

Subapplicant information

Name of federal agency

FEMA

Type of submission

Application

CITY OF HICKORY

76 N CNTR ST

HICKORY, NC 28601 United States

State	DUNS #	EIN #
NC	071062483	566001244

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)

Shawn Pennell	Primary phone	Mailing address
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8283237427

Work

spennell@hickorync.gov

Point(s) of contact

<p>MR Andrew Foy Environmental Manager</p> <p>afoy@hickorync.gov</p>	<p>Primary phone 8283237427 Work</p> <p>Fax</p>	<p>Additional phones 8283237427 Work</p>	<p>Mailing address 76 North Center Street Hickory NC 28601</p>
<p>MR Shawn Pennell Director of Public Utilities</p> <p>spennell@hickorync.gov</p>	<p>Primary phone 8283237427 Work</p> <p>Fax</p>	<p>Additional phones 8283237427 Work</p>	<p>Mailing address 76 N Center St. Hickory NC 28601</p>

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
HICKORY, CITY OF	023,027,035	370054	N		1,10

Please provide any additional comments below (optional).

Attachments

Filename	Date uploaded	Uploaded by	Label	Description	Action

Mitigation plan

Please provide your plan information below.

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

Please provide plan detail

Plan name Unifour Regional Hazard Mitigation Plan	Plan type Local Multijurisdictional Multi-Hazard Mitigation Plan	Plan approval date 03/03/2020
Proposed activity description The proposed activity involves floodproofing of a wastewater pump station, as well as restoration of the floodplain capacity of Falling Creek via re-grading and planting of native plant species. Through the restoration process, erosion control measures will be put into place to further ensure the protection of the NE WWTF. This project furthers the objective of Goal #1 in Section 6.2 of the Attached HMP. This project furthers the objective of Goal #1 in Section 6.2 of the Attached HMP.		

Please provide any additional comments below (optional).

The City of Hickory participates in the Catawba County Hazard Mitigation Plan which is part of the Unifour Regional Hazard Mitigation Plan.

Attachments

Filename	Date uploaded	Uploaded by	Label	Description	Action
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Filename	Date uploaded	Uploaded by	Label	Description	Action
Unifour Hazard Mitigation Plan 2019.pdf	12/18/2020	spennell@hickorync.gov	Mitigation Plan Attachments	The Unifour Regional Mitigation Plan is a collaboration between Alexander County, Burke County, Caldwell County, and Catawba County. The Plan was recently revised in July 2019 and approved as of March 2020.	

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)

**BRIC 2020 Hickory Northeast Wastewater Treatment Facility
Hardening and Stream Restoration Project**

Activities

Primary activity type

Floodproofing

Primary sub-activity type

Dry floodproofing

Secondary activity type (Optional)

Stabilization and restoration

Secondary sub-activity type

Floodplain and stream restoration

Tertiary activity type (Optional)

Geographic areas description

The site of the Northeast Wastewater Treatment Facility (NE WWTF) is 310 Cloninger Mill Road NE, Hickory, NC 28601 at 35.788283 latitude and -81.307406 longitude. The NE WWTF influent pump station is located on the opposite side of Cloninger Road NE at 35.78851 latitude and -81.30542 longitude. Both properties are located on the northern side of Falling Creek. Please see the attached Location Map.

Community lifelines

Primary community lifeline

Food, water, shelter

Primary sub-community lifeline

Water

Secondary community lifeline (optional)

Hazardous material

Secondary sub-community lifeline

HAZMAT, pollutants, contaminants

Tertiary community lifeline (optional)

Hazard sources

Primary hazard source

Flooding

Secondary hazard source (optional)

Tertiary hazard source (optional)

Is this a phased project?

Yes

Are you doing construction in this project?

Yes

Population affected

64

Detail/description of stated percentage

The percentage above was calculated based on the service population of the pump station (26,195) divided by the total population of the City of Hickory (40,925).

Provide a clear and detailed description of your proposed activity

The proposed mitigation project consists of two major components: First, a protective berm will be constructed around the Northeast Wastewater Treatment Facility (NE WWTF) influent pump station. The berm will tie into the existing hillside and driveway in a manner to prevent floodwaters from reaching the pump station. The second component of the mitigation effort will be the installation of natural and environmentally sensitive stream restoration and bank stabilization measures along approximately 2,000 feet

of Falling Creek. A more thorough narrative for each measure is provided below. This project is being proposed as a phased project allowing for continued analysis of the design and engineering and ensuring all proper documentation and permitting is provided before construction on the project begins. The design approach for the mitigation of the NE WWTF influent pump station centers around the construction of a berm feature surrounding the existing station location. The top of the berm will be constructed to an elevation of 962 feet (NAVD88) or approximately 2 feet about the 500-year flood elevation. This natural berm will tie into the existing hillside of the driveway from Cloninger Mill Road NE and wrap around the south side of the pump station. On the far southeast corner of the site, Falling Creek encroaches too closely upon the pump station to allow an appropriate amount of room for a berm to be constructed. Therefore, a concrete floodwall will tie the western berm to the eastern berm. The eastern berm will then continue from the concrete floodwall, along the east side of the pump station location and tie back into the existing grade near the northeast corner of the site. Regarding the stream restoration and bank stabilization measures, the design approach will emphasize nature-based solutions and materials and recommend a combination of floodplain benching, bank regrading, bio-engineered structural enhancements, natural fiber matting surface stabilization, and intensive revegetation with the appropriate native riparian plant species. This nature-based approach will achieve greater stability within the reach of the Falling Creek stream banks and will reduce the severity of erosion and encroachment from future flood events on the NE WWTF and NE WWTF influent pump station. The primary goal of this project is to ensure future encroachment upon the NE WWTF, and more specifically the Chlorine Contact Chamber is minimized due to the forces of erosion. A large, excavated terraced floodplain bench is proposed upstream

