

24 CFR Part 55
8-Step Determination: Floodplain Management &
Wetlands Protection Determination

Binnekill Bulkhead Repair and Improvements Project
Floodplain Management & Wetlands Protection Determination

January 22, 2021

Introduction & Overview

The purpose of Executive Order (EO) 11988, Floodplain Management, is “to avoid to the extent possible the long- and short-term adverse impacts associated with occupancy and modification of floodplains and to avoid direct or indirect support of floodplain development wherever there is a practicable alternative.” The purpose of EO 11990 Protection of Wetlands is “to avoid to the extent possible the long- and short-term adverse impacts associated with the destruction or modification of wetlands and to avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative.” This report contains the analysis prescribed by 24 CFR Part 55.

This project involves U.S. Department of Housing and Urban Development (HUD) Community Development Block Grant Program – Disaster Recovery (CDBG-DR) funding for the rehabilitation and repair of the inlet to the Binnekill Creek (Binnekill) along the East Branch Delaware River (EBDR) and improvements along the western bank of the EBDR. The analysis that follows focuses on the direct wetland and floodplain impacts associated with this project. Based on the type of land use, and other case characteristics described herein, it is concluded that there is a reasonable basis to proceed with funding for this project/ activity within floodplain and wetland. The HUD CDBG-DR funding is administered through the New York State Rising Community Reconstruction (NYRCR) Program which is using bottom-up community participation and State-provided technical expertise to develop resilient and sustainable communities. Thus, alternatives preventing or impeding the development of resilient and sustainable communities are not considered reasonable alternatives.

Description of Proposed Action & Land Use

The Binnekill Bulkhead Repair and Improvements Project (Project) involves the rehabilitation and repair of the inlet to the Binnekill along the EBDR and improvements along the western bank of the EBDR. The Project is located along the eastern portion of a 55-acre, undeveloped agricultural parcel on State Highway 30, known as Section-Block-Lot 284.-1-21, Town of Middletown, Delaware County, New York.

The Project is proposed to occur in two phases, which are proposed to occur successively in time. Phase I will involve sealing off the inlet to the Binnekill Creek and allowing the Binnekill channel to drain and performing improvements to the Binnekill channel, which will include the following: installation of a downstream coffer dam and temporary clean water dewatering system to fully drain the existing channel; grading the Binnekill channel and the area between the proposed inlet structure and New York State Route 30; filling the upstream portion of the existing channel and side-channel depressions; stockpiling excess material on-site for re-use; and installation of temporary turbid water dewatering system as needed to maintain a dry work area. Phase II will involve the replacement of the existing culvert that conveys water from the EBDR to the Binnekill and improvements along the western bank of the EBDR and will include the following activities: installation of a temporary water control cofferdam in the EBDR to direct flows away from the Binnekill inlet structure; construction of a proposed boulder deflector vane and boulder revetment along the EBDR; and removal of the temporary water control cofferdam. The stream bank and the area between the proposed inlet structure and NYS Route 30 will be graded and disturbed soils and banks of the Binnekill will be seeded with native grass seed, live stakes will be installed along the Binnekill channel, and native trees and shrubs will be installed throughout the disturbed area. Sediment and erosion control measures will be implemented including the use of a stabilized construction entrance; installation of silt fence along construction access roads and around any stockpile areas and an erosion control blanket to provide temporary surface protection to newly seeded and/or disturbed soils; temporary dewatering using a sump, pump, and dewatering basin to filter sediment from turbid water prior to flowing into the Binnekill or EBDR; and site stabilization of the surface with vegetation.

The Binnekill Creek is a man-made stream originating at the EBDR near Route 30 to the east of the village of Margaretville. The stream is an important feature of the village with respect to aesthetics, flood control, and water supply for fire protection. The Village of Margaretville sustained catastrophic damage during Hurricane Irene and Tropical Storm Lee. This was caused by flooding of the East Branch of the Delaware River (EBDR) during and after the storm events. Additionally, the storms caused severe damage to infrastructure at the confluence of Binnekill stream and hindered the stream's ability to flow freely to its egress into the EBDR. Repeated flooding and natural deterioration have compromised the bulkhead at the inlet to the Binnekill Creek. Floods have eroded the riprap berm around the bulkhead that was installed to prevent the entire main stem flow from traveling down the Binnekill Creek.

Applicable Regulatory Procedure Per EO 11988 and 11990

The proposed action corresponds with a noncritical action not excluded under 24 CFR §55.12(b) or (c). Funding is permissible for the use in the floodplain if the proposed action is processed under §55.20 and the findings of the determination are affirmative to suggest that the Project may proceed.

