Mark Henry

County Judge
County of Galveston

Galveston County Courthouse
722 Moody Avenue, Galveston, Texas 77550

Tyler Drummond
Chief of Staff

Zach Davidson
Deputy Chief of Staff

Spencer Lewis
Director, Communications

March 17, 2025

W. Nim Kidd, MPA, CEM
Chief, Texas Division of Emergency Management
Vice Chancellor – The Texas A&M University System
1033 La Posada Drive, Suite 300
Austin, Texas 78752

Re: 2024 Building Resilient Infrastructure and Communities

Dear Chief Kidd,

Galveston County Commissioners Court met on January 8, 2024 to review and approve the submission of the 2023 BRIC Galveston County Bacliff Drainage Project grant application to the Texas Division of Emergency Management.

The proposed project has an estimated cost of $16,551,110 with a 75/25 match requirement of $4,137,778. Galveston County Commissioners Court approved the allocation of the match amount from the General Fund should other funding not be available from other grant sources.

Please contact Betsy Thomas, Grants Manager if you have any questions about this correspondence, or our application, at 409-770-5355 or via elizabeth.thomas@co.galveston.tx.us.

Sincerely,

Mark Henry

Texas Division of Emergency Management
Maintenance Agreement

BRIC grant applicants should address future/continued maintenance should the proposed project involve the retrofit or modification of existing public property or result in the public ownership or management of property, structures, equipment, or facilities.

NOTE: Projects that involve retrofitting, elevation, or other modification to private property where the ownership will remain private after project completion do not require a maintenance commitment from the unit of local government.

Galveston County, of the State of Texas, hereby agrees that if it receives any Federal aid as a result of the attached project application, it will accept responsibility, at its own expense if necessary, for the routine maintenance of any property, structures, equipment or facilities acquired or constructed as a result of such Federal aid. Routine maintenance shall include, but no be limited to, such responsibilities as keeping vacant land clear of debris, stream channels, culverts and storm drains clear of obstructions and debris; detention/retention ponds free of debris, trees, and woody growth; and maintaining equipment in an operable state.

By signing this agreement, the **Galveston County** acknowledges and accepts maintenance responsibility to preserve the long-term mitigation effectiveness of the project. It does not replace, supersede, or add to any other maintenance responsibilities imposed by Federal laws or regulations which are in force on the date of project award.

Galveston County Judge, Mark Henry

MARCH 17, 2025
Date

2024 BRIC Galveston County Bacliff Drainage Project

Status: Pending SAR signature

Scope of work

The project Scope of Work (SOW) identifies the eligible activity, describes what will be accomplished and explains how the mitigation activity will be implemented. The mitigation activity must be described in sufficient detail to verify the cost estimate. All activities for which funding is requested must be identified in the SOW prior to the close of the application period. FEMA has different requirements for project, planning and management cost SOWs.

Subapplication title (include type of activity and location)	**2024 BRIC Galveston County Bacliff Drainage Project**
Do any of the following apply for this project?	**None**

Activities

Primary activity type	**Flood control**
Primary sub-activity type	**Stormwater management**
Secondary activity type (Optional)	
Geographic areas description	**Gordy Road, Reppert Street, and Miles Road are in Galveston County, Texas, which is situated on the Gulf Coast of Texas just southeast of the City of Houston, east of Brazoria County, and west of Chambers County. It is bounded by the Gulf of Mexico on the southeast. The county comprises mainland, Galveston Bay, the Bolivar Peninsula, and Galveston Island. The area is characterized by diverse geography that includes both urban and suburban developments, along with natural features such as coastal plains and marshlands. Geographic Features - Coastal Location: Being close to the Gulf of Mexico, the area is subject to coastal influences, including tidal fluctuations and potential storm surge impacts during severe weather events. - Flat Topography: The topography in this region is generally flat, which can contribute to challenges in natural drainage and exacerbate flooding risks during heavy rainfall when water tends to pool. Drainage and Watersheds - Watershed Areas: Gordy Road,**

Reppert Street, and Miles Road likely fall within various watershed areas that drain into nearby water bodies, creeks, or bayous. Poor drainage has led to localized flooding in these areas, especially during intense rainfall events. - Limited Natural Drainage: The lack of sufficient natural drainage features, coupled with impervious surfaces due to urban development, has increased surface runoff and flood risks. Historical Flooding Risks - Previous Flood Events: The area has a history of flooding during heavy rainstorms, hurricanes, or tropical storms, resulting in inundation of roadways, properties, and infrastructure. - Localized Flooding: Low-lying areas or sections with inadequate drainage infrastructure experience more frequent and severe flooding, impacting transportation and posing risks to residents and businesses. Urban Development and Infrastructure: - Urbanization Effects: Rapid urban development in the vicinity has altered natural drainage patterns, leading to increased runoff and flood risks. - Infrastructure Challenges: Aging or inadequate stormwater drainage systems contributes to localized flooding issues along these roads, particularly ones not adequately upgraded. Overall, the geography of Gordy Road, Reppert Street, and Miles Road in Galveston County exhibits characteristics that contribute to flooding risks, including flat terrain, urbanization, inadequate drainage infrastructure, and the area's coastal proximity. Addressing these flood risks through the implementation of improved drainage systems is crucial to mitigate the impact of flooding and enhance the resilience of the community against future inundation events.