of Cloninger Mill Road. The bench will extend from the top of the channel bank to created widths as great as 120 feet to increase hydraulic storage within the reach and reduce stream velocities during high flow events (relative to the currently confined channel). The banks of the channel will be reinforced with bank protection structures to provided long-term bank stability. The structures will vary in hardness and complexity, including woody structures and toe boulders depending on the expected risk from shear stress in each location. Rock vanes would also be constructed in the channel bed where appropriate to direct hydraulic force away from the banks to reduce erosion risk in those locations. The stream restoration and bank stabilization approach in the stream segment downstream of Cloninger Mill Road will also include the excavation of a floodplain bench on the east bank (the bank opposite the pump station). However, the floodplain bench is limited to a maximum width of approximately 40 feet in this reach because the valley wall rises rapidly in the overbank, which limits the lateral distance available to create a floodplain bench affordably. The approximate dimensions of the proposed berm and floodwall, floodplain benches, and the placement of channel protection structures are illustrated on the enclosed conceptual plan and cross-section drawings.

How will the mitigation activity be implemented?

The City of Hickory will implement the proposed project by hiring a qualified design engineer and construction contractor through a competitive procurement process. The City conforms to its procurement policy for all projects, which is in line with the FEMA procurement guidelines and 2 CFR 200. The City of Hickory DPU proposes to implement the project in two phases, in accordance with FEMA guidance on phased projects. Phase 1 will complete the evaluation of construction constraints, finish surveying, incorporate design details, and finalize engineering and permitting.

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. Upon completion of Phase 1 deliverables and approval from FEMA, Phase 2 will consist of project construction (including site preparation), acquisition of equipment and materials, floodplain benching and stream erosion control implementation, and berm and floodwall installation. As described above, implementation of the project will require staging and construction management at two separate project locations. Timing and initiation of these projects will need to be closely coordinated and managed. Site preparation of the bank stabilization measures and berm development will necessitate large staging areas for material and equipment delivery and this is reflected in the ground disturbance and staging mapping.

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 mitigation activities will reduce risk by not only mitigating direct damages and loss of function to the pump station but also by reducing the probability of damages and loss of function due to potential future erosion. Additionally, the project will have a positive impact on water quality. The protection of the pump station via a berm and floodwall will significantly reduce the potential occurrence of sewer overflows, as have happened in the past as a result of flooded facilities. Furthermore, by providing erosion control measures to the streambanks the City is ensuring the NE WWTF is hardened against future events. The NE WWTF influent pump station is currently located within the Special Flood Hazard Area (SFHA) with a finished floor elevation of 959 feet NAVD88. This elevation is equivalent to the 100-year riverine flood elevation as indicated on the Catawba County Flood Insurance Study profile for Falling Creek. The intent of the mitigation action for the NE WWTF influent pump station

is to provide a berm and floodwall that will protect the facility from riverine flooding events equivalent to the 0.2% annual chance plus 2 feet of freeboard (or 962 feet NAVD88). This elevation is also approximately 2.2 feet above the highest precipitation flood elevation experienced by the site. Regarding erosion control measures at the facility, the design approach recommends a combination of floodplain benching, bank regrading, bio-engineered structural enhancements, surface stabilization with natural fiber matting for reinforcement, and intensive revegetation with appropriate native riparian plant species. This approach will achieve greater stability within this reach of the Falling Creek channel and stream banks and will reduce the severity of future flood events. Allowing storm flows to spill out onto a new floodplain on the right overbank will reduce the erosive forces on the left bank of the channel (the bank nearest to the treatment facility) and therefore reduce the risk of future lateral migration of the channel toward the critical infrastructure on that side of the stream. The hydraulic storage capacity of the new floodplain area will also reduce hydraulic pressure on the culverts that cross under Cloninger Mill Road, and lower flood elevations in the vicinity. The influent pump station mitigation measures and erosion control measures will be designed in compliance with all relevant engineering practices and federal, state, and local statutes, regulations, and laws, as outlined in the attached Preliminary Engineering Report. Additionally, because this project is phased the design team will be able to continuously refine each mitigation approach and ensure the greatest outcomes are selected for the mitigation work.

Who will manage and complete the mitigation activity?

The City of Hickory Department of Public Utilities will manage the mitigation activity. The department has prior experience with projects of similar scope and scale, including several sewer lift stations and the expansion of the

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

When will the mitigation activity take place?

Northeast Wastewater Treatment Facility. DPU staff have also managed several State Revolving Fund projects in the past and are familiar with grant management requirements.

After mitigation, the NE WWTF and particularly the facility's Chlorine Contact Chamber will be protected via creekbank stabilization measures from current and future erosion. To ensure a conservative analysis, it has been assumed that the creek bank stabilization measures will last at least until the end of its identified project useful life of 50 years. This would mean that at the end of the useful service life of the erosion stabilization measures, erosion will continue along the Falling Creek banks. Therefore, analysts assumed that the 26-year erosion time would still be required before the chlorine contact chamber was again threatened by erosion. A total of 76 years would need to pass before a potential "catastrophic loss" could be considered to occur post-mitigation. This should be deemed a conservative estimate. A 76-year failure event was included in the post-mitigation erosion assessment and similar damages and outage times were applied. After mitigation, the NE WWTF influent pump station will be protected by a flood berm and wall with a design flood elevation of 962 feet (NAVD88). This is 2 feet above the 500-year riverine flood event and approximately 2.2 feet above the highest recorded precipitation flood elevation.

