

Subapplicant information

Name of federal agency

FEMA

Type of submission

Application**GREENVILLE CITY FINANCIAL SERVICE**

200 W 5TH ST

GREENVILLE, NC 27858 United States

State	DUNS #	EIN #
NC	072013451	566000229

Subapplicant type

Local Government

Is the subapplicant subject to review by Executive Order 12372 Process?

No - Not selected

Is the subapplicant delinquent on any federal debt?

No**Contact information****Subrecipient Authorized Representative (SAR)**

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Point(s) of contact

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	Fax		

Community

Please provide the following information. If the Congressional district number for your community does not display correctly, please contact your State NFIP coordinator.

Add Communities

Please find the community(ies) that will benefit from this mitigation activity by clicking on the Find communities button. If needed, modify the Congressional District number for each community by entering the updated number under the U.S. Congressional District column for that community. When finished, click the Continue button.

NOTE: You should also notify your State NFIP coordinator so that the updated U.S. Congressional District number can be updated in the Community Information System (CIS) database.

Community name	County code	CID number	CRS community	CRS rating	U.S. Congressional District
GREENVILLE, CITY OF	147	370191	Y	7	1,2

Please provide any additional comments below (optional).

The City of Greenville (City) is the county seat of and the most populous City in Pitt County, North Carolina (see the attached City Map, Attachment 1). Over 88,728 people reside in Greenville across 36 square miles, most of which is residential. Located less than 60 miles from North Carolina's coastline, Greenville is considered a frontline community—communities that experience the first and worst impacts of the climate crisis. Greenville is vulnerable to severe storms and climate-driven disasters because of its proximity to the coast. The City is committed to taking proactive measures to protect residents from infrastructure failure, flood risks and climate change, evidenced in the City's many nature-based solutions to manage flooding. The East Fire Tower Road Drainage Improvements and Stream Restoration Project represents an important opportunity to protect critical transportation routes, remove properties from the 100-year floodplain, and prepare Greenville for future severe storm events and the impacts of climate change. The City's Engineering Department is submitting this application and will oversee the construction of the project. The City initially identified this project need in the Fork Swamp Watershed Master Plan. The project will incorporate nature-based solutions with community-wide environmental benefits, including riparian zone rehabilitation with native vegetation. The proposed drainage improvements and stream restoration intentionally focuses on floodplain improvement through bio-engineered solutions rather than channeling the stream using grey infrastructure methods.

Attachments

Filename	Date uploaded	Uploaded by	Label	Description	Action
List of attachments.pdf	01/04/2023	edward.fernandez@icf.com	Community Attachments	List of Attachments	
Attachment 1_City_Map.pdf	11/18/2022	edward.fernandez@icf.com	Community Attachments	Map of the City of Greenville	

Mitigation plan

Please provide your plan information below.

Is the entity that will benefit from the proposed activity covered by the current FEMA approved multi-hazard mitigation plan in compliance with 44 CFR Part 201? **Yes**

Please provide plan detail

Plan name	Plan type	Plan approval date
Neuse River Regional Hazard Mitigation Plan	Local Multijurisdictional Multi-Hazard Mitigation Plan	09/18/2020

Proposed activity description

The proposed activity will increase the flow capacity and restore the natural function of two streams that cross East Fire Tower Road and threaten to damage the roadway and flood surrounding residential areas in a 25-year rain event. The activity aligns with the Neuse River Regional Hazard Mitigation Plan (Attachment 2). The Neuse River Regional Plan covers five counties in eastern North Carolina and identifies flooding as a top hazard. Specifically, the proposed activity will advance Goal 1: "Promote the public health, safety, and general welfare of residents and minimize public and private losses due to natural hazards through local land development regulations, capital improvements, planning/investment, and proactive long-range planning regarding land use and post-disaster redevelopment." The proposed activity will implement a critical capital improvement project that will mitigate flood risk for 84 homes in the floodplain, therefore protecting the health and safety of property owners from future flood events. Additionally, the proposed project aligns with Goal 2: "Pursue funds to

reduce the risk of natural hazards to existing developments where such hazards are clearly identified, and the mitigation efforts are cost-effective." The proposed City of Greenville-Drainage Improvements and Stream Restoration at East Fire Tower Road project has demonstrated a positive return on investment for the project through a benefit-cost analysis, which indicates a 1.11 benefit-cost-ratio for the project. The project's benefit-cost analysis quantifies physical damage to homes, physical damage to East Fire Tower Road, roadway loss of function, and environmental benefits associated with stream restoration.

Please provide any additional comments below (optional).

The proposed activity was first identified as a need in the City of Greenville's Fork Swamp Watershed Master Plan (Attachment 3) and is consistent with the hazard mitigation plan's goals and recommendations. The Watershed Master Plan includes a prioritization list for both flood control and stream stabilization projects. This prioritization is based on factors such as public health and safety, street flooding severity, cost effectiveness, and water quality. The proposed East Fire Tower Road project is identified as priority under both flood control and stream stabilization categories in the Master Plan.

Attachments

Filename	Date uploaded	Uploaded by	Label	Description	Action
Attachment 2. Neuse River Regional Hazard Mitigation Plan (Excerpt).pdf	11/18/2022	edward.fernandez@icf.com	Mitigation Plan Attachments	Neuse River Regional Hazard Mitigation Plan (Excerpt)	
Attachment 3. Fork Swamp Watershed Master Plan (Excerpt).pdf	11/18/2022	edward.fernandez@icf.com	Mitigation Plan Attachments	Excerpt of the Fork Swamp Watershed Master Plan	

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)

City of Greenville-Drainage Improvements and Stream Restoration at East Firetower Road

Activities

Primary activity type

Stabilization and restoration

Primary sub-activity type

Floodplain and stream restoration

Primary sub-activity type

Floodplain and stream restoration

Secondary activity type (Optional)

Flood control

Secondary sub-activity type

Culvert

Tertiary activity type (Optional)

Utility and infrastructure protection

Tertiary sub-activity type

Roadway

Geographic areas description

Located in eastern North Carolina, the city of Greenville serves as the seat of Pitt County in the zip code 27834. Over 88,728 people reside in Greenville across 36 square miles, most of which is residential. Located less than 60 miles from North Carolina's coastline, Greenville is considered a frontline community—communities that experience the first and worst impacts of the climate crisis. As indicated in the North Carolina Climate Science Report (Attachment 4), Greenville is vulnerable to severe storms and climate-driven disasters because of its proximity to the coast. The City is committed to taking proactive measures to protect residents from infrastructure failure, flood risks, and climate change. The East Fire Tower Road Drainage Improvements and Stream Restoration Project represents an opportunity to

protect critical transportation lifelines, remove properties from the 100-year floodplain, and prepare Greenville for future severe storm events and the impacts of climate change. Greenville and surrounding jurisdictions are also growing at an unprecedented rate; between 2000 and 2020, Greenville and neighboring jurisdiction Winterville had population increases of 49.4% and 98.0% respectively. This has catalyzed Greenville to focus on mitigating flood risk, as future development presents drainage challenges for the city. The proposed activity is a floodplain improvement project between 35.562073 latitude and -77.366280 longitude (to the north) and 35.548534 latitude and -77.374118 longitude (to the south) that will implement drainage improvements and flood protection for the community. This proposed flood reduction and stream restoration project involves major upgrades in two locations at East Fire Tower Road: a culvert and floodplain benching where Fork Swamp Unnamed Tributary 3 (FSUT3) crosses the roadway, and significant floodplain benching where Fork Swamp Main Branch crosses the roadway. The project will provide a 50-year level of service on East Fire Tower Road and reduce flooding impacts to several surrounding homes which are currently located in the mapped floodplain along the two streams. The attached Project Location Map (Attachment 5) shows the project's location relative to residential and commercial properties. The attached photo log (Attachment 6) also demonstrates where flooding may occur.

Community lifelines

Primary community lifeline

Transportation

Primary sub-community lifeline

Highway/roadway/motor vehicle

Secondary community lifeline (optional)

Food, water, shelter

Secondary sub-community lifeline

Shelter

Tertiary community lifeline (optional)

Safety and security

Tertiary sub-community lifeline

Fire service

Hazard sources

Primary hazard source

Flooding

Secondary hazard source (optional)

Infrastructure failure

Tertiary hazard source (optional)

Severe storm

Is this a phased project?

Yes

Are you doing construction in this project?

Yes

Percentage of population impacted

37.19

Provide detailed description of population impacted

The City of Greenville's 2021 total population was 88,728. The project's benefitting population includes those affected by roadway and home flooding, as well as the service area of Fire Station #7. Approximately 33,000 people will benefit from protecting East Fire Tower Road, which represents the Annual Average Daily Traffic (AADT) count provided by the North Carolina Department of Transportation (NCDOT) for the roadway (Attachment 3). Additionally, there are 90 homes that will see reduced flood depths due to the project. This is estimated to be 180 residents based on the 2020 household size estimate for the City of Greenville from the American Community Survey. Finally, the service area for Fire Station #7, the fire station where service will be delayed due to flooding on East Fire Tower Road, has a population of 25,045. See the attached Properties in Floodplain Map (Attachment 33) and SVI Map (Attachment 28) for visualization of these service areas. As these benefitting areas overlap, the City assumes that at least 37% of the City's population will benefit (representative of the 33,000 roadway users). The project will also provide community-wide benefits from an environmental perspective and contribute to better floodplain function and increased water

quality throughout the watershed. Riparian restoration and native vegetation stabilization will also contribute to water quality throughout the watershed. Additionally, within this impacted population are residents whose characteristics can classify them as part of a disadvantaged community. FEMA defines a disadvantaged community based on a combination of variables, including disproportionate impacts from climate change, low income, high poverty, lack of access to healthcare, racial and ethnic segregation, and unemployment. According to the Center for Disease Control (CDC) Social Vulnerability Index data for the project service area, approximately 34 percent of the benefitting area represent minority populations, and nearly 30 percent are low-to-moderate income individuals (Attachment 28). Compared to national averages, the project service area contains individuals with slightly greater vulnerabilities. The service area contains roughly 10% more persons below the poverty line (22.02%) when compared to national averages (12.8%).

