experienced flooding problems caused by an inadequate drainage system. The school elected to install bioswales and a rain garden to capture the first 1 inch of rainfall. This approach proved cost effective at $110,000 compared to estimates for re-piping at $500,000. The quadrangle is roughly one acre, and since the bioswales and rain garden have been installed there have been no recorded floods on the school’s quadrangle. The raingarden has been able to retain 39 percent of the 10-year, 1-hour rainfall of the watershed. In addition to the flood protection, the rain garden has been used by the school as part of its environmental education curriculum.

PROJECT TYPE GUIDELINES

Projects in the category should follow the guidelines set forth in EPA’s Enhancing Sustainable Communities with Green Infrastructure. General guidance can be found on EPA’s website: epa.gov/green-infrastructure. A competitive application in this category will identify locations that suffer from excessive stormwater and mitigate flood risk by slowing and reducing stormwater discharges. Additionally, applications may also show the benefits of improved water and air quality, enhanced biodiversity, and any possible co-benefits involving park space or recreational possibilities.

PROS

- Can decrease wet weather peak flow and volume, restoring more natural conditions
- Can provide new quality habitat, especially when connecting to greenway corridors
- Can provide water quality improvements by way of adsorption, biological uptake, filtration, and infiltration
- Can improve health of adjacent waterbodies by reducing pollutant loads, stream bank erosion, and sedimentation. Can help restore a more natural flow regime to smaller streams
- Can often be designed to integrate recreational and other co-benefits that can improve quality of local life

CONS

- May be less appropriate when increasing capacity of existing infrastructure

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APPLICATION CHECKLIST: STORMWATER MANAGEMENT, GREEN INFRASTRUCTURE

No additional attachments required

TECHNICAL REPORT GUIDELINES: STORMWATER MANAGEMENT, GREEN INFRASTRUCTURE

Competitive Detailed Applications will include the following information in the technical report in addition to the basic technical report requirements outlined in the detailed application.

A competitive Detailed Application for the stormwater management, green infrastructure project:

- Identifies what green infrastructure components will be used in the project
- Identifies drainage area being controlled by proposed green infrastructure
- Describes acreage/size of green infrastructure facilities
- Describes soil type/map of soil types in the project area
- Describes appropriateness of soil type to the proposed solution
- Describes change in impervious surface area
- Identifies runoff coefficient(s)
- Documents the estimated volume/flow of water that will move through the project, including consideration of frequency and duration
  - If the project reduces peak stream flow, please provide calculations showing the reduction.
- If applicable, describes history of subsidence in the area
- Identifies whether the area is being pumped for drainage and/or consumptive use

ADDITIONAL APPLICANT REFERENCES

The following are additional resources for applicants to reference as desired:

- NOAA Green Infrastructure Options to Reduce Flooding, [https://coast.noaa.gov/data/docs/digitalcoast/gi-econ.pdf](https://coast.noaa.gov/data/docs/digitalcoast/gi-econ.pdf)
SECTION A. FACILITY-SPECIFIC INFORMATION

Submit information describing the facility including brief mitigation details, basic information, and required attachments.

<table>
<thead>
<tr>
<th>FACILITY INFORMATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facility Name:</td>
</tr>
<tr>
<td>Facility Address:</td>
</tr>
<tr>
<td>Facility Type / Occupancy / Purpose:</td>
</tr>
<tr>
<td>Facility service population, if applicable:</td>
</tr>
<tr>
<td>Property Tax ID # (Parcel):</td>
</tr>
<tr>
<td>Latitude:</td>
</tr>
<tr>
<td>Facility ASCE Class (\text{based on ASCE 24}): □ Category III □ Category IV</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>REQUIRED ATTACHMENTS</th>
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<tbody>
<tr>
<td>□ Aerial Photograph, Map, and/or Facility Master Plan of facility grounds with structure, as well as points of ingress and egress to/from structure, identified (\text{REQUIRED, see Appendix 2.8 for mapping examples})</td>
</tr>
<tr>
<td>□ USGS Topographic map with facility clearly marked on the map (\text{REQUIRED})</td>
</tr>
<tr>
<td>□ Property Appraiser Record (\text{REQUIRED})</td>
</tr>
<tr>
<td>□ Conceptual or preliminary plans, narratives, and/or drawings (\text{REQUIRED})</td>
</tr>
</tbody>
</table>
**FACILITY FLOOD PROFILE**

Provide general, high-level information on the facility’s flood profile. More detail will be provided in Section C. Detailed Structure Information for each structure being mitigated on the facility grounds.