Community lifelines

Primary community lifeline	**Safety and security**
Primary sub-community lifeline	**Community safety**
Secondary community lifeline (optional)	**Transportation**
Secondary sub-community lifeline	**Highway/roadway/motor vehicle**

Tertiary community lifeline (optional)	**Food, water, shelter**
Tertiary sub-community lifeline	**Water**

Hazard sources

Primary hazard source	**Flooding**
Secondary hazard source (optional)	**Severe storm**
Tertiary hazard source (optional)	**Tropical cyclone (Hurricane/Typhoon)**

Is this a phased project?	**Yes**
Are you doing construction in this project?	**Yes**
Percentage of population impacted	**100**
Provide detailed description of population impacted	**In the streets neighboring Gordy Road, Reppert Street, and Miles Road within Galveston County, Texas, the recurring threat of localized flooding casts a profound impact on the lives of approximately 696 immediate residents and 245 properties. These individuals and households face extensive challenges, marked as 100% disadvantaged per the Climate and Economic Justice Screening Tool. Notably, transportation barriers rank highest within the burden threshold, exacerbating the difficulties encountered by this vulnerable population. During instances of heavy rainfall, the area becomes susceptible to inundation, resulting in road closures, restricted access to vital services, and severe disruptions to the daily lives of residents. Properties bear the brunt of flood-related damages, leading to structural issues, loss of personal belongings, and compromised living conditions for those residing in the affected homes. Furthermore, persistent flooding exacerbates the isolation of residents, impeding their access to transportation options and essential facilities, thereby amplifying their socioeconomic disparities. The impact of localized flooding isn't confined solely to these immediate streets but also extends to around 1,100 individuals, based on the Grant Equity Threshold Tool, in the**

surrounding area. These indirect populations heavily rely on Gordy Road, Reppert Street, and Miles Road as primary travel routes. Additionally, localized flooding has adversely impacted the operation of The Bayview Municipal Utility District located on 309 Miles Road, particularly in supplying potable water to approximately 1,839 people in the Bacliff area. The effects of flooding on this utility district have manifested in several ways including infrastructure damage, service disruption, and operational challenges. Mitigating localized flooding in the area surrounding the Bayview Municipal Utility District on Miles Road indirectly benefits the population served by this facility by enhancing infrastructure resilience, ensuring the reliability and continuity of potable water supply during extreme rain events, and reducing service disruptions. All these factors aid in the protection of the FEMA community lifeline of food, water, and shelter. Highway 146, running adjacent to the project area which has an Annual Average Daily Traffic volume of around 2,520 vehicles, serves as a crucial exit route for all populations during heightened rain events leading to flooding. Disruptions on this highway significantly impede the mobility of residents, posing challenges to their access to employment, education, healthcare, and other essential services. Census Tract 48167721600, where the project is situated, hosts a total population of approximately 2,400 residents, indicating that at least 100% of the indirect beneficiaries, if we add the 1,839 served by the municipal utility district and 1,100 indirect beneficiaries, grapple with the impacts of this hazard. The exacerbating climate factors in Galveston County, including increased rainfall intensity and changing weather patterns due to climate change, escalate the frequency and severity of flooding events. These factors compound the existing hardships faced by vulnerable populations in flood-prone areas, aggravating their risks and socio-economic challenges. Implementing a new and robust drainage system is imperative to mitigate the adverse impacts of localized flooding in this area. This intervention promises a direct positive impact by significantly reducing flood risks,

	enhancing community resilience, and safeguarding the affected residents and properties. A well-designed drainage system will mitigate the immediate threat of flooding, ensuring improved accessibility, safety, and overall well-being for the disadvantaged populations residing along Gordy Road, Reppert Street, and Miles Road. Moreover, the mitigation efforts will benefit the larger indirect populations reliant on these roads, ensuring safer travel routes during inclement weather conditions and enhancing their quality of life by minimizing the disruptive impacts of flooding on their daily activities and mobility.
Provide a clear and detailed description of your proposed activity	**The proposed activity is to construct a new drainage system to be implemented on Gordy Road, Reppert Street, and Miles Road which are in Galveston County, Texas. The existing roadside ditches along Gordy Road, Reppert Street, and Miles Road do not have sufficient capacity to drain and convey stormwater runoff to Galveston Bay, causing flooding of the roadway and properties. During these high-rain events, water is pooled at high volumes and remains stationary with no recourse. With the increase of severe weather, the ditches are not adequate to handle the amount of rain the area has been seen in recent years. Most recently, June of 2021, a series of thunderstorms produced heavy rainfall over Galveston County, resulting in flooding in the Bacliff area. Heavy rain resulted in high water over roadways, making streets impassable. At least 25 structures including many within the Bacliff Villas subdivision were inundated with floodwaters, resulting in water damage. Damages from this event totaled approximately $500,000. In another event, a cluster of strong thunderstorms developed across the area during the evening of December 29, 2022, and early morning hours of December 30. These storms produced heavy rain and gusty winds, notably resulting in flash flooding in portions of Galveston County. Additionally, it was reported that a funnel cloud was sighted near Galveston Island Street flooding leading to impassable roadways. These flooding events create a domino effect upstream causing more damage to other residences, businesses, and**