The activity planned is located in a community that is in the regular program of the National Flood Insurance Program (NFIP) and the community is currently in good standing. Substantial Improvement/ Substantial Damage calculations do not apply to the Project. In accordance with definitions set forth in §55.2, the Project involves modification of the 100-year floodplain and floodway; therefore, the decision making steps in §5.20 (b), (c), and (g) apply to the Project. As such, the full eight-step floodplain determination process in §55.20 is required and the following analysis examines each step in the floodplain management and wetlands protection determination process.

Step 1. Determine Whether the Proposed Action is Located in the 100-year Floodplain (500-year for Critical Actions) or results in New Construction in Wetlands.

According to the Federal Emergency Management Agency (FEMA) National Flood Hazard Layer (**Appendix I**), the proposed Project is located in the 100-year floodplain and floodway. The activity planned occurs in a community that is in the regular program of the National Flood Insurance Program (NFIP) and the community is currently in good standing. Substantial Improvement/ Substantial Damage calculations do not apply to the Project. According to the U.S. Fish & Wildlife Service (USFWS) National Wetlands Inventory Map (**Appendix II**), the proposed Project activities are located in riverine wetlands.

The Project area consists of the Binnekill inlet structure, the adjacent Binnekill channel, and the western bank of the EBDR. The Project area includes approximately 200 linear feet of stream bank along the EBDR. The existing inlet consists of a 42" cast iron pipe culvert, which passes through a rip rap berm along the west bank of the EBDR. The Project is entirely located within the floodplain and floodway of the EBDR. The Project will involve the disturbance of approximately 1.33 acres. The Project will involve the disturbance of approximately 1.33 acres in the floodplain and floodway and the disturbance of approximately 0.27 acres below the Ordinary High Water Mark (OHWM) of the Binnekill and EBDR. The proposed Project will involve the clearing of approximately 0.7 acres of trees. The proposed action does not require an individual Section 404 permit under the Clean Water Act (see 55.20(a)(1)).

Step 2. Initiate Public Notice for Early Review of Proposal.

Because the proposed Project is located in the floodplain, the Governor's Office of Storm Recovery (GOSR) published an early notice that allowed for public and public agency input on the decision to provide funding for reconstruction and development activities. The early public notice and 15-day comment period is complete. No public comments were received.

The early notice was published on November 6, 2020 and the 15-day period ended on November 23, 2020. The notice targeted local residents, including those in the floodplain. The notice was also sent to the relevant state and federal agencies on November 6, 2020: Federal Emergency Management Agency (FEMA); U.S.

Dep. of Housing and Urban Development; New York State Department of Environmental Conservation (NYSDEC); NYS Historic Preservation Office; and New York State Office of Emergency Management. The notice was also sent to the Town of Middletown. The letter published and distributed to these agencies and the associated newspaper notice affidavit are included in **Appendix III** and **Appendix IV**, respectively.

Step 3. Identify and Evaluate Practicable Alternatives to Locating the Proposed Action in a 100-year Floodplain or Wetland.

The goal of the Project is to repair and improve the inlet to help reduce the frequency and severity of flooding in the Village of Margaretville. The Binnekill inlet is designed to allow water from the EBDR to flow into the entirely man-made Binnekill. Built over 100 years ago, the Binnekill channel provides a source of water for fire protection as well as functioning as an aesthetic asset for the Village. Without the inlet structure, the Village would lose this important feature.

The structure at the inlet to the Binnekill Creek is comprised of an inlet pipe, riprap berm, and concrete bulkhead, all of which are collectively referred to as "the bulkhead." The existing structure contains a 42-inch metal pipe that has severely rusted, deteriorated, and deformed. The upstream end of the pipe is blocked by pieces of the bulkhead concrete wall that have fallen into the river. The bulkhead is located in a berm covered in large plate-like rocks. The rocks are in disarray and are no longer at a constant height. A formation of rocks extends out into the river in front of the inlet, reportedly to direct flow into the Binnekill Creek. These rocks are also in disarray and not functioning like a hydraulic vane. The bulkhead is located approximately 800 feet downstream from the confluence of the EBDR and Dry Brook.

Hydraulic analysis of flooding along the EBDR in Margaretville, New York, was performed using a 2D Hydrologic Engineering Center River Analysis System (HEC-RAS) model. Instead of analyzing individual peak flows for different recurrence intervals, the model was run in an unsteady flow condition in which the entire flood event can be simulated. Using the flow data from the downstream USGS stream gauge (USGS 01413500) as input, the model was run for past flood events, including Tropical Storm Irene in 2011 and a 1996 flood. The model was then calibrated using high water marks and historical, time-stamped photos from the Irene flood.