<table>
<thead>
<tr>
<th>Flood zone:</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ Zone VE or V1-30</td>
<td>☐ Zone A (no BFE given)</td>
<td>☐ Floodway</td>
</tr>
<tr>
<td>☐ Zone AE or A1-30</td>
<td>☐ Zone B or X (shaded)</td>
<td>☐ Coastal Barrier Resource Act Zone</td>
</tr>
<tr>
<td>☐ Zone AO or AH</td>
<td>☐ Zone C or X (unshaded)</td>
<td></td>
</tr>
</tbody>
</table>

Has the facility flooded previously? ☐ No ☐ Yes, how many times? _________ since (year) ________

Please describe any previous flooding and associated flood losses (provide details and documentation in the Benefit-Cost Analysis Worksheet (Appendix 2.1).

**MAX 150 WORDS**

Please describe any existing flood-related mitigation measures:

**MAX 150 WORDS**
### FACILITY MITIGATION MEASURE SCOPE OF WORK

Provide a brief description of the facility mitigation measure(s) scope of work and identify any potential special considerations that should be analyzed for this facility structure. Understand that the LWI does not expect a complete scope of work at this point in the assessment phase. However, it is important that the applicant begin to understand the prioritized mitigation measures it wishes to implement as more detailed information will be required in the Final Design.

**Please select the appropriate mitigation measure(s) being proposed for the facility:**

<table>
<thead>
<tr>
<th>Mitigation Measure</th>
<th>Type Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ground Flood Mitigation</td>
<td>Permanent Floodwall/Levee, Temporary Floodwall, Berm/Fill Solution, Drainage Solution</td>
</tr>
<tr>
<td>Structured Flood Mitigation (Complete Section C. Structure-Specific Information for every structure included)</td>
<td>Dry Floodproofing, Wet Floodproofing, Elevation, Relocation, Reconstruction</td>
</tr>
<tr>
<td>Asset/System Flood Mitigation</td>
<td>Elevation, Relocation, Submersible Assets, Compartmentalization, Hardening in Place, Asset/System Redundancies (e.g. backup power supply)</td>
</tr>
<tr>
<td>Other</td>
<td>If checked, please describe:</td>
</tr>
</tbody>
</table>

**Number of Structures to which mitigation actions will be performed:** _____________

**Please provide a brief description of the scope of work for the facility and structures (if more than one facility is included in the application):**

**MAX 150 WORDS**
SECTION C. DETAILED STRUCTURE INFORMATION

Submit information describing each structure on the facility campus to be mitigated under the project including flood hazard details. If the facility contains more than one structure, please provide a unique Structure ID and provide copies of Section C. Detailed Structure Information for each structure to which mitigation will occur.

<table>
<thead>
<tr>
<th>STRUCTURE GENERAL INFORMATION (STRUCTURE ID#________)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Structure Name:</td>
</tr>
<tr>
<td>Structure Address:</td>
</tr>
<tr>
<td>Structure Type / Occupancy / Purpose:</td>
</tr>
<tr>
<td>Property Tax ID # (Parcel):</td>
</tr>
<tr>
<td>Latitude:</td>
</tr>
<tr>
<td>Longitude:</td>
</tr>
<tr>
<td>Total sq. ft. of structure:</td>
</tr>
<tr>
<td>Stories above Grade:</td>
</tr>
<tr>
<td>Stories below Grade:</td>
</tr>
<tr>
<td>Year Built:</td>
</tr>
<tr>
<td>Elevator(s)? Yes ☐ No ☐ If yes, location of elevator banks:</td>
</tr>
<tr>
<td>Foundation Type: Basement ☐ Crawlspace ☐ Slab on Grade ☐ Piles/Columns ☐ Other ____________</td>
</tr>
<tr>
<td>Frame: Wood ☐ Steel ☐ Masonry ☐ Reinforced Concrete ☐ Pre-Engineered ☐ Pole ☐ Other ____________</td>
</tr>
<tr>
<td>Soil Type:</td>
</tr>
<tr>
<td>Description and location of utilities attending structure:</td>
</tr>
</tbody>
</table>