	infrastructure. As a result, the flood risk to the homes and livelihoods in this area has increased. The proposed project is to alleviate heavy flooding along Gordy Road, Reppert Street, and Miles Road caused by severe rain and hurricanes. To do this, a new storm sewer system would be constructed under Gordy Road, Reppert Street, and Miles Road. Specific locations of the placement of the drainage system will be specified following the completion of the studies and assessments phase. As a preliminary measure, the new storm sewer system would be comprised of approximately **2500 lf of precast concrete box culverts on Gordy Road from Galveston Bay (29.516593, -94.989956) to Chanterway Street (29.512595, -94.995625); on Miles Road from Galveston Bay (29.519513, -94.995146) to Micheal Street (29.515636, -95.000734), and a location for the new drainage system on Reppert Street will be determined following the appropriate assessments that will be performed in Phase I. Additionally, necessary land rights and easements for the construction of the drainage system along Reppert Street will need to be acquired. A full BCA will be developed following completion of the Engineer's studies and designs. The implementation of a new drainage system will take anticipated future conditions into account to ensure the system's effectiveness and resilience against changing environmental, demographic, and climatic factors.
How will the mitigation activity be implemented?	**The implementation of a drainage system on Gordy Road, Reppert Street, and Miles Road in Galveston County, Texas, to mitigate localized flooding involves a phased approach that encompasses various stages, including studies, assessments, engineering, design, permitting, and construction. Here's a detailed breakdown of the proposed plan structured into two phases: Phase 1: Engineering Studies/Assessments & Design 1. Land Acquisition Strategy: Develop a strategic plan for land acquisition critical for the implementation of the drainage system on Reppert Street, identifying parcels and negotiating acquisitions. 2. Flood Risk Assessment: Conduct a comprehensive flood risk assessment to identify vulnerable areas,**

analyze historical flooding data, and determine the extent of flood risks along Gordy Road, Reppert Street, and Miles Road. 3. Hydrological and Hydraulic Studies: Perform hydrological and hydraulic studies to assess drainage patterns, rainfall runoff, and hydraulic capacities needed for the drainage system's design. 4. Engineering Evaluation: Evaluate existing infrastructure, including stormwater networks and culverts, to identify deficiencies and areas needing upgrades or improvements. 5. Design Development: Develop detailed engineering designs for the drainage system on Gordy Road, and Miles Road, considering the findings from assessments and studies conducted earlier in Phase 1. a. Proceed with engineering and design specific to Reppert Street drainage system, incorporating findings from the acquired land and strategic assessment. 6. Engineering Plans and Specifications: Prepare construction-ready engineering plans, specifications, and drawings for the drainage infrastructure, including pipe networks, catch basins, and any green infrastructure elements. 7. Permitting Process: Initiate the permitting process, obtaining necessary permits and approvals from regulatory agencies (e.g., local planning departments, environmental agencies) to ensure compliance with applicable laws and regulations. 8. EHP review Phase 2: Construction 1. Construction Implementation: Commence construction activities according to the approved engineering plans and specifications, including installation of drainage infrastructure, excavation, laying of pipes, and construction of retention/detention basins. 2. Construction Implementation - Reppert Street: Initiate construction activities for the drainage system on Reppert Street upon successful land acquisition, following the approved engineering plans and adhering to local regulations. The phased approach allows for systematic planning, design, permitting, and construction of the drainage system in multiple stages, starting with Gordy Road and Miles Road as the initial priority due to their immediate flood risk concerns. Reppert Street's implementation occurs subsequently, contingent upon successful land acquisition and strategic

planning. Each phase involves detailed assessments, engineering considerations, permitting, and construction, ensuring the effective mitigation of localized flooding for the immediate and indirect beneficiaries in the area.

Describe how the project is technically feasible and will be effective in reducing the risk by reducing or eliminating damage to property and/or loss of life in the project area. Please include engineering design parameters and references to the following: preliminary schematic or engineering drawings/design; applicable building codes; engineering practices and/or best practices; level of protection (e.g., life safety, 100-yr flood protection with freeboard, 100-yr wind design, etc.):