Provide a clear and detailed description of your proposed activity

The City proposes to upgrade culverts and perform floodplain benching along Fork Swamp Unnamed Tributary 3 (FSUT3) and the Fork Swamp mainstem to protect East Fire Tower Road and neighboring homes against flooding. The proposed project will mitigate this risk while also improving natural floodplain function. Project activities and their locations along East Fire Tower Road can be seen in Attachment 5. This project was identified and ranked as a priority project in the City's Fork Swamp Watershed Master Plan. East Fire Tower Road is a major thoroughfare for the City with an annual average daily traffic (AADT) of 33,000. The project will mitigate flooding at two sections of the road. The north-eastern section (Location 1 in Attachment 5) is where FSUT3 passes under East Fire Tower Road. The current culvert that channels the tributary under the road is insufficiently sized and flood water overtops the roadway after a 2-year rain event, impeding traffic. The City's stormwater models and expert judgement expect that the culvert will likely fail in a 50-year rain event. The proposed project will upsize the culvert at this crossing with a double 14' x 7' reinforced concrete box structure, which will allow flow from a 50-year rain event to pass without overtopping the roadway. Improvements at the FSUT3 stream crossing will also include 3,240 linear feet of floodplain benching, split upstream and downstream of the crossing (990 linear feet upstream in the left overbank, and 2,250 linear feet downstream of the crossing in both overbanks, shown in Location 2 in Attachment 5). The second project location is focused on the Fork Swamp Main Stem crossing with East Fire Tower Road, less than 1 mile southwest of the FSUT3 crossing. The existing bridge at the road's crossing with the Fork Swamp is currently overtopped in a 25-year precipitation event. To provide a 50-year level of service for the roadway, the City proposes to reduce the stream's tailwater by grading floodplain benches downstream of East Fire Tower Road. Specifically, floodplain benching is proposed in the right overbank for approximately 2,000 linear feet. Without the proposed drainage improvements and floodplain restoration, East Fire Tower Road is increasingly at risk of flooding as climate change causes more frequent and severe precipitation events in Greenville. Furthermore, the proposed floodplain improvements will mitigate flooding for 90 homes that sit in the floodplain between the two stream crossings, specifically those on Treetops Circle, East Fire Tower Road, and Summerhaven Drive. Stormwater models indicate that the project could remove 26 properties from the 100-year floodplain. The proposed floodplain benching will consider natural channel design and other nature-based solutions. The project will consider replanting the riparian zone buffer with a riparian seed mix and herbaceous and native woody shrubs and trees. Natural fiber matting can also be used for reinforcement and to improve surface stabilization. The riparian vegetation can also offer water quality protection benefits. The replanted riparian vegetation can help to maintain and improve water quality by functioning as a buffer, filtering out sediments and debris. This would improve water quality and protect wildlife habitat. Greenville's approach will emphasize the use of natural, locally available materials that will emulate the morphology of natural stream channels while simultaneously providing additional capacity for flood waters. Further technical details for the project are provided in the Preliminary Engineering Report (Attachment 7), which includes cross-sections for the culvert improvements and elevation charts to demonstrate the proposed change in grading within the stream beds to allow for more floodplain storage.

How will the mitigation activity be implemented?

The City of Greenville's Engineering Department will manage the proposed project and implementation of the grant. The City will contract with a qualified design engineer and construction contractor through an open procurement process that meets 2 CFR 200 requirements. The City of Greenville proposes implementing the project in two phases, in accordance with FEMA's guidelines on phased projects. Phase 1 will include geomorphic assessment

and preliminary design, a hydrologic and hydraulic study, permit drawings and application submittal, permitting, and construction drawings and specifications. Permits will be obtained from all appropriate local, state, and federal agencies for construction activity, stormwater discharges, floodplain management, land disturbance, drainage review and approval, and environmental quality reviews. Phase 1 will also include federal environmental reviews as required, and final deliverables will include construction drawings, a written scope of work, updated cost estimate for construction, and a revised benefit-cost analysis to ensure project cost-effectiveness and continued compliance with the BRIC program. Due to the stream restoration improvements in the floodway and the expected changes to the Special Flood Hazard Area, the City will conduct a No-Rise study to determine if a Letter of Map Revision will be needed prior to beginning construction. Upon completion of Phase 1 and approval from FEMA, Phase 2 will consist of bidding and contracting, project construction, and project closeout. Site preparation of the floodplain benching measures will necessitate a staging area for material and equipment delivery, which is reflected in the attached Preliminary Engineering Report (Attachment 7). The City will coordinate with North Carolina Department of Public Safety to close out the project after all construction is complete.

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.):

The proposed drainage improvements and stream restoration at East Fire Tower Road will increase the flow capacity of the FSUT3 culvert, as well as the hydraulic storage capacity along the riparian corridors of both streams that threaten the project area. This will reduce flooding impacts to several surrounding homes and minimize or eliminate instances of floodwater overtopping East Fire Tower Road. Additionally, the proposed project will improve stream stabilization and restoration by implementing intensive revegetation with appropriate native riparian plant species. These actions will prevent future flooding, reduce sediment loading, and reduce vegetation loss, therefore protecting East Fire Tower Road and dozens of homes from flooding. This project will create a total of 66,700 cubic yards, or approximately 41 acre-feet, of new hydraulic storage capacity within the riparian corridors of the Fork Swamp watershed. Hydraulic analysis of the proposed flood mitigation actions (Appendix E) shows that the measures will prevent roadway overtopping up to at least the 50-year precipitation event and reduce home flooding expected for the 100-year rain event. These improvements will greatly reduce risk of partial or total failure of the culvert structure at FSUT3, and subsequent roadway failure and traffic disruption as the culvert is repaired or replaced. Furthermore, stormwater models indicate that the proposed project will reduce flood risk for 90 residences, and may remove 26 properties from the 100-year floodplain. Specifically, the resulting upstream water surface elevation will be decreased by as much as 1.94 feet in the 25-year storm event and 0.77 feet in the 100-year storm event. See the risk reduction and increased resiliency attachment (Attachment 8) for more information.

Who will manage and complete the mitigation activity?

The City's Engineering department will manage and complete the mitigation activity with support from design consultants and construction contractors. The City's Grants Coordinator and Financial Services department will support grant implementation and monitoring with contributions from the City's Attorney's Office. The City, and specifically the Engineering department, has prior experience with projects of similar scope and scale. For example, the City of Greenville successfully completed the \$33-million Town Creek Culvert project in October 2020, on time and under-budget. The project addressed drainage issues along a 250-acre downtown corridor caused by the undersized, failing culvert system. The daylighting project included many green infrastructure components, such as wetland restoration, creation of bioretention cells, and stream stabilization. By coordinating with utility plans and accounting for future development, the City believes the project will be able to handle additional stormwater runoff for years to come. In terms of timing, project planning began in Fall 2013 and was approved by City Council in October 2017. Construction spanned two and a half years. See Attachment 9 for the City's organizational structure.

Will the project address the hazards identified and what risks will remain from all hazards after project implementation (residual risk)?

Currently, East Fire Tower Road and surrounding homes between FSUT3 and Fork Swamp are at risk of flooding during 25-, 50-, and 100-year rain events. East Fire Tower Road is the most downstream crossing for FSUT3. Currently, the twin 10' X 7' corrugated metal ellipse culvert pipes have a 2-year level of service. The 5-year and 10-year storm events do not overtop the road, instead building up significant hydraulic head behind the culverts and creating the potential for severe scour. Storms of greater intensity pose the risk of overtopping East Fire Tower Road for brief periods of time during the events. Larger rainfall events, such as those recurring at the 25-year, 50-year, 100-

year interval, pose an increasing risk of culvert failure due to partial collapses of the pipes and/or roadway damage from excessive scour during storm events, with the largest storms posing an increasing likelihood that the culvert may be completely washed out. In addition to the problems faced at FSUT3, drainage and hydraulic improvements are also needed where the Fork Swamp mainstem crosses East Fire Tower Road. The existing bridge at the crossing is in good condition and will accommodate a 25-year storm. However, storms of greater intensity (50-year or more) pose a risk of short-term losses of service for East Fire Tower Road due to overtopping and the risk of longer losses of service that may result from repairs to address structural damage inflicted by overtopping storm events. Due to the impacts of climate change, the City is predicted to experience more frequent and severe precipitation events. Specifically, Greenville could receive up to a 130% annual increase in the number of days with precipitation of 3 inches or greater by midcentury from a 1996-2015 baseline average. This data can be found in the North Carolina Climate Science Report (Attachment 4). These predicted conditions will increase the threat of flooding along East Fire Tower Road. To mitigate these risks, the project proposes a major capacity increase of the culvert where FSUT3 crosses East Fire Tower Road. It also includes extensive floodplain benching along approximately 990 LF (on the left side) of the channel reach upstream of East Fire Tower Road and along approximately 2250 LF (on both sides) of the channel reach downstream of the crossing. The project also involves floodplain benching along the Fork Swamp mainstem (right side), just downstream of where it crosses East Fire Tower Road. This proposed project addresses flood risk along FSUT3 and Fork Swamp, mitigating risk to a thoroughfare with an AADT of 33,000, removing 41 properties from the 100-year floodplain, and reducing the risk of delays at Greenville Fire Station #7. The project will address risk to three community lifelines: Transportation, Food, water and shelter, and Safety and security. Transportation: East Fire Tower Road is a major thoroughfare for the City with an annual average daily traffic (AADT) of 33,000. The project will mitigate flooding at two sections of the road, bringing the service level up from a 2-year level of service (FSUT3) and a 25-year level of service (Fork Swamp) to a 50-year level of service for both sections. Food, water, shelter: The project will remove 26 properties from the 100-year floodplain and reduce flood depths for 90 properties adjacent to the project. Safety and security: The project will reduce the response time and minimize the need for rerouting at Greenville Fire Station #7 during flood events. In restoring and stabilizing FSUT3 and Fork Swamp, the City of Greenville will mitigate the risks to these lifelines.