Phase 1 of the project will commence upon the receipt of a sub-recipient agreement from North Carolina Department of Public Safety (NCDPS). City of Hickory DPU anticipates that the remaining engineering and design work, including obtaining permits, will take approximately 19 months. Upon receipt of a Phase 2 sub-recipient agreement, construction may take up to 17 months, assuming a conservative lead time on purchasing the required materials and equipment.

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?

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?

These expected timelines also include sufficient time for procurement and coordination with NCDPS to execute the sub-recipient agreement. Specific milestones are provided in the Schedule section.

Several alternatives were considered for this project, including the No Action alternative and the Relocation alternative. The No Action alternative was determined to be infeasible because it would provide no protection to the pump station or to the wastewater treatment facility from either flooding or erosion. As noted above, it is clear past events have directly impacted these assets and will continue to do so if no mitigation action is taken. The other alternative considered was relocation of the existing pump station. Analysts investigated whether the station could be moved, either to a higher elevation or out of the floodplain entirely. However, it was determined that no appropriate location exists that would allow for the protection of the pump station while maintaining service to the WWTF. Additionally, relocating the pump station would not serve to assist in the mitigation of future erosion impacts so evident over the last several years. The NE WWTF is a hyper-critical piece of infrastructure to the people of the City of Hickory and if this facility was taken out of service for a significant amount of time, severe impacts would be felt by these service populations. The mitigation action selected is perceived to be the best for both the NE WWTF and the influent pump station.

The City of Hickory Department of Public Utilities will be responsible for long-term maintenance of the project which includes annual inspections and testing, vegetation control, and general repairs and maintenance. Maintenance costs for the project are expected to be approximately \$1,920 per year and will be built into the City's annual budget.

Additional comments (optional)

The following documentation will further enhance and elaborate on the proposed scope of work for the Northeast Wastewater Treatment facility and the NE WWTF influent pump station.

Attachments

Filename	Date uploaded	Uploaded by	Label	Description	Action
NE WWTF Pump Mitigation Concept Plan.pdf	12/18/2020	spennell@hickorync.gov	Scope of Work Attachments	Initial concept plans for the proposed pump station floodwall. Profile detail views of the proposed floodwall can be found in the NE WWTF Creek Rehab Concept Plans.	

Filename	Date uploaded	Uploaded by	Label	Description	Action
Updated NE WWTF Preliminary Engineering Report.pdf	01/20/2021	spennell@hickorync.gov	Scope of Work Attachments	The PER provides an engineering assessment of existing conditions at the project location and an initial proposed scope of work to be performed in order to properly mitigate the site in question. Additional appendices are included.	
NE WWTF Project Location Map.pdf	12/18/2020	spennell@hickorync.gov	Scope of Work Attachments	SUPERSEDED	

Filename	Date uploaded	Uploaded by	Label	Description	Action
NE WWTF Schedule Updated.pdf	01/21/2021	spennell@hickorync.gov	Scope of Work Attachments	Updated project schedule for the completion of the BRIC 2020 Hickory Northeast Wastewater Treatment Facility Hardening and Stream Restoration Project	
NE WWTF Project Schedule.pdf	12/18/2020	spennell@hickorync.gov	Scope of Work Attachments	SUPERSEDED	
NE WWTF Photo Log.pdf	01/20/2021	spennell@hickorync.gov	Scope of Work Attachments	The NE WWTF Photo Log provides photographs of the sites at which work is proposed to be performed under this mitigation project scope of work.	

Filename	Date uploaded	Uploaded by	Label	Description	Action
NE WWTF Creek Rehab Concept Plans.pdf	12/18/2020	spennell@hickorync.gov	Scope of Work Attachments	Initial concept plans for the proposed streambank restoration and erosion protection control measures. Documentation includes proposed grading plans, profile view details, erosion control measure details, and creek cross section information.	
Hickory Northeast Flood Risk.pdf	12/18/2020	spennell@hickorync.gov	Scope of Work Attachments	Mapping detail to illustrate the existing location of the NE WWTF influent pumping station and proximity to the floodplain.	

Filename	Date uploaded	Uploaded by	Label	Description	Action
NE WWTF Project Location Map.pdf	01/20/2021	spennell@hickorync.gov	Scope of Work Attachments	The NE WWTF Project Location Map provides an aerial view of the approximate location of the proposed streambank restoration and erosion control measures and the NE WWTF influent pump station location.	
NE WWTF Maintenance Agreement.pdf	01/20/2021	spennell@hickorync.gov	Scope of Work Attachments	The Maintenance Agreement between the City of Hickory and the North Carolina State Hazard Mitigation Officer	

Filename	Date uploaded	Uploaded by	Label	Description	Action
Historic Flooding Photographs.pdf	01/20/2021	spennell@hickorync.gov	Scope of Work Attachments	This document provides historic photographs taken during several different flood events at the NE WWTF influent pump station	
NE WWTF Preliminary Engineering Report.pdf	12/18/2020	spennell@hickorync.gov	Scope of Work Attachments	SUPERSEDED	

Schedule

Specify the work schedule for the mitigation activities.