Implementing an efficient stormwater drainage system for Gordy Road, Reppert Street, and Miles Road in Galveston County, Texas, demands meticulous adherence to engineering best practices and local regulations, ensuring robust flood mitigation measures. Here's a comprehensive overview supporting the dire need for this new drainage system: The initial phase will initiate with a comprehensive Hydrologic and Hydraulic (H&H) study. This study will meticulously analyze essential design parameters, including runoff calculations, pipe sizing, and rainfall analysis. Data from authoritative sources like USGS, NOAA, FEMA, and others will inform computer modeling to optimize the system's efficacy under varying storm intensities. This thorough study aims to ensure the stormwater management system's resilience in mitigating stormwater runoff's adverse impacts on infrastructure, the community, and the environment. Furthermore, detailed engineering drawings outlining the proposed drainage system will be developed. This system will incorporate various components such as stormwater drains, culverts, and catch basins, meticulously designed to manage stormwater runoff effectively. The underground pipe system, using box culverts, will strictly adhere to the American Concrete Pipe Association (ACPA) codes and standards. Reference from the ACPA design manual will inform pipe materials, fill height tables, grading specifications, and backflow prevention measures. A safety factor will also be incorporated to handle extreme weather runoff, as determined by the H&H study. The level of protection will align with a 10-25-year flood protection level, supplemented with freeboard to provide an additional safety margin beyond the expected flood level. Moreover, adhering to FEMA's Nature-Based Solutions (NBS) guidelines, the project will integrate green stormwater infrastructure measures, like permeable pavements and green streets, where

	applicable. These measures aim to reduce runoff, enhance water quality, and contribute to neighborhood aesthetics and biodiversity, amplifying the system's effectiveness and sustainability. Considering the impacts of climate change, the design will factor in potential alterations in rainfall patterns and storm intensity. Future climate scenarios will be accounted for, bolstering the system's resilience against evolving weather patterns. The subsequent construction phase will strictly follow the latest local regulatory requirements from agencies such as TCEQ, TPDES, MS4s, and the US Army Corps of Engineers (USAGE). Post-construction stormwater management guidelines and best management practices will be incorporated to regulate runoff from developed areas effectively. Professional engineers and specialized consultants will oversee the project, ensuring compliance with standards and best practices. Rigorous quality control measures will be implemented throughout the design and construction phases, ensuring the new drainage system aligns with stringent engineering criteria and local regulations. Incorporating these rigorous engineering design parameters, adherence to codes and best practices, and prioritizing safety will ensure the new drainage system's efficacy. It will significantly diminish property damage and mitigate risks to life in the project area affected by flooding, fortifying the resilience of Gordy Road, Reppert Street, and Miles Road in Galveston County, Texas.
Who will manage and complete the mitigation activity?	**Galveston County will contract with a qualified engineering consultant to complete Phase 1 activities up to solicitation for construction. A competitive procurement process will be implemented to select a construction contractor of the subsequent phase work. The design engineering firm will be retained by Galveston County for construction oversight, administration, and quality assurance services. The management and completion of a mitigation activity, such as implementing a new drainage system for Gordy Road, Reppert Street, and Miles Road in Galveston, Texas, would typically involve various entities and stakeholders working together to ensure the project's**

success. Here are the primary parties to be involved in managing and completing this mitigation activity: Local Government Authorities: - City/County Departments: The county government entities, such as the Public Works Department and Engineering Department, will oversee the project's planning, coordination, and implementation. - Permitting and Regulatory Bodies: Will manage the necessary permits and ensure compliance with local regulations, zoning ordinances, and environmental standards throughout the project. Engineering and Consulting Firms: - Engineering Consultants: Professional engineering firms specializing in infrastructure and drainage design will be involved in designing the new drainage system, conducting feasibility studies, and providing technical expertise. - Environmental Consultants: Will be engaged to assess environmental impacts and recommend mitigation measures to minimize ecological disturbance during construction. Contractors and Construction Companies: -Construction Contractors: Responsible for executing the construction phase based on the approved design plans, installing the new drainage infrastructure, and ensuring quality workmanship. - Subcontractors: Will handle specific tasks within the project, such as excavation, installation of pipelines, or implementing erosion control measures. Community Engagement and Stakeholders: - Residents: Community members in the affected areas will be informed about the project, providing input, and may need to adjust to temporary disruptions during construction. - Stakeholder Groups: Various stakeholder groups, such as neighborhood associations or business organizations, will be engaged to gather feedback and ensure the project aligns with community needs. Project Managers and Oversight Committees: - Project Managers: Individuals or teams designated to oversee the project's progress, manage timelines, budgets, and ensure coordination among different parties involved. - Oversight Committees or Boards: Will review project milestones, address any issues, and provide guidance or approvals at key stages. The management and completion of

	such a mitigation activity require effective collaboration, communication, and coordination among these stakeholders. They work together to ensure the successful implementation of the new drainage system, meeting the project objectives, and addressing the flooding issues along Gordy Road, Reppert Street, and Miles Road in Galveston, Texas.
Will the project address the hazards identified and what risks will remain from all hazards after project implementation (residual risk)?	**Implementing a new drainage system along Gordy Road, Reppert Street, and Miles Road in Galveston County, Texas, will significantly mitigate flooding from high rain events in the area. A well-designed and properly implemented drainage system will aim to manage stormwater effectively, reduce the risk of flooding, and improve the area's resilience to heavy rainfall. However, it's important to note that while the new system can alleviate many flooding issues, some risks might persist or emerge due to various factors: Mitigation of Flooding: - Improved Drainage Capacity: A new drainage system designed to handle increased water volume can reduce surface flooding during high rain events by efficiently channeling water away from roads and properties. - Reduced Overland Flow: Properly designed drainage infrastructure can minimize overland flow, decreasing the likelihood of water pooling on roadways and properties, which mitigates the risk of surface flooding. -Floodplain Management: Effective drainage systems might help manage floodplains by diverting excess water away from vulnerable areas, reducing the risk of inundation in these zones during heavy rain events. Remaining Risks or Challenges: - Localized Flooding: Despite the new system, certain localized areas might still experience flooding due to limitations in drainage system capacity or unexpected changes in rainfall intensity exceeding the system's design parameters. - Flash Flooding Events: Extreme or sudden rainfall, especially in intense storm events, might exceed the capacity of the drainage system, resulting in temporary flash flooding in low-lying or poorly drained areas. - Maintenance Requirements: Inadequate maintenance of the new drainage infrastructure, such as clogging of drains or lack of regular inspections, could reduce its effectiveness and potentially lead to**