Does the mitigation activity incorporate nature-based solutions?

Yes

When will the mitigation activity take place?

Greenville estimates a 35-month schedule for the construction activities once notice to proceed is obtained. Greenville assumes that FEMA will announce FY2022 funding awards for project activities in January 2024. The project is expected to be completed by December of 2027. The project will be phased, with a subrecipient agreement expected to be finalized by March of 2024. The total duration of Phase 1 is expected to be 18 months, with time dedicated towards design and permitting. The last two months of Phase 1 are reserved for review and developing a Phase 2 agreement. Phase 2 is expected to last 17 months, with the first three months being spent advertising and awarding a construction contract. Construction is expected to take 12 months, while the last two months of the project are reserved for project close-out.

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?

To reach the preferred project alternative, the City performed multiple outreach activities with the public and stakeholders. Engagement first occurred prior to this application. In 2016, the City identified and prioritized stream stabilization projects as part of the Fork Swamp Watershed Master Plan. The East Fire Tower Road solutions were identified as one of the highest priorities and assigned a high risk for the community. These projects were identified with help from the public and city staff, who provided information on historical flooding and erosion problems within the watershed. The input from public and city staff formed the basis of the project idea and concept plans. The project included a robust campaign to engage stakeholders and the public through a number of mediums in order to receive information regarding problem areas within the watershed, and feedback on areas where projects were identified. A Public Involvement Plan (PIP) was developed that outlined the process by which the public and stakeholders were engaged in the watershed master plan. The general public was engaged through use of social media, the project website (www.greenvillewamp.com), questionnaires, an open house, and one-on-one onsite or phone interviews. Several alternatives were considered for this project, including the "No Action" alternative and a floodproofing alternative. The "No Action"

alternative was determined to be infeasible because it would not provide an adequate level of protection for the roadway and homes in the 100-year floodplain. Two additional alternatives were considered for the proposed mitigation solution: - Removing culvert capacity improvements from the solution. While this resulted in a reduced project cost, the remaining floodplain benching improvements would not address risk of culvert failure in a large flood event, which would subsequently damage East Fire Tower Road and cause long-term disruption while the culvert is being repaired. Therefore, the City deemed this alternative insufficient to address flood risk. - Considered alternative solutions to increase culvert hydraulic capacity, including adjusting the culvert box size and considering a bridge solution. However, these solutions were found not to meet site constraints and were cost-prohibitive compared to the proposed solution. Therefore, the City's proposed mitigation activity for Drainage Improvements and Stream Restoration at East Firetower Road is the best solution to address flood risk in a cost-effective manner for the project area.

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 City's Engineering department will be responsible for long-term maintenance of the project. The City currently maintains the Fork Swamp stream and FSUT3 tributary and has a budget for major repairs and annual inspections through the City's overall stormwater asset management and maintenance program. Nevertheless, the City expects that additional maintenance costs will be needed for vegetation control; approximately \$12,000 per year. This assumes a 4-person crew will work for 4 hours per month to maintain the stream segment. Future maintenance needs may include occasionally removing blockages and debris, repairing eroded areas (which should be reduced by the proposed project), trash and debris removal, and vegetation management. See the attached maintenance agreement letter (Attachment 10).

Additional comments (optional)

The proposed mitigation activity will include three project components: - Fork Swamp Tributary (FSUT3) Culvert Capacity Improvement – upsized the existing culvert with a double 14' x 7' reinforced concrete box culvert (RCBC). This upgrade is labeled as Activity 1 in Attachment 5, Proposed Project Activities Map. - Fork Swamp Tributary (FSUT3) Floodplain Benching – provide a total of 3,240 linear feet of floodplain benching upstream and downstream of the crossing at East Fire Tower Road. The floodplain benching is labeled as Activity 2 in Attachment 5. - Fork Swamp Mainstem Floodplain Benching – provide a total of 2,000 linear feet of floodplain benching just downstream of the East Fire Tower Road bridge at the mainstem crossing. This floodplain benching is labeled as Activity 3 in Attachment 5. The East Fire Tower Road Drainage Improvements and Stream Restoration project meets all of FEMA's priorities for the BRIC program, including the following: - Mitigating risk to public infrastructure. The proposed project will protect a critical thoroughfare that could affect 33,000 residents if service was compromised due to culvert and roadway failure caused by flooding. - Incentivizing resilient investments in disadvantaged communities, as referenced in EO 14008. The proposed project's benefitting area has a CDC Social Vulnerability Index of 0.464, meaning that 46% of residents that will benefit from the project meet social vulnerability criteria and are more susceptible to long-term impacts from climate change. The SVI represents Fire Station #7's service area. - Incorporate nature-based solutions. The proposed drainage improvements and stream restoration intentionally focuses on floodplain improvement through bio-engineered solutions rather than channeling the stream using grey infrastructure methods. - Enhance climate resilience and adaptation. The project will prevent further flood risk that may occur in the face of a 130% increase in heavy urban rain events expected in North Carolina. - Incentivize the adoption and enforcement of the latest published editions of building codes. The City of Greenville has adopted the latest version of the International Building Codes and has a BCEGS score of 4, which indicates that the community sufficiently enforces its building code. In working as a subapplicant to NCDPS's BRIC2022 award, the City of Greenville will also work to carry out projects in ways that produce high-quality work, avert disruptive and costly delays, and promote efficiency. In implementing the awarded project, the City of Greenville expects to use strong labor standards, including project labor agreements (PLAs) and community benefits agreements that offer wages at or above the prevailing rate and include local hire provisions. The City of Greenville will also prioritize in their procurement decisions employers who can demonstrate that their workforce meets high safety and training standards (e.g., 206 professional certification, licensure, and/or robust in-house training), that hire local workers and/or workers from historically-underserved communities, and who directly employ their

workforce or have policies and practices in place to ensure contractors and subcontractors meet high labor standards. Further prioritization will be offered to employers (including contractors and subcontractors) without recent violations of federal and state labor and employment laws. These practices will promote effective and efficient delivery of high-quality projects and support economic resilience through strong employment opportunities for workers. Such practices will reduce the likelihood of potential project challenges such as work stoppages or safety accidents, while ensuring a reliable supply of skilled labor and minimizing disruptions. That will, in turn, promote on-time and on-budget delivery within the period of performance outlined in the schedule section. Furthermore, among other requirements contained in 2 CFR 200, Appendix II, all contracts made in excess of \$100,000 with respect to a capital expenditure that involve employment of mechanics or laborers must include a provision for compliance with certain provisions of the Contract Work Hours and Safety Standards Act, 40 U.S.C. 3702 and 3704, as supplemented by Department of Labor regulations (29 CFR Part 5). Additionally, please see Attachment 35 for a summary of technical scoring criteria.

Attachments

Filename	Date uploaded	Uploaded by	Label	Description	Action
Attachment 5. Project Location Map.pdf	11/18/2022	edward.fernandez@icf.com	Scope of Work Attachments	Map of project location and conceptual layout of project components.	
Attachment 8. Criteria 1 (Risk reduction resilience).pdf	01/04/2023	edward.fernandez@icf.com	Scope of Work Attachments	Explanation of how the proposed mitigation activity meets Qualitative Criterion Number 1: Risk Reduction/Resilience Effectiveness	
Attachment 28. Criteria 4 (Population Impacted).pdf	01/04/2023	edward.fernandez@icf.com	Scope of Work Attachments	Explanation of how the proposed mitigation activity meets Qualitative Criterion Number 4: Population Impacted	
Attachment 7. Preliminary Engineering Report.pdf	11/18/2022	edward.fernandez@icf.com	Scope of Work Attachments	Detailed technical report describing project components, location, and benefits.	
Attachment 3. Fork Swamp Watershed Master Plan (Excerpt).pdf	11/18/2022	edward.fernandez@icf.com	Scope of Work Attachments	Fork Swamp Watershed Master Plan (Excerpt)	
Attachment 4. North Carolina Climate Science Report.pdf	11/18/2022	edward.fernandez@icf.com	Scope of Work Attachments	Details projected regional climate changes for the state of North Carolina.	
Attachment 10. Maintenance Agreement Letter.pdf	11/18/2022	edward.fernandez@icf.com	Scope of Work Attachments	Confirmation of the City of Greenville's acceptance of responsibility for routine maintenance following project completion.	
Attachment 35 - Technical Evaluation Criteria.pdf	01/17/2023	edward.fernandez@icf.com	Scope of Work Attachments	Summary of technical evaluation criteria for subapplication	
Attachment 33. Properties in Floodplain Map.pdf	11/18/2022	edward.fernandez@icf.com	Scope of Work Attachments	Properties in floodplain map	
Attachment 34. Resolution Authorizing Application.pdf	01/17/2023	edward.fernandez@icf.com	Scope of Work Attachments	City of Greenville Resolution authorizing BRIC application	
Attachment 9. City Organizational Structure.pdf	11/18/2022	edward.fernandez@icf.com	Scope of Work Attachments	Chart of the City of Greenville's organization structure	
Attachment 6. Photo Log.pdf	11/18/2022	edward.fernandez@icf.com	Scope of Work Attachments	Photos taken at the project location for the development of	

Filename	Date uploaded	Uploaded by	Label	Description	Action
				the Preliminary Engineering Report (PER).	

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 PHASE 1: Subrecipient Agreement	Start Month 1	Task Duration (in Months) 2 months	Task Description Ensure written agreement is in effect
Task Name PHASE 1: Geomorphic Assessment and Preliminary (30%) Design	Start Month 3	Task Duration (in Months) 3 months	Task Description Design activities for the construction solution.
Task Name PHASE 1: Permit Drawings (60% Design) and Application Submittal	Start Month 6	Task Duration (in Months) 3 months	Task Description Design activities through the 60% drawings milestone.
Task Name PHASE 1: Permitting Phase	Start Month 8	Task Duration (in Months) 6 months	Task Description Applying for and receiving permits during Phase 1.
Task Name PHASE 1: Construction Drawings (100% Design) and Specifications	Start Month 14	Task Duration (in Months) 3 months	Task Description Design activities to finalize the design and create a bid package.
Task Name PHASE 1: Phase 1 Review and Phase 2 Agreement	Start Month 17	Task Duration (in Months) 2 months	Task Description Review phase 1 and ensure agreement is in place for phase 2.
Task Name PHASE 2: Bidding and Contracting	Start Month 19	Task Duration (in Months) 3 months	Task Description Advertising bid documents, receiving and evaluating bids, and awarding a construction contract.
Task Name PHASE 2: Project Construction	Start Month 22	Task Duration (in Months) 12 months	Task Description

Construction activities related to the flood plain benching scope.