Add tasks to the schedule

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

Task Name	Start Month	Task Duration (in Months)
Phase 1: State Contracting and Design Procurement	1	2 months
Task Description Procuring and contracting with a design engineer to perform the work		

Task Name Phase 1: Assessment, Preliminary Design, and 60% Design	Start Month 3	Task Duration (in Months) 6 months
Task Description Design activities through the 60% drawings milestone		
Task Name Phase 1: Permitting	Start Month 7	Task Duration (in Months) 6 months
Task Description Applying for and receiving permits during phase 1		
Task Name Phase 1: Final Design	Start Month 14	Task Duration (in Months) 3 months
Task Description Progressing the design documents to final design and producing a bid package		
Task Name Phase 1: Closeout	Start Month 17	Task Duration (in Months) 2 months
Task Description Final design review and benefit-cost analysis to close out phase 1		

Task Name Phase 2: State Contracting and Construction Procurement	Start Month 19	Task Duration (in Months) 4 months
Task Description State contracting, advertising bid documents, receiving and evaluating bids, and awarding construction contract.		
Task Name Phase 2: Construction - Pump Station	Start Month 23	Task Duration (in Months) 9 months
Task Description Construction activities related to the pump station mitigation scope.		
Task Name Phase 2: Construction - Streambank	Start Month 23	Task Duration (in Months) 13 months
Task Description Construction activities related to the streambank restoration scope		
Task Name Phase 2: Closeout	Start Month 36	Task Duration (in Months) 2 months
Task Description Final inspection and project closeout		

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

Proposed project start and end dates

Start Date **2021-10-04**

End Date **2024-10-01**

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: \$7,186,898.25

Budget type: Construction

▶ **Cost type: Cost estimate** **\$6,844,665.00**

▶ **Cost type: Management cost** **\$342,233.25**

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. For Building Resilient Infrastructure and communities (BRIC), small impoverished communities may be eligible for up to 90% federal share. For 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. 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.

	% Percentage	\$ Dollar amount
<p>Proposed federal share</p>	75.24	5407285.22
<p>Proposed non-federal share</p>	24.76	1779613.03
		<p>Based on total budget cost: \$7,186,898.25</p>

Is this a small impoverished community?



This determines your federal/non-federal share ratio.

No

Please provide justification for exceeding the allowable federal share here.

The City of Hickory DPU will overmatch to 26% local match. However, because management costs are reimbursed at 100%, the local match above appears lower.

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 funding	\$1,779,613.03	100.00%

Please provide any additional comments below (optional).

Attachments

Filename	Date uploaded	Uploaded by	Label	Description	Action
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Filename	Date uploaded	Uploaded by	Label	Description	Action
NE WWTF Cost Share Letter.pdf	12/18/2020	spennell@hickorync.gov	Budget Attachments	A cost share letter indicating the City of Hickory's assumption of responsibility for the design and construction of the proposed Hickory Wastewater Treatment Facility Hardening and Stream Restoration under the FEMA Building Resilient Infrastructure and Communities (BRIC) grant program.	

Filename	Date uploaded	Uploaded by	Label	Description	Action
Hickory Northeast WWTF Detailed Cost Estimate.pdf	12/17/2020	spennell@hickorync.gov	Budget Attachments	A detailed cost estimate of the proposed phased mitigation project including fees, labor, materials, and grant management costs.	

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? (\$)

16906176

What are the total project cost? (\$)

7213396

What is the benefit-cost ratio (BCR) for the entire project?	2.34
Was sea level rise incorporated into the flood elevations in the BCA?	No
Were environmental benefits added to the project benefits?	No
Were social benefits added to the project benefits?	No
Does the mitigation measure incorporate nature-based solutions?	Yes

Please provide any additional comments below (optional).

Please see the attached Benefit-Cost Analysis Methodology for more detail regarding the approach and calculations of the benefits obtained from the proposed implementation of this mitigation project.

Attachments

Filename	Date uploaded	Uploaded by	Label	Description	Action
NE WWTF BCA Methodology.pdf	12/18/2020	spennell@hickorync.gov	Cost Effectiveness Attachments	SUPERSEDED	

Filename	Date uploaded	Uploaded by	Label	Description	Action
NE WWTF Loss of Function Letter.pdf	12/18/2020	spennell@hickorync.gov	Cost Effectiveness Attachments	A loss of function letter developed by the City of Hickory providing more detail about historic flooding events, outages, depths, and durations.	
NE WWTF - FEMA BCA Toolkit 6.0 City of Hickory_120420.xlsx	12/18/2020	spennell@hickorync.gov	Cost Effectiveness Attachments	SUPERSEDED	
NE WWTP - FEMA BCA Toolkit 6.0 City of Hickory_011521.xlsx	01/20/2021	spennell@hickorync.gov	Cost Effectiveness Attachments	An updated BCA Toolkit reflecting the proper BCR used in the BCA Methodology.	

Filename	Date uploaded	Uploaded by	Label	Description	Action
BCAMethodology_NE WWTF_011921.pdf	01/22/2021	spennell@hickorync.gov	Cost Effectiveness Attachments	A complete Benefit-Cost Analysis methodology providing the approach and calculations used in the determination of the overall benefit-cost ratio for the proposed mitigation 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 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
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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)

Please see the attached Ground Disturbance Plan and SHPO Coordination Letter. The past use of the area to be disturbed was primarily grassy meadow, with sparse trees. All vegetation to be disturbed or removed in the implementation of this project will be replaced or enhanced with native riparian species. Particularly those species used in the development of the erosion control measures.

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
NE WWTF Ground Disturbance Floodwall.pdf	01/21/2021	spennell@hickorync.gov	involveDisturbanceOfGround.attachmentIds	Mapping information to provide an estimate of ground disturbance and vegetation to be removed. This plan sheet is specific to the NE WWTF Influent Pump Station floodwall portion of the scope of work.	

Filename	Date uploaded	Uploaded by	Label	Description	Action
NE WWTF Ground Disturbance Stream Restoration 2.pdf	01/21/2021	spennell@hickorync.gov	involveDisturbanceOfGround.attachmentIds	Mapping information to provide an estimate of ground disturbance and vegetation to be removed. This plan sheet is specific to the streambank stabilization and erosion control measures to be implemented nearest the NE WWTF Influent Pump Station to the east of Cloninger Mill Road NE.	