	localized flooding issues. - Residual Vulnerabilities: Some areas within the drainage system's vicinity might remain vulnerable to flooding due to various factors, such as natural topography, property-level drainage issues, or inadequate system reach. It's essential to conduct thorough planning, design, and ongoing maintenance to maximize the effectiveness of the new drainage system. Continuous monitoring, coupled with adaptive management strategies, will help identify and address any remaining flood risks or emerging challenges, ensuring a more resilient response to high rain events in the area after the project implementation.
Does the mitigation activity incorporate nature based solutions? Please select the Nature Based Solution(s) used:	**Green streets, Green stormwater management, Native plants**
When will the mitigation activity take place?	**Upon the successful grant award and acceptance, the initiation of the implementation of a new drainage system for Gordy Road, Reppert Street, and Miles Road in Galveston County will mark the commencement of a carefully structured timeline spanning 36 months. Phase one of the project, projected to take approximately 18 months, will primarily focus on critical preparatory tasks. This phase will begin immediately following the grant award and acceptance. It will involve a comprehensive engineering study to assess the area's drainage needs, topography, and hydrological considerations. Simultaneously, the design phase will commence, involving the development of detailed engineering plans and specifications for the new drainage system. Additionally, this phase will entail the crucial task of acquiring necessary land rights and permissions along Reppert Street to facilitate the construction process. Concurrently, intensive efforts will be dedicated to community engagement and stakeholder involvement. This phase will prioritize discussions with residents, relevant authorities, and other stakeholders to ensure that their input is integrated into the design and planning process. Following the completion of phase one, the project will transition into phase two, slated to span approximately 18 months. This phase will**

primarily focus on the physical implementation of the new drainage system based on the findings and design finalized in phase one. The construction phase will involve the actual installation of stormwater drains, culverts, and any other necessary infrastructure as per the engineered design specifications. The construction phase will be meticulously executed, considering weather constraints, environmental impact mitigation, and adherence to applicable regulations and permits. Regular monitoring, quality control, and community communication will be maintained throughout this phase to ensure project compliance and minimize disruptions to the local community. In essence, the proposed timeline spans 36 months, with an initial 18-month phase dedicated to engineering studies, design, and land acquisition on Reppert Street, followed by an ensuing 18-month construction phase. This timeline is devised to ensure systematic progress, community involvement, and adherence to established engineering and regulatory standards for the successful implementation of the new drainage system.

Explain why this project is the best alternative. What alternatives were considered to address the risk and why was the proposed activity considered the best alternative?

The implementation of a new drainage system along Gordy Road, Reppert Street, and Miles Road in Galveston County, Texas stands out as the optimal solution to mitigate the persistent flooding issues in the area. Several factors underscore why this project is the most suitable alternative to effectively address and alleviate the flooding concerns: Enhanced Drainage Capacity: The installation of a new storm sewer system will significantly enhance the drainage capabilities compared to the existing roadside ditches. This enhancement will double the flow capacity, facilitating the increased movement of stormwater runoff from inland residential areas towards Galveston Bay to the east. By bolstering the flow capacity, this system will effectively minimize floodwater accumulation in the inland portions of the Bacliff community, thus mitigating potential damages caused by future flood events in the residential areas. Consideration of Alternative Projects: Various alternative projects were thoroughly considered, evaluated, and compared before determining the implementation of the new drainage system as

the most viable solution: a. Property Acquisition/Buyout: An alternative proposition involved acquiring approximately 245 properties within the flood-prone area. The intention was to maintain these lands as open space to conserve natural floodplain functions. However, the high projected costs of around $39 million, demolition requirements, and the need for unanimous approval from property owners made this alternative less feasible compared to the drainage system implementation. b. Construction of Concrete Channels: Another alternative examined the construction of two concrete channels parallel to Gordy Road, Reppert Street, and Miles Road leading to Galveston Bay. While this option offered increased runoff velocity and potential capacity improvements, limitations in size and high estimated costs of approximately $12 million made it less practical compared to the new drainage system. Risks Associated with No Action: Opting for no action would result in perpetuating the existing risks and vulnerabilities. This approach would subject the project area to continued threats of flooding, endangering residents, businesses, and infrastructure. The absence of mitigation efforts would heighten safety concerns, potentially leading to increased insurance claims, property loss, health hazards like mold, and compromised emergency service access during rain events, exacerbating the dangers faced by Bacliff residents. In summary, the new drainage system emerges as the most effective solution to mitigate flooding in the project area. Its enhanced drainage capacity, cost-effectiveness compared to alternative projects, and crucial role in safeguarding lives, properties, and community well-being make it the optimal choice for addressing the persistent flood-related challenges along Gordy Road, Reppert Street, and Miles Road in Galveston County, Texas.