MAX 150 WORDS

1 E.g., placement of meters, AC units, natural gas lines, associated tanks, etc.
## STRUCTURE FLOOD RISK INFORMATION (STRUCTURE ID#________)

<table>
<thead>
<tr>
<th>Flood zone:</th>
<th>Effective FEMA BFE:</th>
<th>Current First Finished Floor Elevation:</th>
<th>Basement Elevation:</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ Zone VE / V1-30</td>
<td>☐ Zone AO / AH</td>
<td>☐ Zone V (no BFE)</td>
<td>☐ Zone A (no BFE)</td>
</tr>
<tr>
<td>☐ Zone AE / A1-30</td>
<td>☐ Zone C or X (unshaded)</td>
<td>☐ Zone B / X (shaded)</td>
<td>☐ Other</td>
</tr>
<tr>
<td>☐ Floodway</td>
<td>☐ Coastal Barrier</td>
<td>☐ Resource Act Zone</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Flood zone:</th>
<th>Effective FEMA BFE:</th>
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<tbody>
<tr>
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<td>☐ Zone AO / AH</td>
<td>☐ Zone V (no BFE)</td>
<td>☐ Zone A (no BFE)</td>
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<td>☐ Zone AE / A1-30</td>
<td>☐ Zone C or X (unshaded)</td>
<td>☐ Zone B / X (shaded)</td>
<td>☐ Other</td>
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<tr>
<td>☐ Floodway</td>
<td>☐ Coastal Barrier</td>
<td>☐ Resource Act Zone</td>
<td></td>
</tr>
</tbody>
</table>

- **Depth above first floor at BFE:**
- **Depth above first floor at Proposed Mitigation Design Elevation:**
- **Flood Ordinance Required Elevation:**
- **Recommended CPRA CLARA elevation (coastal only):**

### Approximate market value of structure: $__________

- **Flood insurance policy?** ☐ Yes ☐ No
- **Is the structure self-insured?** ☐ Yes ☐ No
- **Contents covered?** ☑ Yes ☐ No
- **Have any NFIP Claims been made?** ☐ Yes ☐ No

- **Is there a history of flooding at the structure?** ☐ Yes ☐ No
- **Has the structure been previously mitigated?** ☐ Yes ☐ No

**Is the structure classified as Repetitive Loss?** ☐ Yes ☐ No

**Describe any previous mitigation:**

### MAX 150 WORDS

---

2 Base flood elevation (BFE) found on the effective FEMA Flood Insurance Rate Maps.
Describe proposed scope of work to structure:

MAX 150 WORDS
**SECTION D. DETAILED ASSET INFORMATION**

If the project consists of direct mitigation action to critical assets or system, provide the following information ON A PER ASSET OR SYSTEM BASIS. If additional space is needed, please attach copies of the Additional Critical Assets / Systems Form (Appendix 2.12), as needed.

<table>
<thead>
<tr>
<th>Critical Asset / System Classification</th>
<th>Description / Location</th>
<th>Describe Consequences of Flood Impact</th>
<th>Flood Vulnerability</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ Life/Fire Safety</td>
<td></td>
<td></td>
<td>Lowest Elevation:</td>
</tr>
<tr>
<td>☐ Heating/Cooling</td>
<td></td>
<td></td>
<td>Flood depth at</td>
</tr>
<tr>
<td>☐ Sanitary/Sewer</td>
<td></td>
<td></td>
<td>which asset/system</td>
</tr>
<tr>
<td>☐ Essential Service (e.g., Security System)</td>
<td></td>
<td></td>
<td>no longer</td>
</tr>
<tr>
<td>☐ Other ___________________________</td>
<td></td>
<td></td>
<td>operational:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Flood elevation at</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>which asset/system</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>is at risk:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Mitigation</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>proposed:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Proposed Mitigation</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Design Elevation</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(if applicable):</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Datum: ☐ NAVD88 ☐</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>NGVD29</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>☐ Other ___________</td>
</tr>
</tbody>
</table>