Filename	Date uploaded	Uploaded by	Label	Description	Action
NE WWTF Ground Disturbance Stream Restoration.pdf	01/21/2021	spennell@hickorync.gov	involveDisturbanceOfGround.attachmentIds	Mapping information to provide an estimate of ground disturbance and vegetation to be removed. This plan sheet is specific to the streambank stabilization and erosion control measures to be implemented nearest the NE WWTF Chlorine Contact Chamber to the west of Cloninger Mill Road NE.	

Filename	Date uploaded	Uploaded by	Label	Description	Action
NE WWTF SHPO Coordination Letter.pdf	12/17/2020	spennell@hickorync.gov	involveDisturbanceOfGround.attachmentIds	Coordination letter between the City of Hickory and the State Historic Preservation Officer.	

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? **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.)

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)

There is one endangered species and two threatened species present in the project area, per the US Fish and Wildlife Service IPaC Report. However, the design team has determined that the project will not adversely impact these species or its critical habitat in the course of the project.

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

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 in order to re-grade it and expand the floodplain capacity. As shown in the attached site plan, approximately 3 acres of Early-Stage Successional Mixed Forest will be disturbed, in addition to approximately 3.5 acres of Intermediate-Age Transitional Pine-Hardwood Forest. All disturbed areas will be re-planted with native species appropriate for the area. The streambank will be re-planted with new vegetation after the work is complete. Please see the attached site map and aerial imagery for more details.

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 project area is directly adjacent to Falling Creek, as shown in the Vegetation Disturbance Plan. The creek is classified as a R3UBH by the US Fish and Wildlife Service (USFWS). The attached project site map shows the distance between the creek and the area of work. Attached are images of the pump station and Falling Creek, taken after a flood event in August 2020. Also attached is a coordination letter to the North Carolina Wildlife Resources Commission (NC WRC).

Attachments

Filename	Date uploaded	Uploaded by	Label	Description	Action
NE WWTF Pump Mitigation Concept Plan.pdf	01/22/2021	spennell@hickorync.gov	endangeredSpecies.attachmentIds	Initial concept plans for the proposed pump station floodwall. Profile detail views of the proposed floodwall can be found in the NE WWTF Creek Rehab Concept Plans.	
Aerial NE WWTF.pdf	01/21/2021	spennell@hickorync.gov	endangeredSpecies.attachmentIds	Aerial imagery providing a clear view of each asset to be mitigated by the proposed project and the proximity of the nearby Falling Creek.	

Filename	Date uploaded	Uploaded by	Label	Description	Action
NE WWTF Photo Log.pdf	01/21/2021	spennell@hickorync.gov	endangeredSpecies.attachmentIds	The NE WWTF Photo Log provides photographs of the sites at which work is proposed to be performed under this mitigation project scope of work.	
NE WWTF Endangered Species Letter.pdf	12/17/2020	spennell@hickorync.gov	endangeredSpecies.attachmentIds	Coordination letter between the City of Hickory and the North Carolina Wildlife Resources Commission.	

Filename	Date uploaded	Uploaded by	Label	Description	Action
Hickory NE WWTF IPaC Endangered Species Report.pdf	12/17/2020	spennell@hickorync.gov	endangeredSpecies.attachmentIds	US Fish and Wildlife Report produced to list species and critical habitats that are known or expected to be on or near the project area. The project team has identified that no species or critical habitats will be adversely impacted due to the implementation of this project.	
NE WWTF USGS Map.pdf	01/21/2021	spennell@hickorync.gov	endangeredSpecies.attachmentIds	A USGS 1:24,000 Scale Map of the proposed project location.	

Filename	Date uploaded	Uploaded by	Label	Description	Action
NE WWTF Ground Disturbance Floodwall.pdf	01/21/2021	spennell@hickorync.gov	endangeredSpecies.attachmentIds	Mapping information to provide an estimate of ground disturbance and vegetation to be removed. This plan sheet is specific to the NE WWTF Influent Pump Station floodwall portion of the scope of work.	

Filename	Date uploaded	Uploaded by	Label	Description	Action
NE WWTF Ground Disturbance Stream Restoration.pdf	01/21/2021	spennell@hickorync.gov	endangeredSpecies.attachmentIds	Mapping information to provide an estimate of ground disturbance and vegetation to be removed. This plan sheet is specific to the streambank stabilization and erosion control measures to be implemented nearest the NE WWTF Chlorine Contact Chamber to the west of Cloninger Mill Road NE.	

Filename	Date uploaded	Uploaded by	Label	Description	Action
NE WWTF Ground Disturbance Stream Restoration 2.pdf	01/21/2021	spennell@hickorync.gov	endangeredSpecies.attachmentIds	Mapping information to provide an estimate of ground disturbance and vegetation to be removed. This plan sheet is specific to the streambank stabilization and erosion control measures to be implemented nearest the NE WWTF Influent Pump Station to the east of Cloninger Mill Road NE.	

Filename	Date uploaded	Uploaded by	Label	Description	Action
NE WWTF Creek Rehab Concept Plans.pdf	12/17/2020	spennell@hickorync.gov	endangeredSpecies.attachmentIds	Initial concept plans for the proposed streambank restoration and erosion protection control measures. Documentation includes proposed grading plans, profile view details, erosion control measure details, and creek cross-section information.	

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 **Yes**

the U.S' as identified by the US Army Corps of Engineers or on the National Wetland Inventory?

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)

Please see the attached USACE coordination letter, National Wetlands Inventory Map, and Concept Plans.

Attachments

Filename	Date uploaded	Uploaded by	Label	Description	Action
NE WWTF USGS Map.pdf	12/18/2020	spennell@hickorync.gov	waterBodyOrWetlandModification.attachmentIds	A USGS 1:24,000 Scale Map of the proposed project location.	