Please identify the entity that will perform any long-term maintenance and provide a maintenance, schedule and cost information. The subapplicant or owner of the area to be mitigated is responsible for maintenance (including costs of long-term care) after the project is completed?

The long-term maintenance of a newly implemented drainage system along Gordy Road, Reppert Street, and Miles Road in Galveston, Texas, will fall under the responsibility of Galveston County and relevant municipal authorities. Here are the key entities that will handle the ongoing maintenance of the

	drainage system: Public Works Department: - The Public Works Department will be responsible for the maintenance and upkeep of the new drainage system. They will oversee routine inspections, cleaning, and repairs to ensure proper functioning. Contracted Maintenance Services: -Galveston County may outsource the maintenance of the new drainage systems, to private contractors or specialized firms. These contractors will be experienced in performing routine inspections, cleaning, and necessary repairs as part of a service agreement which will need to be negotiated following the engineering and design of the new drainage system.
Additional comments (optional)	**Implementing nature-based solutions (NBS) for the new stormwater drainage system along Gordy Road, Reppert Street, and Miles Road in Galveston County, Texas, will involve integrating natural elements and ecological processes into the design to manage stormwater runoff more sustainably. The implementation of these measure will be considered following the Preliminary Studies and Assessments phase as well as the Engineering and Design phase. Here are some potential locations and strategies for incorporating NBS we included in our preliminary cost estimates: Green Infrastructure Along Roadsides: - Rain Gardens and Bioswales: Implementing rain gardens or bioswales along roadways can help capture and filter stormwater runoff. These vegetated areas absorb water, reduce runoff velocity, and filter pollutants before the water enters the drainage system. - Permeable Pavements: Using permeable materials for sidewalks or parking areas allows rainwater to infiltrate into the ground, reducing surface runoff. Riparian Buffers: - Vegetative Buffers: Establishing vegetated buffers along waterways or drainage channels to help stabilize soil, prevent erosion, and filter pollutants before water reaches these areas. Erosion Control Measures: -Plantings and Root Systems: Using native vegetation with deep root systems aids in stabilizing soil, preventing erosion, and improving infiltration. Education and Awareness Initiatives: -**

Community Engagement: Educating residents about the benefits of nature-based solutions, involving them in maintenance efforts, and promoting sustainable practices will foster community ownership and support for NBS. To determine specific locations and the most suitable NBS for the Gordy Road, Reppert Street, and Miles Road area, it's crucial to conduct site assessments, considering factors such as soil conditions, topography, available space, existing infrastructure, and community needs. Collaboration with local stakeholders, environmental experts, landscape architects, and community members can help identify the most effective NBS interventions for this drainage system. Additionally, adhering to best practices and ensuring proper maintenance of these natural elements will be key to the long-term success in managing stormwater and promoting ecological resilience in the area.

Attachments

Filename	Date uploaded	Uploaded by	Label	Description	Action
Bacliff Flooding Event - June 4 2021 Survey Results.pdf	03/04/2025	mike.singh@iem.com	Scope of Work Attachments	Damage Assessment Survey of Structure following June 4, 2021, extreme rain event.	
Grey Flooded Home.jpg	03/04/2025	mike.singh@iem.com	Scope of Work Attachments	Grey Flooded Home	
Rescue Walkers.jpg	03/04/2025	mike.singh@iem.com	Scope of Work Attachments	Rescue Walkers	
Bayview Municipal Utility District .png	03/04/2025	mike.singh@iem.com	Scope of Work Attachments	Environmental Working Group Organization website snippet showing the population served by the	

Filename	Date uploaded	Uploaded by	Label	Description	Action
				Municipal Utility District located within the project parameters.	
Rescue Truck at House.jpg	03/04/2025	mike.singh@iem.com	Scope of Work Attachments	Rescue Truck at House	
Conceptual Design Drawing.pdf	03/04/2025	mike.singh@iem.com	Scope of Work Attachments	Galveston County Drainage Project - Conceptual Design Drawing	
Flood Event Jan. 5th 2024.pdf	03/04/2025	mike.singh@iem.com	Scope of Work Attachments	Flooding during high rain event on January 5th, 2024.	
FIRMette.pdf	03/04/2025	mike.singh@iem.com	Scope of Work Attachments	FIRMette	
Assurances for Non-Construction Programs (SF-424B).pdf	03/04/2025	mike.singh@iem.com	Scope of Work Attachments	Assurances for Non-Construction Programs (SF-424B)	
Assurances for Construction Programs (SF-424D).pdf	03/04/2025	mike.singh@iem.com	Scope of Work Attachments	Assurances for Construction Programs (SF-424D)	
Certification Regarding Lobbying (20-16C).pdf	03/04/2025	mike.singh@iem.com	Scope of Work Attachments	Certification Regarding Lobbying (20-16C)	
Hwy 146 Intersection.jpg	03/04/2025	mike.singh@iem.com	Scope of Work Attachments	Hwy 146 Intersection	
TDEM - MAINTENANCE AGREEMENT - EXECUTED.docx	03/04/2025	mike.singh@iem.com	Scope of Work Attachments	TDEM - MAINTENANCE AGREEMENT - EXECUTED	