Task Name PHASE 2: Project Closeout	Start Month 34	Task Duration (in Months) 2 months
Task Description Final inspection and project closeout.		

Estimate the total duration of your proposed activities (in months). **35**

Proposed project start and end dates

Start Date **2024-01-01**
End Date **2027-11-30**

Introduction

Project location

Provide a detailed description of the proposed project's location.

The site of this mitigation activity is Greenville, North Carolina, zip code 27834. The proposed activity is a floodplain improvement project between 35.562073 latitude and -77.366280 longitude (to the north) and 35.548534 latitude and -77.374118 longitude (to the south) that will provide drainage improvements and flood protection for the community. This proposed flood reduction and stream restoration project involves a major upgrade of the culvert where Fork Swamp Unnamed Tributary 3 (FSUT3) crosses East Fire Tower Road. It also includes extensive floodplain benching along approximately 990 linear feet (on the left side) of the channel reach upstream of East Fire Tower Road and along approximately 2,250 linear feet (on both sides) of the channel reach downstream of the crossing. The project also involves floodplain benching along the Fork Swamp mainstem (right side), just downstream of where it crosses East Fire Tower Road, approximately 3,000 feet west of the FSUT3 crossing. The drainage areas for the two sites are nearly equal at approximately 2.1 square miles. The FSUT3 drainage is 82 percent urban land-use and 24 percent impervious area although wetlands are present upstream of the project and within the floodplain corridor of the downstream sub-reach per the NWI. The Fork Swamp mainstem drainage is 80 percent urban land-use and 24 percent impervious area. Wetlands are present within the floodplain corridor per the National Wetlands Inventory (NWI). Refer to the attached Project Location Map (Attachment 5) and Preliminary Engineering Report (Attachment 7) for more information.

Latitude **35.562073**
Longitude **-077.366280**

Attachments

Filename	Date uploaded	Uploaded by	Label	Description	Action
Attachment 5. Project Location Map.pdf	11/18/2022	edward.fernandez@icf.com	Project Location Attachments	Project location map	
Attachment 7. Preliminary Engineering Report.pdf	11/18/2022	edward.fernandez@icf.com	Project Location Attachments	Detailed technical report describing project components, location, and benefits.	

Project benefiting area

Provide a detailed description of the proposed project's benefiting area.

The benefitting area for the proposed project reflects the population affected by roadway and home flooding, as well as the service area of Fire Station #7. The population impacted by road flooding is 33,000, the Annual Average Daily Traffic (AADT) count provided by the North Carolina Department of Transportation (NCDOT) for the section of East Fire Tower Road identified in

the Fork Swamp Watershed Master Plan (Attachment 3). Additionally, there are 90 properties that will see reduced flood depths due to the project. The residential population for these properties, 180 residents, was found by multiplying the number of properties by the 2020 household size estimate for the City of Greenville from the American Community Survey, 2.0. Finally, the service area for Fire Station #7, the fire station where service will be delayed due to flooding on East Fire Tower Road, has a population of 25,045. As these benefitting areas overlap, the City assumes that at least 37% of the City's population will benefit (representative of the 33,000 roadway users). Please see attached floodplain properties and SVI maps (Attachments 32 and 33) for further information. Additionally, within this impacted population are residents whose characteristics can classify them as part of a disadvantaged community. FEMA defines a disadvantaged community based on a combination of variables, including disproportionate impacts from climate change, low income, high poverty, lack of access to healthcare, racial and ethnic segregation, and unemployment. The Center for Disease Control's (CDC) 2020 Social Vulnerability Index (CDC SVI) weighs these variables and combines them to produce an overall vulnerability score for each census tract in the US. Census tracts within the project area scored amongst the 46% percentile of all vulnerability themes. This means that the project will benefit a particularly concentrated area of vulnerable populations and disadvantaged communities. SVI data also shows that, approximately 34 percent of the benefitting area represent minority populations, and nearly 30 percent are low-to-moderate income individuals.

Attachments

Filename	Date uploaded	Uploaded by	Label	Description	Action
Attachment 28. Criteria 4.(Population Impacted).pdf	01/04/2023	edward.fernandez@icf.com	Location project benefitting area Attachments	Explanation of how the proposed mitigation activity meets Qualitative Criterion Number 4: Population Impacted	
Attachment 3. Fork Swamp Watershed Master Plan (Excerpt).pdf	11/18/2022	edward.fernandez@icf.com	Location project benefitting area Attachments	Fork swamp watershed master plan (excerpt)	
Attachment 33. Properties in Floodplain Map.pdf	11/18/2022	edward.fernandez@icf.com	Location project benefitting area Attachments	Properties in floodplain map	

Project impact area

Provide a detailed description of the proposed project's impact area.

The proposed flood reduction and stream restoration project involves a major upgrade of the culvert where Fork Swamp Unnamed Tributary 3 (FSUT3) crosses East Fire Tower Road. It also includes extensive floodplain benching along approximately 990 LF (on the left side) of the channel reach upstream of East Fire Tower Road and along approximately 2250 LF (on both sides) of the channel reach downstream of the crossing. The project also involves floodplain benching along the Fork Swamp mainstem (right side), just downstream of where it crosses East Fire Tower Road, approximately 3,000 feet west of the FSUT3 crossing. The project area stream channels are incised (hydraulically disconnected from the overbank floodplain) with bank heights of approximately 6 feet to 11 feet. The project will provide a 50-year level of service and reduce flooding impacts to several surrounding structures (homes) which are currently located in the mapped floodway along the two streams. The service area for the project was identified as the population affected by roadway and home flooding, as well as the service area of Fire Station #7. The population impacted by road flooding is 33,000, the Annual Average Daily Traffic (AADT) count provided by the North Carolina Department of Transportation (NCDOT) for the section of East Fire Tower Road identified in the Fork Swamp Watershed Master Plan (Attachment 3). Additionally, there are 90 properties that will see reduced flood depths due to the project. The entire service area will benefit from resilient water and flooding infrastructure. Please see attached properties in floodplain map (Attachment 33).

Attachments

Filename	Date uploaded	Uploaded by	Label	Description	Action
Attachment 33. Properties in Floodplain Map.pdf	11/18/2022	edward.fernandez@icf.com	Location project impact area Attachments	Properties in Floodplain Map	
Attachment 3. Fork Swamp Watershed Master Plan (Excerpt).pdf	11/18/2022	edward.fernandez@icf.com	Location project impact area Attachments	Fork Swamp Watershed Master Plan (Excerpt)	

Project site inventory

Does this project subapplication propose to mitigate a property/structure(s)? (**Yes**)
 Examples: residential home, commercial building, bridge, fire station, levee, pumping station, wastewater treatment plant, telephone pole, electric line, etc.)

Please describe how the property(ies) will be selected upon subgrant approval. (Example: Saferoom Lottery Project, Fix the Bricks Project)

Please [download the excel template](#), and then fill out the template with building or infrastructure data.

Enter the location of the property/structure.

List of location(s) (1 location)

Status	Location ID	Address	Inventory type	Structure type	Mitigation action
✔	49440	East Fire Tower Road , Greenville, NC, Pitt,	Infrastructure/Utility/other	Transportation	Floodproofing

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: \$12,887,855.00

Budget type: Construction

▶	Cost type: Cost estimate	\$12,274,149.00
▶	Cost type: Management cost	\$613,706.00

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) and small impoverished communities 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.

[Is this an Economically Disadvantaged Rural Community?](#)

This determines your federal/non-federal share ratio.
No

	% Percentage	Funding amount
Proposed federal share	71.43	9205611.00
Proposed non-federal share	28.57	3682244.00
		Total project funding:
		\$12,837,855.00

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	Funding amount	% Non-federal share by source
▶ Funding source: City of Greenville	100.00%	\$3,682,244.00

Please provide any additional comments below (optional).

The budget for the proposed scoping activity was developed in accordance with FEMA HMA Guidelines for cost review. The City used expert judgement and recent cost estimates for similar projects in the region to update the preliminary project cost estimates from the Fork Swamp Watershed Master Plan (2016). These updates include adjustments for inflation and other construction industry changes since the plan's development that may impact cost. All costs included in the subapplication include necessary, reasonable, and allocable consistent with the provisions of 2 CFR Part 200. The non-Federal matching fund requirement is \$3,682,244, or 30% of project costs. Greenville has committed this overmatch of the 25% local funding requirement in accordance with FEMA BRIC program priorities and evaluation criteria. The non-federal funds will be provided by cash from the Greenville Stormwater Master Fund. This is documented in the attached Cost Commitment Letter from City Light (Attachment 11).

Attachments

Filename	Date uploaded	Uploaded by	Label	Description	Action
Attachment 11. Cost Commitment Letter.pdf	11/18/2022	edward.fernandez@icf.com	Budget Attachments	Letter detailing the City of Greenville's cost share commitment.	

Cost-effectiveness

How was cost-effectiveness determined for this project?

- BCA completed in FEMA's BCA toolkit
Subapplicant must attach supporting documentation.
- Pre-calculated benefits
- Substantial damage in special flood hazard area
- Other BCA methodology approved by FEMA in writing
- Not applicable
- Not applicable

What are the total project benefits? (\$)	13803874.00
What are the total project cost? (\$)	12423056
What is the benefit-cost ratio (BCR) for the entire project?	1.11
Was sea level rise incorporated into the flood elevations in the BCA?	No

Were environmental benefits added to the project benefits?

Yes

Were social benefits added to the project benefits?