| ☐ Life/Fire Safety                    |                        |                                      | Lowest Elevation:  |
| ☐ Heating/Cooling                     |                        |                                      | Flood depth at     |
| ☐ Sanitary/Sewer                      |                        |                                      | which asset/system|
| ☐ Essential Service (e.g., Security System) |                      |                                      | no longer         |
| ☐ Other ___________________________ |                        |                                      | operational:       |
|                                      |                        |                                      | Flood elevation at |
|                                      |                        |                                      | which asset/system|
|                                      |                        |                                      | is at risk:        |
|                                      |                        |                                      | Mitigation         |
|                                      |                        |                                      | proposed:          |
|                                      |                        |                                      | Proposed Mitigation |
|                                      |                        |                                      | Design Elevation   |
|                                      |                        |                                      | (if applicable):   |
|                                      |                        |                                      | Datum: ☐ NAVD88 ☐ |
|                                      |                        |                                      | NGVD29             |
|                                      |                        |                                      | ☐ Other ___________ |
PROPERTY OWNER NOTICE OF VOLUNTARY INTEREST

Please complete this form if you are interested in further exploring options for reducing flood risk to your home or business through the Louisiana Watershed Initiative (LWI). Eligible flood mitigation projects include residential elevation, non-residential floodproofing, and voluntary residential acquisition. Signing this form does not commit the LWI or you to any action.¹

<table>
<thead>
<tr>
<th>TYPE OF PROGRAM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Please indicate the type of program:</td>
</tr>
</tbody>
</table>

☐ Acquisition  ☐ Elevation  ☐ Non-Residential Floodproofing  ☐ Other: __________________________

<table>
<thead>
<tr>
<th>PROPERTY INFORMATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Property Owner:</td>
</tr>
<tr>
<td>First Name:  Last Name:</td>
</tr>
<tr>
<td>Property Address:</td>
</tr>
<tr>
<td>Street:</td>
</tr>
<tr>
<td>City / Parish:  State: LA  Zip:</td>
</tr>
<tr>
<td>Owner(s) Mailing Address (if different than physical address):</td>
</tr>
<tr>
<td>Street:</td>
</tr>
<tr>
<td>City / Parish:  State: LA  Zip:</td>
</tr>
</tbody>
</table>

¹ Note: A Voluntary Participation Form must eventually be completed by all property owners of record in order to move forward with the project, but only one property owner must complete the Notice of Voluntary Interest.
## Property Owner Notice of Voluntary Interest and Household Income Questionnaire

Contact Information:

<table>
<thead>
<tr>
<th>Primary Phone:</th>
<th>Secondary Phone:</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ Home</td>
<td>☐ Home</td>
</tr>
<tr>
<td>☐ Work</td>
<td>☐ Work</td>
</tr>
<tr>
<td>☐ Cell</td>
<td>☐ Cell</td>
</tr>
</tbody>
</table>

Email Address: 

### NOTICE OF VOLUNTARY PARTICIPATION

The LWI would like to inform you that any participation in this project is voluntary. The State of Louisiana will not use eminent domain authority to acquire the property for open-space purposes if you choose not to participate in the LWI program, or if negotiations fail. In addition, your signed notice of voluntary interest does not guarantee that your property will ultimately be part of a flood mitigation project.

Owner’s Signature: 

Date: 

---

LOUISIANA WATERSHED INITIATIVE
HOUSEHOLD INCOME QUESTIONNAIRE

As the Louisiana Watershed Initiative’s goal is to provide a comprehensive approach to flood risk reduction, the LWI must prioritize projects that specifically benefit low- to moderate-income households. To help with the planning process, households interested in participating are asked to fill out this income questionnaire to help determine if your property meets the program goals. This form should be used for single family structures, multi-family structures up to four households, and multi-family structures for which other allowable income documentation is not available.

Please fill out for each income earner in the household and provide proof of income documentation in the form of the previous year’s tax return form or three consecutive paychecks. OCD will use this information for planning and programmatic purposes only. The information reported to OCD will remain confidential.