Filename	Date uploaded	Uploaded by	Label	Description	Action
1.5.2024 Flooded house.jpg	03/04/2025	mike.singh@iem.com	Scope of Work Attachments	1.5.2024 Flooded house	
Bacliff Damage History Narrative.docx	03/04/2025	mike.singh@iem.com	Scope of Work Attachments	Bacliff Damage History Narrative	
1.5.2024 - Flooding in Bacliff.jpg	03/04/2025	mike.singh@iem.com	Scope of Work Attachments	1.5.2024 - Flooding in Bacliff	
Updated Bacliff Flood Damage Map.jpg	03/04/2025	mike.singh@iem.com	Scope of Work Attachments	Updated Bacliff Flood Damage Map	

Continue

2024 BRIC Galveston County Bacliff Drainage Project

Status: Pending SAR signature

Budget

Budget cost estimate should directly link to your scope of work and work schedule. You must add at least one item(s) greater than 0 for your cost estimate. As necessary, please adjust your federal/non-federal cost shares, and add the non-federal funding source(s) you are planning to use this project. Once you have completed this section, please click the Continue button at the bottom of this page to navigate to the next section.

Add budget cost types and item(s)

First, click the Add cost type button below to add cost type cost estimate and then click the Add item(s) button to add the item(s) for the cost estimate.

Grand total: $16,651,110.44

Budget type: Construction

▸	**Cost type: Cost estimate**	**$16,551,110.44**
▸	**Cost type: Management cost**	**$100,000.00**

Program income (optional)

Cost share

Cost share or matching means the portion of project costs not paid by federal funds.

Proposed federal vs. non-federal funding shares
Hazard mitigation assistance (HMA) funds may be used to pay up to 75% federal share of the eligible activity costs. Building Resilient Infrastructure and Communities (BRIC), Economically Disadvantaged Rural Communities (EDRCs) and Community Disaster Resilience Zones (CDRZs) may be eligible for up to 90% federal share. Flood Mitigation Assistance (FMA) and severe repetitive loss (SRL) properties may be eligible for up to 100% federal share. Repetitive loss (RL) properties may be eligible for up to 90% federal share.

Cost estimate

	% Percentage	$ Dollar amount

Is this an Economically Disadvantaged Rural Community or Community Disaster Resilience Zone? This determines your federal/non-federal share ratio. No	**Proposed federal share**	**75.00**	**12413332.83**
	Proposed non-federal share	**25.00**	**4137777.61**
			Based on total budget cost: $16,551,110.44

Management cost

	% Percentage	$ Dollar amount
Proposed federal share	**100.00**	**100000.00**
Proposed non-federal share	**0.00**	**0.00**
		Based on total budget cost: $100,000.00

Non-federal funding sources here

That portion of the total costs of the program provided by the non-federal entity in the form of in-kind donations or cash match received from third parties or contributed by the agency. In-kind contributions must be provided and cash expended during the project period along with federal funds to satisfy the matching requirements.

Funding source	% Non-federal share by source	Funding amount
Funding source: Galveston County General Funds	**100.00%**	**$4,137,777.61**

Additional comments.

Please view the attached Budget Narrative for an itemized breakdown of each cost type.

Attachments

Filename	Date uploaded	Uploaded by	Label	Description	Action
SF424 C- Drainage Project Construction Form.pdf	03/04/2025	mike.singh@iem.com	Budget Attachments	SF - 424C	
Match Commitment Letter.docx	03/04/2025	mike.singh@iem.com	Budget Attachments	Match Commitment Letter	
Budget Narrative with RS Means Breakdown.xlsx	03/04/2025	mike.singh@iem.com	Budget Attachments	Budget Narrative with RS Means Breakdown	
Budget Narrative.pdf	03/04/2025	mike.singh@iem.com	Budget Attachments	Budget Narrative	

Continue

2024 BRIC Galveston County Bacliff Drainage Project

Status: Pending SAR signature

Location

Introduction

Project location

Provide a detailed description of the proposed project's location.	**The proposed project locations are spread amongst Gordy Road, Reppert Street, and Miles Road. The exact location of where the proposed project will be constructed will be determined following the assessment and analysis of the site and evaluation of the current drainage infrastructure.**
Latitude	**29.517873**
Longitude	**-094.992151**

Attachments

Filename	Date uploaded	Uploaded by	Label	Description	Action
Project Location Map.png	03/04/2025	mike.singh@iem.com	Project Location Attachments	Project Location Map	
Project Location.pdf	03/04/2025	mike.singh@iem.com	Project Location Attachments	Project Location	