Yes

Please provide any additional comments below (optional).

Following the FEMA BCA Reference Guide and Supplement, the project's BCA uses a combination of residential flooding building damages, content damages, and displacement costs, and loss of road function due to culvert failure. The modeled scenarios use engineering assessments, statistical determinations of likely occurrence, and associated damages during expected events. This is consistent with FEMA's expected damages approach as detailed in the FEMA BCA Reference Guide. The BCA for this project was primarily guided by FEMA's BCA Reference Guide and Supplement and the BCA Toolkit Version 6.0. Using the methodology defined in Attachment 14, the proposed East Fire Tower Road project is expected to generate \$13,803,874 in benefits, yielding a 1.11 BCR when compared to a \$12,423,056 present value project cost. The BCA quantifies the following project benefits: Residential flooding, including building damage and content damage, along with associated costs due to displacement. Culvert failure, which would require complete roadway closure for repairs. Environmental benefits associated with stabilizing and restoring 487,500 square feet of riparian space through floodplain benching. Social benefits associated with mitigating flood risk to 90 homes. Hydraulic analysis of the flood mitigation actions shows that the measures will prevent roadway overtopping up to the 50-year event, and flood risk associated with the 100-year event will be significantly reduced for vulnerable homes.

Attachments

Filename	Date uploaded	Uploaded by	Label	Description	Action
Attachment 14. BCA Technical Memorandum.pdf	01/04/2023	edward.fernandez@icf.com	Cost Effectiveness Attachments	The Memorandum details the proposed mitigation activity, the BCA approach, and analysis results.	
ProjectsExport_202217111650388.zip	01/04/2023	edward.fernandez@icf.com	Cost Effectiveness Attachments	Attachment 13 - BCA data exported for FEMA review.	
Greenville BCA Report.pdf	01/04/2023	edward.fernandez@icf.com	Cost Effectiveness Attachments	Attachment 12 - Print-out of BCA report from BCA Toolkit 6.0 for the project.	

Environmental/Historic Preservation (EHP) Review Information

Introduction

An environmental/historic preservation review is required for all activities for which FEMA funds are being requested. FEMA will complete this review with the assistance of both the state or tribal government and the local applicant. It is important that you provide accurate information. If you are having problems completing this section, please contact your application point of contact.

A. National Historic Preservation Act - Historic Buildings and Structures

1. Does your project affect or is it in close proximity to any buildings or structures 50 years or more in age? **No**

Please confirm that you have provided the information listed below by selecting each check box. (If you have not provided these documents in any other section of the application, please attach the required documents below.)

- The property address and original date of construction for each property affected (unless this information is already noted in the Properties section).
- A minimum of two color photographs showing at least three sides of each structure (Please label the photos accordingly).
- A diagram or USGS 1:24,000 scale quadrangle map displaying the relationship of the property (s) to the project area.

To help FEMA evaluate the impact of the project, please indicate below any other information you are providing. (optional)

- Information gathered about potential historic properties in the project area, including any evidence indicating the age of the building or structure and presence of buildings or structures that are listed or eligible for listing on the National Register of Historic Places or within or near a National Register listed or eligible historic district. Sources for this information may include the State Historic Preservation Officer, and/or the Tribal Historic Preservation Officer (SHPO/THPO), your local planning office, historic preservation organization, or historical society.
- Consideration of how the project design will minimize adverse effects on known or potential historic buildings or structures, and any alternatives considered or implemented to avoid or minimize effects on historic buildings or structures. Please address and note associated costs in your project budget.
- For acquisition/demolition projects affecting historic buildings or structures, any data regarding the consideration and feasibility of elevation, relocation, or flood proofing as alternatives to demolition.
- Attached materials or additional comments.

Please provide an explanation and any information about this project that could assist FEMA in its review. (optional)

Please see the attached SHPO coordination letter (Attachment 17), the Preliminary Engineering Report (Attachment 7), and the ground disturbance map (Attachment 18) that delineate the area of ground disturbance. Additionally, see the attached registration of historic places map (Attachment 16) to see that no historic places are within the proposed project's bounds. Of the 84 properties that will have flood levels impacted by this project, 15 of the structures are more than 50 years old. However, these properties will not be affected by construction and will benefit from the overall impact of the project.

Please provide an explanation and any information about this project that could assist FEMA in its review.

The proposed project will directly benefit 84 homes and reduce flood risk. Of these homes, Please see the attached SHPO coordination letter (Attachment 17), the Preliminary Engineering Report (Attachment 7), and the ground disturbance map (Attachment 18) that delineate the area of ground disturbance. Additionally, see the attached registration of historic places map (Attachment 16) to see that no historic places are within the proposed project's bounds. Of the 84 properties that will have flood levels impacted by this project, 15 of the structures are more than 50 years old. However, these properties will not be affected by construction and will benefit from the overall impact of the project.

Attachments

Filename	Date uploaded	Uploaded by	Label	Description	Action
Attachment 15. USGS Topographic Map.pdf	11/18/2022	edward.fernandez@icf.com	closeProximityTo50YearOldBuilding.attachmenttlds	USGS Topographic Map	
Attachment 17. SHPO Concurrence Letter.pdf	11/18/2022	edward.fernandez@icf.com	closeProximityTo50YearOldBuilding.attachmenttlds	SHPO Concurrence Letter	
Attachment 16. National Register of Historic Places Map.pdf	11/18/2022	edward.fernandez@icf.com	closeProximityTo50YearOldBuilding.attachmenttlds	National register of historic places map	
Attachment 6. Photo Log.pdf	11/18/2022	edward.fernandez@icf.com	closeProximityTo50YearOldBuilding.attachmenttlds	Photo log	

B. National Historic Preservation Act - Archeological Resources

Does your project involve disturbance of ground? **Yes**

Please confirm that you have provided the information listed below by selecting each check box. (If you have not provided these documents in any other section of the application, please attach the required documents below.)

- A description of the ground disturbance by giving the dimensions (area, volume, depth, etc.) and location.
- The past use of the area to be disturbed, noting the extent of previously disturbed ground.
- A USGS 1:24,000 scale or other site map showing the location and extent of ground disturbance.

To help FEMA evaluate the impact of the project, please indicate below any other information you are providing. (optional)

- Any information about potential historic properties, including archeological sites, in the project area. Sources of this information may include SHPO/THPO, and/or the Tribe's cultural resources contact if no THPO is designated. Include, if possible, a map showing the relation of any identified historic properties to the project area.

Attached materials or additional comments.

Please provide an explanation and any information about this project that could assist FEMA in its review. (optional)

Significant ground disturbance is expected due to the amount of floodplain benching proposed on the FSUT3 and Fork Swamp tributaries. In total, the proposed project will excavate 487,500 square feet of fill adjacent to the tributary channels to allow for additional floodplain storage in the streambeds. Ground disturbance along the Fork Swamp Main Branch will total 198,500 square feet at a depth ranging between 2 and 4 feet. Ground disturbance along the Fork Swamp Tributary 3 occurs in two locations. Work taking place on the north side of East Fire Tower Road will disturb 74,000 square feet of ground at a depth of 3 to 6 feet while work taking place on the south side of East Fire Tower Road will disturb 215,000 square feet of ground at a depth of 3 to 5 feet. Attachment 18 and 7 display the proposed area and depth of ground disturbance throughout the project site.

Please provide an explanation and any information about this project that could assist FEMA in its review.

Attachments

Filename	Date uploaded	Uploaded by	Label	Description	Action
Attachment 17. SHPO Concurrence Letter.pdf	01/04/2023	edward.fernandez@icf.com	involveDisturbanceOfGround.attachmentIds	Concurrence letter to the North Carolina Historic Preservation Office, requesting SHPO clearance or conditions for implementation.	
Attachment 7. Preliminary Engineering Report.pdf	11/18/2022	edward.fernandez@icf.com	involveDisturbanceOfGround.attachmentIds	Detailed technical report describing project components, location, and benefits.	
Attachment 18. Ground Disturbance Map.pdf	11/18/2022	edward.fernandez@icf.com	involveDisturbanceOfGround.attachmentIds	Delineates the area of ground disturbance for the proposed mitigation activity.	

C. Endangered Species Act and Fish and Wildlife Coordination Act

1. Are federally listed threatened or endangered species or their critical habitat present in the area affected by the project? **Not known**

Please confirm that you have provided the information listed below by selecting each check box. (If you have not provided these documents in any other section of the application, please provide the required documents either through attachment and/or comment box below.)

Information you obtained to identify species in or near the project area. Provide the source and date of the information cited.

To help FEMA evaluate the impact of the project, please indicate below any other information you are providing. (optional)

Any request for information and associated response from the USFWS, the National Marine Fisheries Service (NMFS) (for affected ocean-going fish), or your State Wildlife Agency, regarding potential listed species present and potential of the project to impact those species.

Attached materials or additional comments.

Please provide an explanation and any information about this project that could assist FEMA in its review. (optional)

Please provide an explanation and any information about this project that could assist FEMA in its review.

The US Fish and Wildlife Report produced a list of species and critical habitats that are known or expected to be on or near the project area (see IPaC report attachments - Attachments 19 and 20). A request for information

from the North Carolina Department of Environmental Quality regarding the potential impacts on species present has been made (see the attached DEQ letter - Attachment: 21).

2. Does your project remove or affect vegetation? **Yes**

Please confirm that you have provided the information listed below by selecting each check box. (If you have not provided these documents in any other section of the application, please provide the required documents either through attachment and/or comment box below.)

- Description of the amount (area) and type of vegetation to be removed or affected.
- A site map showing the project area and the extent of vegetation affected.
- Photographs or digital images that show both the vegetation affected and the vegetation in context of its surroundings.

To help FEMA evaluate the impact of the project, please indicate below any other information you are providing. (optional)

- Attached materials or additional comments.