### INCOME FOR THE PREVIOUS 12 MONTHS
*(Fill out one per income earning member of Household over 18 years of age)*

<table>
<thead>
<tr>
<th>Income Source</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income from wages, salary, commissions, bonuses, or tips from all jobs:</td>
<td>$</td>
</tr>
<tr>
<td>Report amount before deductions for taxes, bonds, dues, or other items.</td>
<td></td>
</tr>
<tr>
<td>Self-employment income from own nonfarm business or farm business, including</td>
<td>$</td>
</tr>
<tr>
<td>proprietorships and partnerships:</td>
<td></td>
</tr>
<tr>
<td>Report NET income after business expenses.</td>
<td></td>
</tr>
<tr>
<td>Interest, dividends, net rental income, royalty income, or income from estates</td>
<td>$</td>
</tr>
<tr>
<td>and trusts:</td>
<td></td>
</tr>
<tr>
<td>Social Security or Railroad Retirement:</td>
<td>$</td>
</tr>
<tr>
<td>Supplemental Security Income (SSI):</td>
<td>$</td>
</tr>
<tr>
<td>Any public assistance or welfare payments from the state or local welfare office:</td>
<td>$</td>
</tr>
<tr>
<td>Retirement, survivor, or disability pensions:</td>
<td>$</td>
</tr>
<tr>
<td>Any other sources of income received regularly such as Veterans’ (VA) payments,</td>
<td>$</td>
</tr>
<tr>
<td>unemployment compensation, child support, or alimony:</td>
<td></td>
</tr>
<tr>
<td>TOTAL INCOME:</td>
<td>$</td>
</tr>
</tbody>
</table>

**Space for Applicant Use Only**

***Household qualifies as LMI?***

- Yes
- No

### HOUSEHOLD INFORMATION

<table>
<thead>
<tr>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Wage Earners in the Household:</td>
</tr>
<tr>
<td>Number of Persons per Household:</td>
</tr>
<tr>
<td>Property Tax ID (if available):</td>
</tr>
</tbody>
</table>
STATE OF LOUISIANA
DIVISION OF ADMINISTRATION
OFFICE OF COMMUNITY DEVELOPMENT (OCD)

LOUISIANA WATERSHED INITIATIVE

REGIONAL STEERING COMMITTEE
CONFLICT OF INTEREST IDENTIFICATION,
REPORTING AND AVOIDANCE PROCESS

This document provides the procedures relative to the programs of the Louisiana Watershed Initiative (LWI), by which regional steering committees (RSC) in the LWI should identify, disclose and manage all potential and actual conflicts of interest through elimination, mitigation or waivers if allowed.

This procedure is intended to assist the RSC and its members in understanding, anticipating and addressing any potential or actual conflict issues that may arise as a result of the member’s role on the RSC.

1. Conflicts of Interest Provisions Addressed in this Process

The Louisiana Code of Governmental Ethics, La. R.S. 42:1102 et seq ("Ethics Code") applies to independent the RSC members and contractors that are “engaged in a governmental function.” Therefore, the RSC members may be considered “public employees” and the provisions of the Ethics Code are applicable to them.

“Public employee” is anyone, whether compensated or not, who is engaged in the performance of a governmental function or is under the supervision or authority of an employee of the government entity. Public employees are not limited to payroll employees of OCD, but include the RSC members in connection with the LWI.

The HUD conflict of interest rules at 24 CFR 570.611 generally apply to persons who assist an LWI partner agency, who exercise or have exercised any functions or responsibilities with respect to CDBG activities assisted under this part, or who are in a position to participate in a decision making process or gain inside information with regard to such activities, may obtain a financial interest or benefit from a CDBG-assisted activity, or have a financial interest in any contract, subcontract, or agreement with respect to a CDBG-assisted activity, or with respect to the proceeds of the CDBG-assisted activity, either for
themselves or those with whom they have business or immediate family ties, during their tenure or for one year thereafter.

This document does not address specialized conflict of interest provisions that may apply to particular trades, relationship, or professions (i.e. Louisiana Rules of Professional Conduct.)

2. General Prohibitions

In general, conflicts of interest occur when one’s private interest and public duties overlap, resulting in a real or perceived lack of impartiality or the public perception that the RSC member is either not acting in the best interest of the State or inappropriately using the relationship for undue enrichment or influence.

In avoiding these conflicts, the RSC member must be familiar with the following general prohibitions:

A. Participation:

The RSC member shall not participate in any transaction involving OCD in which the RSC member has an economic interest, other than participation in transactions arising solely out of The RSC member’s performance of its contractual responsibilities to OCD.