Project benefiting area

Provide a detailed description of the proposed project's benefiting area.	**The properties and structures located within the boundary as displayed on the attached Benefiting Area Map, have been or are susceptible to localized flooding due to high rain events. The attached map shows the preliminary project footprints of the location where the new drainage infrastructure is to be implemented.**

Attachments

Filename	Date uploaded	Uploaded by	Label	Description	Action
Benefiting Area Map.pdf	03/04/2025	mike.singh@iem.com	Location project benefiting area Attachments	Benefiting Area Map	
Benefitting Area Map.zip	03/04/2025	mike.singh@iem.com	Location project benefiting area Attachments	Benefiting Area Map	

Project impact area

Provide a detailed description of the proposed project's impact area.	**The residents living on streets running adjacent to Gordy Road, Reppert Street, and Miles Road will indirectly benefit from the mitigation activity because these roads/streets allow access to their properties. Additionally, Highway 146 is a major evacuation route for the residents residing along the flood prone areas which can pose a challenge to access during high rain events.**

Attachments

Filename	Date uploaded	Uploaded by	Label	Description	Action
Project Impact Area.png	03/04/2025	mike.singh@iem.com	Location project impact area Attachments	Project Impact Area	
Impact Area Map.pdf	03/04/2025	mike.singh@iem.com	Location project impact area Attachments	Project Impact Area	

Project site inventory

Does this project subapplication propose to mitigate a property/structure(s)? (Examples: residential home, commercial building, bridge, fire station, levee, pumping station, wastewater treatment plant, telephone pole, electric line, etc.)	**Yes**
Please describe how the propert(ies) will be selected upon subgrant approval. (Example: Saferoom Lottery Project, Fix the Bricks Project)	**The selection of properties to benefit from mitigating flooding will involve a comprehensive evaluation process that considers various factors. Here's an overview: - Vulnerability Assessment: Properties prone to flooding will be identified through vulnerability assessments, considering historical flood data, elevation levels, and susceptibility to stormwater runoff. - Risk Analysis: A risk analysis will help determine the severity and frequency of flooding, guiding the selection process. - Community Input: Input from residents, homeowners' associations, or community stakeholders will influence property selection. This involves surveys, public meetings, and feedback mechanisms to identify areas most affected and in need of mitigation. - Infrastructure Considerations: Properties in areas where implementing mitigation measures, such as the proposed drainage system, will benefit multiple properties and contribute to broader flood control strategies.**

Please download the excel template, and then fill out the template with building or infrastructure data.

Continue

2024 BRIC Galveston County Bacliff Drainage Project

Status: Pending SAR signature

Schedule

Specify the work schedule for the mitigation activities.

Add tasks to the schedule

Please include all tasks necessary to implement this mitigation activity; include descriptions and estimated time frames.

Task Name	Start Month	Task Duration (in Months)
Grant Award Acceptance	1	1 months

Task Description
Galveston County Commissioners Court will review and accept the grant award.

Task Name	Start Month	Task Duration (in Months)
Final Grant Award Contract Execution	2	1 months

Task Description
After Galveston County Judge signs contract it will be sent to TDEM for final execution.

Task Name	Start Month	Task Duration (in Months)
Acquistion	3	6 months

Task Description
Initiation of acquisition of necessary lot in Bacliff for Reppert will begin right away to accommodate any unforeseen issues.

Task Name	Start Month	Task Duration (in Months)
Engineer Procurement (Go/No-Go Milestone #1)	9	3 months

Task Description

Federal Procurement with the Galveston County process takes three months from bid advertisement to contract execution.

Task Name
Engineer Design

Start Month
12

Task Duration (in Months)
8 months

Task Description
Engineer Design/Permitting

Task Name
Construction Procurement (Go/No-go Milestone #2)

Start Month
20

Task Duration (in Months)
3 months

Task Description
Federal Procurement with the Galveston County process takes three months from bid advertisement to contract execution. Procurement may result in two, or more, construction task-order driven contracts to accommodate the need to complete two projects simultaneously for grant period of performance constraints. With Reppert, construction to begin at the point of acquisition of property.

Task Name
Construction Kick-Off Meeting(s) and Notice(s) to Proceed (NTP)

Start Month
23

Task Duration (in Months)
1 months

Task Description
Construction Kick-Off Meeting(s) and Notice(s) to Proceed (NTP)

Task Name
Construction Miles and Gordy Roads

Start Month
24

Task Duration (in Months)
8 months

Task Description
Construction Miles and Gordy Construction of Miles and Gordy to occur simultaneously.

Task Name
Contract Task Order for Reppert

Start Month
29

Task Duration (in Months)
3 months

Task Description
As soon as acquisition is complete, the construction will be either procured or assigned to one of the contracted companies through a Task Order.

Task Name	**Start Month**	**Task Duration (in Months)**
Construction of Reppert Street	32	3 months

Task Description
Construction of Reppert Road

Task Name	**Start Month**	**Task Duration (in Months)**
Closeout	35	2 months

Task Description
Closeout

Estimate the total duration of your proposed activities (in months).	**36**

Proposed project start and end dates

Start Date	**2025-04-18**
End Date	**2028-04-18**

Continue