Please provide an explanation and any information about this project that could assist FEMA in its review. (optional)

Vegetation will be removed from the existing streambank to provide bank stabilization, channel modifications, and grade controls. The left floodplain of the upstream FSUT3 sub-reach is open, regularly mowed turf grass. The upstream FSUT3 right floodplain consists of the fences and landscaping of private properties. Both overbanks of the downstream FSUT3 sub-reach are wooded corridors limited in width by residential development (on the left) and commercial development (on the right). The left floodplain of the Fork Swamp mainstem is maintained (mowed) within the sewer easement that parallels the channel. However, there is a buffer of dense grass and invasive species between the easement and the channel top of bank that is approximately 15 to 20 feet wide. Most of the mainstem right overbank riparian buffer is not less than 80 feet wide and is vegetated with a mix of herbaceous and woody shrubs and mature overstory trees.

Please provide an explanation and any information about this project that could assist FEMA in its review.

3. Is your project in, near (within 200 feet), or likely to affect any type of waterway or body of water? **Yes**

If Yes, and project is not within an existing building, you must confirm that you have provided the following: (If you have not provided these documents in any other section of the application, please attach the required documents below.)

- A USGS 1:24,000 scale quadrangle map showing the project activities in relation to all nearby water bodies (within 200 feet).
- Any information about the type of water body nearby including: its dimensions, the proximity of the project activity to the water body, and the expected and possible changes to the water body, if any. Identify all water bodies regardless whether you think there may be an effect.
- A photograph or digital image of the site showing both the body of water and the project area.

To help FEMA evaluate the impact of the project, please indicate below any other information you are providing. (optional)

- Evidence of any discussions with the US Fish and Wildlife Service (USFWS), and/or your State Wildlife Agency concerning any potential impacts if there is the potential for the project to affect any water body.

Please provide an explanation and any information about this project that could assist FEMA in its review. (optional)

The proposed stabilization project located near East Fire Tower Road is along confined sections of FSUT3 and the Fork Swamp mainstem, as shown in the attached National Wetlands Inventory map (Attachment 22). The attached photo log (Attachment 6) and USGS map (Attachment 15) shows the approximate locations of the tributary and mainstem and their relation to the project location. Additionally, the Preliminary Engineering Report (Attachment 7) is attached to show the proposed stabilization work on the tributary and mainstem. See the attached coordination letter to the North Carolina Department of Environmental Quality (NC DEQ) (Attachment 21) for additional coordination efforts. The project is not expected to affect fish and wildlife, particularly endangered species.

Attachments

Filename	Date uploaded	Uploaded by	Label	Description	Action
Attachment 31. Vegetation Map.pdf	11/18/2022	edward.fernandez@icf.com	endangeredSpecies.attachmenttlds	Delineates the area of vegetation disturbance	

Filename	Date uploaded	Uploaded by	Label	Description	Action
				for the proposed mitigation activity.	
Attachment 21. DEQ Concurrence Letter.pdf	01/04/2023	edward.fernandez@icf.com	endangeredSpecies.attachmentIds	Concurrence letter to the North Carolina Department of Environmental Quality (DEQ), requesting DEQ clearance or conditions for implementation.	
Attachment 22. National Wetlands Inventory Map.pdf	11/18/2022	edward.fernandez@icf.com	endangeredSpecies.attachmentIds	National Wetlands Inventory, which is produced by the U.S. Fish and Wildlife Service and displays wetlands in the proposed project area	
Attachment 15. USGS Topographic Map.pdf	11/18/2022	edward.fernandez@icf.com	endangeredSpecies.attachmentIds	USGS topographical map that shows the project location	
Attachment 19. IPaC Report Fork Swamp Main Branch.pdf	11/18/2022	edward.fernandez@icf.com	endangeredSpecies.attachmentIds	IPaC Report, which lists any species and other resources under the U.S. Fish and Wildlife Service's jurisdiction that are known or expected to be on or near the project area (Fork Swamp Main Branch).	
Attachment 6. Photo Log.pdf	11/18/2022	edward.fernandez@icf.com	endangeredSpecies.attachmentIds	Photos taken at the project location for the development of the Preliminary Engineering Report (PER).	
Attachment 23. USACE Concurrence Letter.pdf	11/18/2022	edward.fernandez@icf.com	endangeredSpecies.attachmentIds	Concurrence letter to the US Army Corps of Engineers (USACE) to inform the office of the proposed project and its impact on nearby bodies of water or wetlands	
Attachment 20. IPaC Report Tributary (FSUT3).pdf	11/18/2022	edward.fernandez@icf.com	endangeredSpecies.attachmentIds	IPaC Report, which lists any species and other resources under the U.S. Fish and Wildlife Service's jurisdiction that are known or expected to be on or near the project area (tributary FSUT3).	
Attachment 18. Ground Disturbance Map.pdf	11/18/2022	edward.fernandez@icf.com	endangeredSpecies.attachmentIds	Delineates the area of ground disturbance for the proposed mitigation activity.	
Attachment 7. Preliminary Engineering Report.pdf	11/18/2022	edward.fernandez@icf.com	endangeredSpecies.attachmentIds	Detailed technical report describing project components, location, and benefits.	

D. Clean Water Act, Rivers and Harbors Act, and Executive Order 11990 (Protection of Wetlands)

1. Will the project involve dredging or disposal of dredged material, excavation, adding fill material or result in any modification to water bodies or wetlands designated as 'waters of the U.S.' as identified by the US Army Corps of Engineers or on the National Wetland Inventory?

Yes

Please confirm that you have provided the information listed below by selecting each check box. (If you have not provided these documents in any other section of the application, please attach the required documents below.)

- Documentation of the project location on a USGS 1:24,000 scale topographic map or image.
- A copy of a National Wetlands Inventory map or other available wetlands mapping information.

To help FEMA evaluate the impact of the project, please indicate below any other information you are providing. (optional)

- Request for information and response letter from the US Army Corps of Engineers and/or state resource agencies regarding the potential for wetlands, and applicability of permitting requirements.
- Evidence of alternatives considered to eliminate or minimize impacts to wetland.
- Attached materials or additional comments.

Please provide an explanation and any information about this project that could assist FEMA in its review. (optional)

The proposed project will include floodplain modifications that may impact Fork Swamp and its tributaries as "waters of the US" as identified by USACE, as well as wetlands identified on the National Wetland Inventory. Attachment 22 and 23 provide the National Wetlands Inventory Map and USACE concurrence request for the proposed project.

Attachments

Filename	Date uploaded	Uploaded by	Label	Description	Action
Attachment 22. National Wetlands Inventory Map.pdf	11/18/2022	edward.fernandez@icf.com	waterBodyOrWetlandModification.attachmentIds	National Wetlands Inventory, which is produced by the U.S. Fish and Wildlife Service and displays wetlands in the proposed project area	
Attachment 23. USACE Concurrence Letter.pdf	11/18/2022	edward.fernandez@icf.com	waterBodyOrWetlandModification.attachmentIds	Concurrence letter to the US Army Corps of Engineers (USACE) to inform the office of the proposed project and its impact on nearby bodies of water or wetlands	

E. Executive Order 11988 (Floodplain Management)

1. Does a Flood Insurance Rate Map (FIRM), Flood Hazard Boundary Map (FHBM), hydrologic study, or some other source indicate that the project is located in or will affect a 1% annual chance floodplain, a 0.2% annual chance floodplain, a regulatory floodway, or an area prone to flooding?

Yes

Please explain in the text box below and/or provide any documentation to identify the means or the alternatives considered to eliminate or minimize impacts to

Construction for the proposed project will occur in the 100-year floodplain and in portions of the Regulatory Floodway. However, the Greenville Drainage

floodplains (See the 8 step process found in 44 CFR Part 9.6.) to help FEMA evaluate the impact of the project:

Improvements and Stream Restoration at East Fire Tower Road will increase and benefit natural floodplain function. The project area stream channels are incised (hydraulically disconnect from the overbank floodplain) with bank heights of approximately 6 feet to 11 feet. Throughout all channel reaches within the project area, the consistent absence of rack lines or other evidence of recent flooding on the adjacent floodplains indicates that these channels have little or no access to their adjacent floodplains. Implementing floodplain benching will provide additional flow area and mitigate some of the high shear stresses acting on the existing stream bank.

Please provide an explanation and any information about this project that could assist FEMA in its review. (optional)

When a channel is “connected” to its floodplain, high flow events will have access to the adjacent floodplain, and will spread out and have reduced water velocities, all of which will greatly reduce erosive forces (shear forces) within the channel. This also conserves natural floodplain function while reducing flood risk for critical infrastructure and homes.

2. Does the project alter a watercourse, water flow patterns, or a drainage way, regardless of its floodplain designation?

Yes

If Yes, please indicate below any other information you are providing to help FEMA evaluate the impact of the project:

- Hydrologic/hydraulic information from a qualified engineer to demonstrate how drainage and flood flow patterns will be changed and to identify down and upstream effects.
- Request for information and response letter from the state water resource agency, if applicable, with jurisdiction over modification of waterways.
- Attached materials or additional comments.

Please provide an explanation and any information about this project that could assist FEMA in its review. (optional)

As described above, the proposed project will provide significant hydraulic storage capacity within the riparian corridors of the Fork Swamp watershed. It is anticipated that this storage capacity will alter drainage ways for intense flood events, such as the 50-year and 100-year return periods. However, this alteration will benefit homeowners in the floodplain, reducing the flood stage for 90 properties and removing 26 from the 100-year floodplain. Preliminary stormwater models demonstrate this effectiveness; additional hydraulic and hydrologic modeling will be completed in Phase 1 of the project to determine the need for a No-Rise Certification or Letter of Map Revision. Attachment 24 references the Flood Insurance Rate Map for the project area, and Attachment 3 provides documentation from the Watershed Master Plan that documents project effectiveness.