Filename	Date uploaded	Uploaded by	Label	Description	Action
NE WWTF Pump Mitigation Concept Plan.pdf	01/22/2021	spennell@hickorync.gov	waterBodyOrWetlandModification.attachmentIds	Initial concept plans for the proposed pump station floodwall. Profile detail views of the proposed floodwall can be found in the NE WWTF Creek Rehab Concept Plans.	
NE WWTF USACE Letter.pdf	12/17/2020	spennell@hickorync.gov	waterBodyOrWetlandModification.attachmentIds	Coordination letter between the City of Hickory and the US Army Corps of Engineers.	

Filename	Date uploaded	Uploaded by	Label	Description	Action
Hickory_NE WWTF National Wetlands Inventory Map.pdf	12/17/2020	spennell@hickorync.gov	waterBodyOrWetlandModification.attachmentIds	US Fish and Wildlife Mapping provided to indicate any wetland areas included in the National Wetlands Inventory that would be impacted by the project implementation.	

Filename	Date uploaded	Uploaded by	Label	Description	Action
NE WWTF Creek Rehab Concept Plans.pdf	12/17/2020	spennell@hickorync.gov	waterBodyOrWetlandModification.attachmentIds	Initial concept plans for the proposed streambank restoration and erosion protection control measures. Documentation includes proposed grading plans, profile view details, erosion control measure details, and creek cross-section information.	

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 100 year

Yes

floodplain, a 500 year floodplain if a critical facility, an identified regulatory floodway, or an area prone to flooding?

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

Please see the attached 8-step process explanation.

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

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)

A Hydrologic & Hydraulic study will be performed as part of the detailed design phase of the project.

Attachments

Filename	Date uploaded	Uploaded by	Label	Description	Action
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Filename	Date uploaded	Uploaded by	Label	Description	Action
NE WWTF Floodplain Coordination Letter.pdf	12/18/2020	spennell@hickorync.gov	affectTo100Or500YearFloodplain.attachmentIds	Coordination letter from the City of Hickory Department of Public Utilities to the City of Hickory Floodplain Administrator.	
NE WWTF FIRM.pdf	12/18/2020	spennell@hickorync.gov	affectTo100Or500YearFloodplain.attachmentIds	FEMA Flood Insurance Rate Map for the project area.	
NE WWTF 8 Step Process.pdf	12/17/2020	spennell@hickorync.gov	affectTo100Or500YearFloodplain.attachmentIds	Document with an explanation of how the 8-step process was conducted for this project.	

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)

Using the 2019 American Community Survey 5-Year Estimates Subject Tables provided by the US Census Bureau, approximately 17.1% of the City of Hickory's population is considered at or below the poverty line. No adverse impacts are perceived on these populations by the implementation of this project. In fact, this project is perceived to be of benefit to these populations as this pump station serves a portion of the low income and minority populations in the area.

Attachments

Filename	Date uploaded	Uploaded by	Label	Description	Action
US Census Bureau Characteristics City of Hickory.pdf	12/18/2020	spennell@hickorync.gov	lowIncomeMinority.attachmentIds	US Census Bureau information about the City of Hickory population including information regarding selected income characteristics.	

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.

Public outreach related to this project was conducted by the City of Hickory as part of the Cloninger Mill Park Master

Planning process. Please see the attached Master Plan document for more details.

Attachments

Filename	Date uploaded	Uploaded by	Label	Description	Action
Cloninger Mill Park Master Plan.pdf	12/17/2020	spennell@hickorync.gov	otherEHPLawsIssues.attachmentIds	Documentation providing the overview of the Cloninger Mill Park Master Plan including meeting minutes of public outreach opportunities.	

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? **No**

Evaluation

Is the applicant participating in the [Community Rating System \(CRS\)](#)?

No

Is the applicant a [Cooperating Technical Partner \(CTP\)](#)?

No

Was this created from a previous FEMA HMA Advance assistance / Project scoping award?

No

Has the applicant adopted building codes consistent with the [international codes](#)?

Yes

Year of building code

2015

Please provide the building code.

https://up.codes/viewer/north_carolina/ibc-2015

Have the applicant's building codes been assessed on the [Building Code Effectiveness Grading Schedule \(BCEGS\)](#)?

Yes

Select rating.

3

Describe involvement of partners to enhance the mitigation activity outcome.

The City of Hickory Department of Public Utilities (DPU) will work closely with the NC Department of Transportation to coordinate the work, as construction will occur adjacent to roadways. The DPU will also leverage partnerships with stakeholders from the Cloninger Mill Park Master Plan, including the City of Hickory Parks and Recreation Department. The City of Hickory has also identified several critical lifeline facilities within the project service area including schools, fire/police/EMS, and medical entities that it will continue to engage and collaborate with during the implementation of the proposed mitigation project.

Discuss how anticipated future conditions are addressed by this project.

The mitigation design elevation for this project takes into account future changes in precipitation intensity as a result

of climate change. It is expected that rainfall intensity will increase over the useful life of the project, so the mitigation design elevation was purposefully higher than is required by regulation.