The RSC member shall not participate in any transaction involving OCD in which, to its actual knowledge or through reasonable due diligence could ascertain that any of the following persons have a financial interest:

- Any legal entity in which the RSC member owns any ownership interest;
- Any legal entity in which an officer, director, partner or trustee of the RSC member owns an ownership interest in excess of 25%;
- Any member of the immediate family of a person who is an officer, director, partner, trustee or employee of the RSC member;
- Any legal entity owned by a member of the immediate family of a person who is an officer, director, partner trustee or employee of the RSC member;
- Any legal entity with which the RSC member has an existing contract and who by reason thereof is in a position to affect directly the economic interests of the RSC member.

“Participate” is to take part in or to have or share responsibility for action of a governmental entity or a proceeding personally, as a public servant of the governmental entity, through approval, disapproval, decision, recommendation, the rendering of advice, investigation, or the failure to act or perform a duty.
“Immediate Family Member” is the public employee’s children, the spouses of his children, his brothers and their spouses, his sisters and their spouses, his parents, his spouse and the parents of his spouse.

B. Prohibited Transactions

A The RSC member is prohibited from entering into any contract, subcontract, or other transaction that is under the “supervision and jurisdiction” of the RSC member’s “agency.” This restriction also applies to the immediate family members of the RSC member and to legal entities in which the RSC member’s family members own an interest in excess of 25%.

“Transaction” is any proceeding, application, submission, and/or request for a ruling or other determination, contract, claim, case or other such particular matter. For the purposes of the LWI, Transaction also includes any program or project that is funded in whole or in part by the LWI.

“Supervision and jurisdiction” is those things over which the RSC member has the power to exercise authority.”

The “agency” of the RSC member includes only the services under the scope of their contract and not to the entire governmental agency. If the contract with the LWI partner agency is a task order-based contract, agency shall be determined based on task orders and assignments actually used by the LWI partner agency. However, in accepting any such task order or assignment, it is the RSC member’s responsibility to identify based on diligent inquiry of all persons involved through the RSC member that the task order or assignment does not present a conflict of interest with any past or existing activity or relationship.

C. Gifts:

Generally, the RSC member is prohibited from soliciting or accepting a gift from persons who have an economic interest in the RSC member’s provision of services to an LWI partner agency.

In particular, the RSC member is prohibited from receiving any thing of economic value from any person whose economic interests will be affected by the performance or non-performance of the RSC member’s contractual responsibilities.

Generally, the gift prohibition of the Louisiana Government Code of Ethics does not prohibit food or drink consumed as the personal guest of the person providing the food.
or drink. The person providing the food and drink may not provide the RSC member with more than $64 of food and drink.

However, as a matter of policy no RSC member should accept a gift, including of food or drink, from any person or entity that is seeking financial assistance of CDBG-MIT funds for a project within the geographic boundaries of the RSC.

3. Disclosure of Conflicts

EXISTING ACTUAL OR POTENTIAL CONFLICTS: As soon as the RSC member becomes aware of the existence of an actual or potential conflict, it shall disclose all known or potential conflicts of interest to OCD by promptly informing OCD of the circumstances giving rise to the potential or actual conflict.

The RSC member in coordination with OCD and any other affected agencies will develop and implement a Disqualification Plan. The Disqualification Plan will be a written document that identifies the alternative measures available to OCD and the RSC member to prevent participation in prohibited transactions.

FUTURE CONFLICTS: The RSC member shall refrain from entering any new relationship or undertaking any new or additional services that present an actual or potential conflict of interest.

The RSC member shall report to OCD any circumstance under which it can anticipate that potential receipt of monies or other assets, as compensation for services or otherwise, which in whole or in part are funded directly or indirectly by CDBG-MIT funds administered by the OCD. This disclosure requirement is not limited to whether a task order has been issued or is anticipated to be issued involving those circumstances.

ALL DISCLOSURES REQUIRED UNDER THIS PROCESS SHALL BE DIRECTED IN WRITING TO OCD as follows:

Via email to LWI-Round1@la.gov

The subject line of the e-mail shall include “LWI COI POLICY DISCLOSURE” in addition to any further description of the subject.

Caution must be exercised at all levels of governmental contracting to identify, avoid and manage any perceived or apparent conflict of interest. The identification of any conflict of interest warrants immediate attention by all parties.