Under existing conditions, the model shows that even during smaller but more frequent flood events, such as those that peak around the 2- or 5-year return period flows, water is leaving the channel of the EBDR and flowing over the floodplain. Flooding also occurs along the Binnekill Creek during these smaller events because flows from the EBDR cut around and flow over the riprap berm at the inlet of Binnekill Creek, dramatically increasing flows until they exceed the capacity of the channel. Together, these factors lead to severe flooding for the properties along the Binnekill Creek and in the area surrounding the Freshtown grocery store in Margaretville. During larger flood events, such as Tropical Storm Irene, flows over the floodplain reach depths of over 9 feet and span the entire valley. After analyzing flooding under existing conditions, the 2D HEC-RAS model was used to assess various flood mitigation alternatives which could be implemented at the Binnekill Creek bulkhead. These options included increasing the height of the riprap berm, extending the berm to prevent flows from the EBDR from bypassing the structure, and altering the sizing of the inlet culvert to control inflows to the Binnekill Creek. The currently proposed culvert and associated bulkhead structure improvements were selected based on the reduced impacts from flooding associated with this design. Various designs for the height and extent of the bulkhead structure were also considered and a reduced size that lies completely within a Village-owned property easement is proposed. The proposed Project was selected since it offers the best balancing of providing necessary benefits while minimizing adverse impacts.

Step 4. Identify & Evaluate Potential Direct & Indirect Impacts Associated with Occupancy or Modification of 100-year Floodplain and Potential Direct & Indirect Support of Floodplain and Wetland Development that Could Result from Proposed Action.

The focus of floodplain evaluation should be on adverse impacts to lives and property, and on natural and beneficial floodplain values. Natural and beneficial values include consideration of potential for adverse impacts on water resources such as natural moderation of floods, water quality maintenance, and groundwater recharge.

According to the FEMA Report - A Unified National Program for Floodplain Management, two definitions commonly used in evaluating actions in a floodplain are “structural” and “non-structural” activities. Per the report, structural activity is usually intended to mean adjustments that modify the behavior of floodwaters through the use of measures such as public works dams, levees and channel work. Non-structural is usually intended to include all other adjustments (e.g., regulations, insurance, etc.) in the way society acts when occupying or modifying a floodplain. These definitions are used in describing impacts that may arise in association with potential advancement of this case.

Natural moderation of floods

The purpose of the Project is to repair and improve the inlet to help reduce the frequency and severity of flooding in the Village of Margaretville. Therefore, implementation of the proposed Project will result in the moderation of future flooding.

Living resources such as flora and fauna

A potential impact that may arise is that during construction activities, that could be a material release into the EBDR or Binnekill Creek. However, a qualitative evaluation suggests the potential would be relatively minor, and if such releases do occur, it would likely be part of an area wide impact. Given the nature of the Project, the potential for an acute or chronic level of water quality impact from the proposed Project is low. Best management practices, including the use of silt fence, a temporary turbid water dewatering system, and a temporary water control cofferdam, will be implemented to protect flora and fauna adjacent to the Project area. Disturbed areas and soil will be stabilized upon completion of Project activities.

According to a New York Natural Heritage Program (NYNHP) data, there are no documented rare animals or plants or significant natural communities in the vicinity of the proposed Project area. According to an Official Species List obtained for the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC), there are zero (0) federally threatened, endangered, or candidate species that may occur in the project area. Additionally, there are no critical habitats within the project area under the USFWS’s jurisdiction. The Project does not involve any activities that would introduce stressors to listed species or their designated critical habitats under the jurisdiction of National Oceanic and Atmospheric Administration’s (NOAA) National Marine Fisheries Service (NMFS) pursuant to the ESA. Therefore, GOSR has determined that the proposed Project would have “no effect” on species under the jurisdiction of NYSDEC, USFWS, and/or NMFS.

Impacts to Property & Lives

The highest priority of this review is to prevent the loss of life. The Project involves stream and floodplain improvements to minimize future flooding in the Village of Margaretville. The Project will protect property and enhance safety to those most at-risk during disaster events. Improvements will mitigate flooding from the EBDR and Binnekill Creek and will also benefit the greater community in the Village of Margaretville and surrounding areas, in that portions of the Village of Margaretville which have been made inaccessible by flooding caused by Hurricane Irene, Tropical Storm Lee, and other heavy rainfall events will not be isolated from emergency response and general ingress/egress.

Cultural resources such as archaeological, historic & recreational aspects

The Project will not impact historic or archeological resources. A Phase 1A/1B Archaeological Survey was performed in the Project area on December 15, 2020. Based on the results of the Archaeological Survey, it was concluded that the Project has minimal or no potential to impact historical or prehistoric archaeological sites, and that no additional archaeological investigation is warranted. On January 7, 2021, the New York State Historic Preservation Office (SHPO) determined that “no historic properties, including archaeological and/or historic resources will be affected,” by the Project, as documented in **Attachment 8** of the Binnekill Bulkhead Repair and Improvements Project Environmental Review Record Report.