Additional comments (optional)

Attachments

Filename	Date uploaded	Uploaded by	Label	Description	Action
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Comments & attachments

▶ Community	0 comment, 0 attachments
▶ Mitigation plan	1 comment, 1 attachments
▶ Scope of work	1 comment, 12 attachments
▶ Budget	0 comment, 2 attachments
▶ Cost-effectiveness	1 comment, 5 attachments
▶ Evaluation	0 comment, 0 attachments
▶ Environmental/Historic Preservation (EHP)	0 comment, 24 attachments

► Location**0 comment, 2 attachments****Introduction****Project location**

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

The site of the Northeast Wastewater Treatment Facility (NE WWTF) is 310 Cloninger Mill Road NE, Hickory, NC 28601 at 35.788283 latitude and -81.307406 longitude. The NE WWTF influent pump station is located on the opposite side of Cloninger Road NE at 35.78851 latitude and -81.30542 longitude. Both properties are located on the northern side of Falling Creek. With regard to the erosion control measures, a large, excavated terraced floodplain bench stretching approximately 500 feet from the western end of the NE WWTF to the eastern end is proposed upstream of Cloninger Mill Road. The bench will extend from the channel top-of-bank to created widths as great as 120 feet in width to increase hydraulic storage within the reach and reduce stream velocities during high flow events relative to the currently confined channel. Refer to the Location Map and Preliminary Engineering Report for more information.

Latitude

35.788295

Longitude

-081.305582**Attachments**

Filename	Date uploaded	Uploaded by	Label	Description	Action
NE WWTF Project Location Map.pdf	01/21/2021	spennell@hickorync.gov	Project Location Attachments	The NE WWTF Project Location Map provides an aerial view of the approximate location of the proposed streambank restoration and erosion control measures and the NE WWTF influent pump station location.	
Hickory Northeast Vicinity Map.pdf	12/18/2020	spennell@hickorync.gov	Project Location Attachments	Mapping information displaying the vicinity of the project area within the City of Hickory and the greater North Carolina region.	
NE WWTP Project Location Map.pdf	12/18/2020	spennell@hickorync.gov	Project Location Attachments	SUPERSEDED	

Project benefiting area

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

The City of Hickory staff has indicated that the NE WWTF and NE WWTF IPS are rated to treat approximately 6 million gallons per day (MGD) of wastewater on average and the facility handles a daily flow of an estimated 3.2 MGD. The benefitting area utilizes the total number of square miles contained within the Snow Creek pump station service area (19.45 square miles) and compares this mileage to the 2010 total population per square mile provided by the United States Census Bureau (1,346.8 person per square mile) resulting in a total service population of approximately 26,195 customers. This number equates to an estimated 64% of the City of Hickory total population served.

Attachments

Filename	Date uploaded	Uploaded by	Label	Description	Action
Hickory Northeast Service Area.pdf	12/18/2020	spennell@hickorync.gov	Location project benefiting area Attachments	Mapping information to provide an assessment of the complete project service area for the Northeast Wastewater Treatment Facility.	

Project impact area

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

The design approach for the mitigation of the NE WWTF influent pump station centers around the construction of a berm feature surrounding the existing station location. The feature will include a combination of an earthen embankment and concrete floodwall. This earthen berm will tie into the existing hillside of the driveway from Cloninger Mill Road NE and wrap around the south side of the pump station. On the far southeast corner of the site, Falling Creek encroaches too closely upon the pump station to allow an appropriate amount of room for a berm to be constructed. Therefore, a concrete floodwall will tie into the western berm to the eastern berm. The eastern berm will then continue from the concrete floodwall, along the east side of the pump station location and tie back into the existing grade near the northeast corner of the site. With regard to the erosion control measures, a large, excavated terraced floodplain bench stretching approximately 500 feet from the western end of the NE WWTF to the eastern end is proposed upstream of Cloninger Mill Road. The bench will extend from the channel top-of-bank to created widths as great as 120 feet in width to increase hydraulic storage within the reach and reduce stream velocities during high flow events relative to the currently confined channel. The restoration and stabilization approach in the stream segment downstream of Cloninger Mill Road will also include excavation of a floodplain bench on the right bank (the bank opposite from the existing pump station). However, the floodplain bench is limited to a maximum width of approximately 40 feet in this reach because the valley wall rises rapidly in the overbank,

which limits the lateral distance available to create a floodplain bench affordably. The channel in this reach will be reinforced and protected with rock vanes in the bed and bioengineered structures in the banks like those used in the upstream reach. Allowing storm flows to spread out and slow down over the new floodplain on the overbank will reduce erosion further down that bank at the edge of the existing NE WWTF property and will also reduce the erosive forces on the opposing bank the channel which ultimately will provide a positive impact to the project area.

Attachments

Filename	Date uploaded	Uploaded by	Label	Description	Action
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Filename	Date uploaded	Uploaded by	Label	Description	Action
NE WWTF Ground Disturbance_Stream Restoration 2.pdf	01/21/2021	spennell@hickorync.gov	Location project impact area Attachments	Mapping information to provide an estimate of ground disturbance and vegetation to be removed. This plan sheet is specific to the streambank stabilization and erosion control measures to be implemented nearest the NE WWTF Influent Pump Station to the east of Cloninger Mill Road NE.	

Filename	Date uploaded	Uploaded by	Label	Description	Action
NE WWTF Ground Disturbance Floodwall.pdf	01/21/2021	spennell@hickorync.gov	Location project impact area Attachments	Mapping information to provide an estimate of ground disturbance and vegetation to be removed. This plan sheet is specific to the NE WWTF Influent Pump Station floodwall portion of the scope of work.	

Filename	Date uploaded	Uploaded by	Label	Description	Action
NE WWTF Ground Disturbance Stream Restoration.pdf	01/21/2021	spennell@hickorync.gov	Location project impact area Attachments	Mapping information to provide an estimate of ground disturbance and vegetation to be removed. This plan sheet is specific to the streambank stabilization and erosion control measures to be implemented nearest the NE WWTF Chlorine Contact Chamber to the west of Cloninger Mill Road NE.	