Attachments

Filename	Date uploaded	Uploaded by	Label	Description	Action
Attachment 3. Fork Swamp Watershed Master Plan (Excerpt).pdf	11/18/2022	edward.fernandez@icf.com	affectToPercentAnnualChanceFloodplain.attachmentIds	Excerpt of the Fork Swamp Watershed Master Plan	
Attachment 24. Flood Insurance Rate Map (FIRM).pdf	11/18/2022	edward.fernandez@icf.com	affectToPercentAnnualChanceFloodplain.attachmentIds	Flood Insurance Rate Map (FIRM) for the proposed project area	

F. Coastal Zone Management Act

1. Is the project located in the state's designated coastal zone? **No**

G. Farmland Protection Policy Act

1. Will the project convert more than 5 acres of prime or unique farmland outside city limits to a non-agricultural use? **No**

H. Resource Conservation and Recovery Act (RCRA) and Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (Hazardous and Toxic Materials)

1. Is there a reason to suspect there are contaminants from a current or past use on the property associated with the proposed project? **No**

2. Are there any studies, investigations, or enforcement actions related to the property associated with the proposed project? **No**

3. Does any project construction or operation activities involve the use of hazardous or toxic materials? **No**

4. Do you know if any of the current or past land-uses of the property affected by the proposed project or of the adjacent properties are associated with hazardous or toxic materials? **No**

I. Executive Order 12898, Environmental Justice for Low Income and Minority Populations

1. Are there low income or minority populations in the project's area of effect or adjacent to the project area? **Yes**

If Yes, you must confirm that you have provided the following either in the text box below or by attachment: (If you have not provided these documents in any other section of the application, please attach the required documents or provide the description below.)

Description of any disproportionate and adverse effects to these populations.

To help FEMA evaluate the impact of the project, please indicate below any other information you are providing. (optional)

Description of the population affected and the portion of the population that would be disproportionately and adversely affected. Please include specific efforts to address the adverse impacts in your proposal narrative and budget.

Attached materials or additional comments.

Please provide an explanation and any information about this project that could assist FEMA in its review. (optional)

The FEMA BRIC program is prioritizing implementation of President Biden's Justice40 Initiative, which promotes social equity by directing 40 percent of the overall benefits of federal investments in climate and clean energy to disadvantaged communities. FEMA defines a disadvantaged community based on a combination of variables, including disproportionate impacts from climate change, low income, high poverty, lack of access to healthcare, racial and ethnic segregation, and unemployment. The Center for Disease Control's (CDC) 2020 Social Vulnerability Index (CDC SVI) weighs these variables and combines them to produce an overall vulnerability score for each census tract in the US. According to the CDC SVI data, approximately 34 percent of the benefitting area represent minority populations. According to HUD's LMI data, nearly 30 percent of service area residents are low-to-moderate income individuals.

Attachments

Filename	Date uploaded	Uploaded by	Label	Description	Action
Attachment 28. Criteria 4 (Population Impacted).pdf	01/04/2023	edward.fernandez@icf.com	lowIncomeMinority.attachmentIds	Explanation of how the proposed mitigation activity meets Qualitative Criterion Number 4: Population Impacted	

J. Other Environmental/Historic Preservation Laws or Issues

- 1. Are there other environmental/historic preservation requirements associated with this project that you are aware of? **No**
- 2. Are there controversial issues associated with this project? **No**
- 3. Have you conducted any public meeting or solicited public input or comments on your specific proposed mitigation project? **Yes**

If Yes, please indicate in the text box below a description of the requirements, issues or public involvement effort.

The City of Greenville has taken important steps in public outreach within the Fork Swamp watershed. The Master Plan (Attachment 3) included a citizen input component to solicit feedback and information regarding stormwater impacts and future stormwater management in the City. The City used a combination of direct mail questionnaires, web-based applications, and public meetings to obtain citizen input. In November of 2014, a public meeting was held to introduce the project and facilitate further feedback from the public, which was critical in identifying flood-prone areas and validating model results. The impact of flooding and proximity to a citizen input response were taken into consideration when ranking flood control projects in the Master Plan. Citizen feedback did not indicate objection or issues with the City’s nature-based solution approach to water management.

Attachments

Filename	Date uploaded	Uploaded by	Label	Description	Action
Attachment 28. Criteria 4 (Population Impacted).pdf	01/04/2023	edward.fernandez@icf.com	otherEHPLawsIssues.attachmentIds	Explanation of how the proposed mitigation activity meets Qualitative Criterion Number 4: Population Impacted	
Attachment 3. Fork Swamp Watershed Master Plan (Excerpt).pdf	11/18/2022	edward.fernandez@icf.com	otherEHPLawsIssues.attachmentIds	Fork Swamp Watershed Master Plan (Excerpt)	

K. Summary and Cost of Potential Impacts

Having answered the questions in parts A. through J., have you identified any aspects of your proposed project that have the potential to impact environmental resources or historic properties? **Yes**

If Yes, you must confirm that you have provided the following: (If you have not provided these documents in any other section of the application, please attach the required documents below.)

- Evaluated these potential effects and provided the materials required in Parts A through J that identify the nature and extent of potential impacts to environmental resources and/or historic properties.
- Consulted with appropriate parties to identify any measures needed to avoid or minimize these impacts.
- Considered alternatives that could minimize both the impacts and the cost of the project.
- Made certain that the costs of any measures to treat adverse effects are realistically reflected in the project budget estimate.

Please enter your comments below. (optional) : (Please indicate why in the text box below and any information about this project that could assist FEMA in its review).

One of the project's goals is to hydrologically reconnect the two stream channels to the Fork Swamp floodplain where possible. When the stream is “connected” to its floodplain, high flow events will have access to the adjacent floodplain, will spread out and have reduced water velocities, which will greatly reduce erosive forces within the channel and reduce risk to the neighboring structures and municipal infrastructure in and near the stream bed. This project will also likely result in enhanced water quality in the stream as a co-benefit. All supporting attachments for Sections A-J, as well as the attached FIRM maps (Attachment 24) and the attached

floodplain coordination letter (Attachment 25), support this conclusion of environmental and historic impact.

Attachments

Filename	Date uploaded	Uploaded by	Label	Description	Action
Attachment 24. Flood Insurance Rate Map (FIRM).pdf	11/18/2022	edward.fernandez@icf.com	summaryCostOfImpacts.attachmentIds	Flood Insurance Rate Map (FIRM) for the proposed project area	
Attachment 25. Floodplain Coordination Letter.pdf	11/18/2022	edward.fernandez@icf.com	summaryCostOfImpacts.attachmentIds	Floodplain Coordination Letter to the North Carolina State Hazard Mitigation Officer, detailing the City of Greenville's intent to comply with floodplain management regulations	

Evaluation

Is the applicant participating in the Community Rating System (CRS) ?	Yes
Select rating.	7
Is the applicant a Cooperating Technical Partner (CTP) ?	No
Was this application generated from a previous FEMA HMA Advance Assistance or Project Scoping award or any other federal grant award, or the subapplicant is a past recipient of Building Resilient Infrastructure and Communities (BRIC) non-financial Direct Technical Assistance?	No
Has the applicant adopted building codes consistent with the international codes ?	Yes
Year of building code	2018
Please provide the building code.	North Carolina Building Code 2018
Have the applicant's building codes been assessed on the Building Code Effectiveness Grading Schedule (BCEGS) ?	Yes
Select rating.	4
Describe involvement of partners to enhance the mitigation activity outcome.	The City of Greenville works in partnership with Pitt County, Town of Winterville, Town of Ayden, East Carolina University, and Pitt Community College to minimize hazards by increasing local awareness and understanding about hazards and how to appropriately respond. Coordination with NCDOT – the organization that maintains East Fire Tower Road – will occur to address impacts to traffic flow during construction. Additionally, the proposed floodplain benching is likely located within a Pitt County Drainage District easement based on the Pitt County OPIS website. Coordination with the Drainage District will be required to implement the proposed project.
Discuss how anticipated future conditions are addressed by this project.	The project will enhance climate adaptation efforts within the City of Greenville and be responsive to the effects of future conditions associated with increased precipitation and increased land use density within the watershed. Due to the impacts of climate change, the city is predicted to experience more frequent and severe precipitation events. According to the 2020 North Carolina Science Report (Attachment 4), Greenville could receive up to a 130% annual increase in the number of days with precipitation of 3 inches or greater by midcentury (relative to a 1996-2015 baseline average). The design approach for the project addresses increased precipitation by emphasizing nature-based solutions that provide the additional water-holding capacity needed to reduce flood impacts caused by future severe

Additional comments (optional)

precipitation events. The proposed project was informed by the master planning effort the Fork Swamp Watershed Master Plan, which considered and modeled the above anticipated future conditions from increased land use changes.

The City's proposed project is directly aligned with multiple BRIC program technical priorities. The East Fire Tower Road Drainage Improvements and Stream Restoration project mitigates risk to public infrastructure and transportation and incorporates climate resiliency and adaptation strategies as well as nature-based solutions. The City is working to protect critical transportation corridors and housing structures from the threat of flooding and, therefore, mitigate risk to the food, water and shelter and transportation lifelines. The project will also utilize nature-based solutions to ensure the stream is protected from future flood threats brought on by increasingly frequent and severe precipitation events. Additionally, the City of Greenville utilizes the latest published editions of building codes. The most recent adopted codes for North Carolina are the 2018 NC Building Codes which includes: building (residential and commercial), plumbing, mechanical, energy, gas, rehab and fire codes; and a reference document for Accessibility Code (ANSI A117.1 2003 Version); 2017 National Electric Code. The City has a BCEGS score, obtained in 2012, of 4. This score demonstrates that the City has effective building codes that are well enforced; staff education and certifications are at very high levels; staffing levels are exceptional based on workloads; and the City has adopted a model code within the last five years. The East Fire Tower Road Drainage Improvements and Stream Restoration Project additionally aligns with all the BRIC program's qualitative criteria. The project is addressing climate change related precipitation and flooding events by leveraging innovative, nature-based efforts to reduce risk to critical transportation routes. This cost-effective project serves a significant percentage of disadvantaged communities, with approximately 46% of the project's benefitting area meeting one of 15 CDC defined social vulnerability factors. Additionally, outreach activities completed during the development of the Fork Swamp Watershed Master Plan, and partnerships with additional city departments, and the Greenville Utility Commission, will ensure a successful project outcome.