Agricultural, aquacultural, & forestry resources

The Project is not located in an area that possesses agricultural, aquacultural, or forestry resources. It is possible that if there is a materials release from the Project, it could contribute to an undefined cumulative influence on degradation of water quality, which in-turn could influence natural resources including agriculture and forestry. It is possible during the short-term construction activities, the disturbance could impact local water quality and this economic sector, although the impact attributable to this use could not be quantitatively derived. However, a qualitative analysis suggests that the impact would be very small as mitigative measures and best management practices, including the use of silt fence, a temporary turbid water dewatering system, and a temporary water control cofferdam, will be utilized during construction. Project activities will be completed in accordance with all applicable federal, state and local permit requirements and conditions. Therefore, no quantifiable impacts from proposed Project activities are anticipated.

Step 5. Where Practicable, Design or Modify the Proposed Action to Minimize the Potential Adverse Impacts To and From the 100-Year Floodplain and to Restore and Preserve its Natural and Beneficial Functions and Values.

The Project would mitigate future flood risk and minimize potential impacts to the surrounding community located within the 100-year floodplain. This would benefit public health and safety by enabling better access to the community during storm events. The Project will not alter the natural or beneficial functions or values of the Binnekill Creek or EBDR floodplain. Impacts to the floodplain will also be limited, as construction will involve replacement of existing structures in previously disturbed areas. Permits will be obtained for Project activities from the United States Army Corps of Engineers (USACE) and NYSDEC. A Floodplain Development Permit will be obtained from the Town of Middletown prior to the commencement of Project activities. All permit conditions will be followed and best management practices, including the use of silt fence, a temporary turbid water dewatering system, and a temporary water control cofferdam, will be employed to preserve natural values, lives, and living resources. However, it is still reasonable to promote awareness of future risks of natural hazards, including flooding, plus the physical, social and economic impacts that potential storm events could convey, including the potential for future physical damage to the surrounding property.

Step 6. Reevaluate the Alternatives and Proposed Action.

While removal of the inlet is not considered an option, various designs for the replacement inlet were considered. The inlet was carefully designed to reduce damage to the areas downstream of the inlet. The size of the inlet was specifically designed to allow a restricted amount of water to flow into the Binnekill. Different sized culverts under different flood scenarios were modeled to assess the impacts from flooding. The currently proposed culvert and associated bulkhead structure were selected based on the reduced impacts from flooding associated with this design. Various designs for the height and extent of the bulkhead structure were also considered and a reduced size that lies completely within a Village-owned property easement is proposed. The proposed Project was selected since it offers the best balancing of providing necessary benefits while minimizing adverse impacts.

Without the proposed action, the impacted community would be left more susceptible to future flooding events in this area than it would after the implementation of the proposed action. Therefore, the “no action”

alternative examined is not considered desirable and the proposed action is still practicable in light of exposure to flood hazards in floodplain, possible adverse impacts on floodplain, the extent to which it may aggravate current hazards to other floodplains, and the potential to disrupt natural and beneficial functions and values of floodplains. Additionally, implementation of the proposed action will abide by all applicable state and local codes for floodplain development. As such, the impact of the proposed action on the floodplain, floodway, and wetlands would be less than the “no action” alternative.

Step 7. Issue Findings and Public Explanation.

A final notice, formally known as “Final Notice and Public Review of a Proposed Activity in a 100-Year Floodplain and Wetlands”, was published in accordance with 24 CFR 55. This public notice was combined with the “Notice of Finding of No Significant Impact and Notice of Intent to Request Release of Funds (FONSI-NOIRROF)” on January 22, 2020 in the Mountain Eagle newspaper. The final notice requires a 7-day comment period after publication; however, the FONSI-NOIRROF requires a 15-day comment period. As such, a 15-day comment period was used for this Final Notice. The 15-day comment period expires at 5pm on February 8, 2020. The combined notice describes the reasons why the Project must be located in the floodplain and wetlands, alternatives considered, and all mitigation measures to be taken to minimize adverse impacts and preserve natural and beneficial floodplain and wetland values. Project activities will be completed in accordance with all applicable federal, state and local regulations.

Step 8. The Proposed Action Can Be Implemented After the Above Steps Have Been Completed.

GOSR, operating under the auspices of the New York State Homes and Community Renewal’s (NYSHCR) Housing Trust Fund Corporation as the responsible entity, will ensure that the Proposed Action, as described above, is executed and necessary language will be included in all agreements with participating parties. Implementation of the proposed action may require additional local and state permits, which could place additional design modifications or mitigation requirements on the Project. It is acknowledged there is a continuing responsibility by the responsible entity to ensure, to the extent feasible and necessary, compliance with the steps herein.