Project site inventory

Does this project subapplication propose to mitigate a property/structure(s)? (Examples: residential home, commercial

Yes

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
✓	16847	310 Cloninger Mill Rd. NE , Hickory, NC, Catawba, 28601	Infrastructure/Utility/other	Wastewater	Relocation, Elevation

Assurances and certifications

OMB number: 4040-0009, Expiration date: 02/28/2022 [View burden statement](#)

SF-424D: Assurances - Construction Programs

Content:

OMB Number: 4040-0009

Expiration Date: 02/28/2022

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.

OMB number: 1660-0083, Expiration date: 10/31/2021 [View burden statement](#)

Certifications regarding lobbying; Debarment, Suspension and other responsibility matters; and Drug-free workplace requirements

Content:

OMB Control Number: 1660-0083

Expiration: 10/31/2021

Applicants should refer to the regulations cited below to determine the certification to which they are required to attest. Applicants should also review the instructions for certification included in the regulations before completing this form. Signature of this form provides for compliance with certification requirements under 44 CFR Part 18, "New Restrictions on Lobbying" and 28 CFR Part 17, "Government-wide Debarment and Suspension (Nonprocurement) and Government-wide Requirements for Drug-Free Workplace (Grants)." The certifications shall be treated as a material representation of fact upon which reliance will be placed when the Federal Emergency Management Agency (FEMA) determines to award the transaction, grant, or cooperative agreement.

1. LOBBYING

As required by section 1352, Title 31 of the U.S. Code, and implemented at 44 CFR Part 18, for persons entering into a grant or cooperating agreement over \$ 100,000, as defined at 44 CFR Part 18, the applicant certifies that:

(a) 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 any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the making of any Federal grant, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal grant or cooperative agreement.

(b) If any other funds than Federal appropriated funds have been paid or will be paid to any other person for influencing or attempting to influence an officer or employee of any agency, a member of Congress, an officer or an employee of Congress, or employee of a member of Congress in connection with this Federal Grant or cooperative agreement, the undersigned shall complete and submit Stand Form-LLL, "Disclosure of Lobbying Activities," in accordance with its instructions.

(c) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subgrants, contracts under grants and cooperative agreements, and subcontracts) and that all subrecipients shall certify and disclose accordingly.

Standard Form-LLL : 'Disclosure of Lobbying Activities' attached (This form must be attached to certification if nonappropriated funds are to be used to influence activities.)

2. DEBARMENT, SUSPENSION, AND OTHER RESPONSIBILITY MATTERS (DIRECT RECIPIENT)

As required by Executive Order 12549, Debarment and Suspension, and implemented at 44 CFR Part 67, for prospective participants in primary covered transactions, as defined at 44 CFR Part 17, Section 17.510-A.

A. The applicant certifies that it and its principals:

- a. Are not presently debarred, suspended, proposed for debarment, declared ineligible, sentenced to a denial of Federal benefits by a State or Federal court, or voluntarily excluded from covered transactions by any Federal department or agency;
- b. Have not within a three-year period preceding this application been convicted of a or had a civilian judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or perform a public a public (Federal ,State, or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
- c. Are not presently indicted for otherwise criminally or civilly charged by a governmental entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph (1) (b) of this certification; and
- d. Have not within a three-year period preceding this application had one or more public transactions (Federal, State, or local) terminated for cause of default; and

B. Where the applicant is unable to certify to any of the statements in this certification, he or she shall attach an explanation to this application.

3. DRUG-FREE WORKPLACE (GRANTEE OTHER THAN INDIVIDUALS)

As required by the Drug-Free Workplace Act of 1988, and implemented at 44 CFR Part 17, Subpart F, for grantees, as defined at 44 CFR Part 17.615 and 17.620-

- A. The applicant certifies that it will continue to provide a drug-free workplace by;
 - a. Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the grantee's workplace and specifying the actions that will be taken against employees for violation of such prohibition;
 - b. Establishing an on-going drug free awareness program to inform employees about-
 - 1. The dangers of drug abuse in the workplace;
 - 2. The grantee's policy of maintaining a drug-free workplace;
 - 3. Any available drug counseling, rehabilitation, and employee assistance programs; and
 - 4. The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace;
 - c. Making it a requirement that each employee to be engaged in the performance of the grant to be given a copy of the statement required by paragraph (a);
 - d. Notifying the employee in the statement required by paragraph (a) that, as a condition of employment under the grant, the employee will-
 - 1. Abide by the term of the statement; and
 - 2. Notify the employee in writing of his or her conviction for a violation of a criminal drug statute occurring on the workplace no later than five calendar days after such convictions;
 - e. Notifying the agency, in writing, within 10 calendar days after receiving notice under subparagraph (d)(2) from an employee or otherwise receiving actual notice of such conviction. Employers of convicted employees must provide notice, including position, title, to the applicable FEMA awarding office, i.e., regional office or FEMA office.
 - f. Taking one of the following actions, within 30 calendar days of receiving notice under subparagraph (d)(2), with respect to any employee who is convicted-
 - 1. Taking appropriate personnel action against such an employee, up to and including termination, consistent with the requirements of the Rehabilitation act of 1973, as amended; or
 - 2. Requiring such an employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement, or other appropriate agency;
 - g. Making a good faith effort to continue to maintain a drug free workplace through implementation of paragraphs (a), (b), (c), (d), (e) and (f).

B. The grantee may insert in the space provided below the site(s) for the performance of work done in connection with the specific grant:

Place of Performance (Street address, City, County, State, Zip code)

There are workplaces on file that are not identified

Sections 17.630 of the regulations provide that a grantee that is a State may elect to make one certification in each Federal fiscal year. A copy of which should be included with each application for FEMA funding. States and State agencies may elect to use a state wide certification.