Attachments

Filename	Date uploaded	Uploaded by	Label	Description	Action
Attachment 4. North Carolina Climate Science Report.pdf	11/18/2022	edward.fernandez@icf.com	Evaluation Attachments	Details projected regional climate changes for the state of North Carolina.	
Attachment 29. Criteria 5 (Outreach).pdf	01/04/2023	edward.fernandez@icf.com	Evaluation Attachments	Explanation of how the proposed mitigation activity meets Qualitative Criterion Number 5: Community Engagement and Other Outreach Activities	
Attachment 28. Criteria 4 (Population Impacted).pdf	01/04/2023	edward.fernandez@icf.com	Evaluation Attachments	Explanation of how the proposed mitigation activity meets Qualitative Criterion Number 4: Population Impacted	
Attachment 27. Criteria 3 (Implementation Measures).pdf	01/04/2023	edward.fernandez@icf.com	Evaluation Attachments	Explanation of how the proposed mitigation activity meets Qualitative Criterion Number 3: Implementation Measures	
Attachment 8. Criteria 1 (Risk reduction resilience).pdf	01/04/2023	edward.fernandez@icf.com	Evaluation Attachments	Explanation of how the proposed mitigation activity meets Qualitative Criterion Number 1: Risk Reduction/Resilience Effectiveness	

Filename	Date uploaded	Uploaded by	Label	Description	Action
Attachment 30. Criteria 6 (Leveraging Partners).pdf	01/04/2023	edward.fernandez@icf.com	Evaluation Attachments	Explanation of how the proposed mitigation activity meets Qualitative Criterion Number 6: Leveraging Partners	
Attachment 26. Criteria 2 (Climate change and future conditions).pdf	01/04/2023	edward.fernandez@icf.com	Evaluation Attachments	Explanation of how the proposed mitigation activity meets Qualitative Criterion Number 2: Climate Change & Other Future Conditions	
Attachment 35 - Technical Evaluation Criteria.pdf	01/17/2023	edward.fernandez@icf.com	Evaluation Attachments	Summary of technical evaluation criteria for subapplication	

Comments & attachments

▶ Community	1 comment, 2 attachments
▶ Mitigation plan	1 comment, 2 attachments
▶ Scope of work	1 comment, 12 attachments
▶ Budget	1 comment, 1 attachments
▶ Cost-effectiveness	1 comment, 3 attachments
▶ Evaluation	1 comment, 8 attachments
▶ Environmental/Historic Preservation (EHP)	0 comment, 26 attachments
▶ Location	0 comment, 7 attachments

Assurances and certifications

OMB Number: 4040-0009, Expires: 02/28/2025 [View burden statement](#)

SF-424D: Assurances - Construction Programs

Content:

OMB Number: 4040-0009
 Expiration Date: 02/28/2025

Certain of these assurances may not be applicable to your project or program. If you have any questions, please contact the awarding agency. Further, certain Federal awarding agencies may require applicants to certify to additional assurances. If such is the case, you will be notified.

As the duly authorized representative of the applicant, I certify that the applicant:

1. Has the legal authority to apply for Federal assistance and the institutional, managerial and financial capability (including funds sufficient to pay the non-Federal share of project costs) to ensure proper planning, management and completion of the project described in this application.
2. Will give the awarding agency, the Comptroller General of the United States and, if appropriate, the State, the right to examine all records, books, papers, or documents related to the assistance; and will establish a proper accounting system in accordance with generally accepted accounting standards or agency directives.
3. Will not dispose of, modify the use of, or change the terms of the real property title or other interest in the site and facilities without permission and instructions from the awarding agency. Will record the Federal awarding agency directives and will include a covenant in the title of real property acquired in whole or in part with Federal assistance funds to assure nondiscrimination during the useful life of the project.
4. Will comply with the requirements of the assistance awarding agency with regard to the drafting, review and approval of construction plans and specifications.
5. Will provide and maintain competent and adequate engineering supervision at the construction site to ensure that the complete work conforms with the approved plans and specifications and will furnish progressive reports and such other information as may be required by the assistance awarding agency

- or State.
6. Will initiate and complete the work within the applicable time frame after receipt of approval of the awarding agency.
 7. Will establish safeguards to prohibit employees from using their positions for a purpose that constitutes or presents the appearance of personal or organizational conflict of interest, or personal gain.
 8. Will comply with the Intergovernmental Personnel Act of 1970 (42 U.S.C. §§4728-4763) relating to prescribed standards for merit systems for programs funded under one of the 19 statutes or regulations specified in Appendix A of OPM's Standards for a Merit System of Personnel Administration (5 C.F.R. 900, Subpart F).
 9. Will comply with the Lead-Based Paint Poisoning Prevention Act (42 U.S.C. §§4801 et seq.) which prohibits the use of lead-based paint in construction or rehabilitation of residence structures.
 10. Will comply with all Federal statutes relating to nondiscrimination. These include but are not limited to: (a) Title VI of the Civil Rights Act of 1964 (P.L. 88-352) which prohibits discrimination on the basis of race, color or national origin; (b) Title IX of the Education Amendments of 1972, as amended (20 U.S.C. §§1681-1683, and 1685-1686), which prohibits discrimination on the basis of sex; (c) Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. §794), which prohibits discrimination on the basis of handicaps; (d) the Age Discrimination Act of 1975, as amended (42 U.S.C. §§6101-6107), which prohibits discrimination on the basis of age; (e) the Drug Abuse Office and Treatment Act of 1972 (P.L. 92-255), as amended, relating to nondiscrimination on the basis of drug abuse; (f) the Comprehensive Alcohol Abuse and Alcoholism Prevention, Treatment and Rehabilitation Act of 1970 (P.L. 91-616), as amended, relating to nondiscrimination on the basis of alcohol abuse or alcoholism; (g) §§523 and 527 of the Public Health Service Act of 1912 (42 U.S.C. §§290 dd-3 and 290 ee- 3), as amended, relating to confidentiality of alcohol and drug abuse patient records; (h) Title VIII of the Civil Rights Act of 1968 (42 U.S.C. §§3601 et seq.), as amended, relating to nondiscrimination in the sale, rental or financing of housing; (i) any other nondiscrimination provisions in the specific statute(s) under which application for Federal assistance is being made; and, (j) the requirements of any other nondiscrimination statute(s) which may apply to the application.
 11. Will comply, or has already complied, with the requirements of Titles II and III of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (P.L. 91-646) which provide for fair and equitable treatment of persons displaced or whose property is acquired as a result of Federal or federally-assisted programs. These requirements apply to all interests in real property acquired for project purposes regardless of Federal participation in purchases.
 12. Will comply with the provisions of the Hatch Act (5 U.S.C. §§1501-1508 and 7324-7328) which limit the political activities of employees whose principal employment activities are funded in whole or in part with Federal funds.
 13. Will comply, as applicable, with the provisions of the Davis-Bacon Act (40 U.S.C. §§276a to 276a-7), the Copeland Act (40 U.S.C. §276c and 18 U.S.C. §874), and the Contract Work Hours and Safety Standards Act (40 U.S.C. §§327-333), regarding labor standards for federally-assisted construction subagreements.
 14. Will comply with flood insurance purchase requirements of Section 102(a) of the Flood Disaster Protection Act of 1973 (P.L. 93-234) which requires recipients in a special flood hazard area to participate in the program and to purchase flood insurance if the total cost of insurable construction and acquisition is \$10,000 or more.
 15. Will comply with environmental standards which may be prescribed pursuant to the following: (a) institution of environmental quality control measures under the National Environmental Policy Act of 1969 (P.L. 91-190) and Executive Order (EO) 11514; (b) notification of violating facilities pursuant to EO 11738; (c) protection of wetlands pursuant to EO 11990; (d) evaluation of flood hazards in floodplains in accordance with EO 11988; (e) assurance of project consistency with the approved State management program developed under the Coastal Zone Management Act of 1972 (16 U.S.C. §§1451 et seq.); (f) conformity of Federal actions to State (Clean Air) Implementation Plans under Section 176(c) of the Clean Air Act of 1955, as amended (42 U.S.C. §§7401 et seq.); (g) protection of underground sources of drinking water under the Safe Drinking Water Act of 1974, as amended (P.L. 93-523); and, (h) protection of endangered species under the Endangered Species Act of 1973, as amended (P.L. 93-205).
 16. Will comply with the Wild and Scenic Rivers Act of 1968 (16 U.S.C. §§1271 et seq.) related to protecting components or potential components of the national wild and scenic rivers system.
 17. Will assist the awarding agency in assuring compliance with Section 106 of the National Historic Preservation Act of 1966, as amended (16 U.S.C. §470), EO 11593 (identification and protection of historic properties), and the Archaeological and Historic Preservation Act of 1974 (16 U.S.C. §§469a--1 et seq.).
 18. Will cause to be performed the required financial and compliance audits in accordance with the Single Audit Act Amendments of 1996 and OMB Circular No. A-133, "Audits of States, Local Governments, and Non-Profit Organizations."
 19. Will comply with all applicable requirements of all other Federal laws, executive orders, regulations, and policies governing this program.
 20. Will comply with the requirements of Section 106(g) of the Trafficking Victims Protection Act (TVPA) of 2000, as amended (22 U.S.C. 7104) which prohibits grant award recipients or a sub-recipient from (1) Engaging in severe forms of trafficking in persons during the period of time that the award is in effect (2) Procuring a commercial sex act during the period of time that the award is in effect or (3) Using forced labor in the performance of the award or subawards under the award.

Certifications regarding lobbying

OMB Number: 4040-0013

Expiration Date: 02/28/2025

Certification for Contracts, Grants, Loans, and Cooperative Agreements

The undersigned certifies, to the best of his or her knowledge and belief, that:

1. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
2. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure of Lobbying Activities," in accordance with its instructions.
3. The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

Statement for Loan Guarantees and Loan Insurance

The undersigned states, to the best of his or her knowledge and belief, that:

If any funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this commitment providing for the United States to insure or guarantee a loan, the undersigned shall complete and submit Standard Form-LLL, "Disclosure of Lobbying Activities," in accordance with its instructions. Submission of this statement is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required statement shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.