

24 CFR Part 55

8-Step Determination: Floodplain Management &
Wetlands Protection Determination

Monhagen Brook Culvert Project
Floodplain Management & Wetlands Protection Determination

December 4, 2020

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 replacement of a bridge and culvert over Monhagen Brook on West Main Street and culvert replacements along Grant Street in the City of Middletown, NY. The analysis that follows focuses on floodplain impacts, as there will be no new construction in wetlands, as defined in Executive Order 11990 and 24 CFR Part 55. Based on the “non-substantial” level of work and other case characteristics, it is concluded that there is a reasonable basis to proceed with funding for this project/ activity within the floodplain and floodway.

Description of Proposed Action & Land Use

The Monhagen Brook Culvert Project (Project) involves the replacement of a bridge and culvert over Monhagen Brook on West Main Street and culvert replacements along Grant Street in the City of Middletown, NY. The Project will mitigate localized flooding that occurs during heavy rainfall events such as those experienced during Hurricane Irene and Tropical Storm Lee.

Project activities on West Main Street will involve the removal of the existing culvert and bridge over Monhagen Brook on West Main Street and the installation of a new 28-foot wide and 44-foot long, three-sided bridge and headwalls. Much of the construction area is currently covered with asphalt and concrete. The replacement will not change the function of the floodplain. The Project will result in an increase in the size of the bridge opening that conveys water beneath the bridge, which will reduce the volume of flooding that bypasses the bridge and pools at the low point along West Main Street by allowing more flow through the opening. The wider bridge opening will reduce overtopping for the 25, 50, and 100-year storms compared to existing conditions. The existing bridge has the capacity to convey up to the 10-year storm with the 50-year and 100-year storms overtopping the roadway. The proposed bridge has the capacity to convey up to the 25-year storm with the 100-year storm overtopping.

The existing culvert at the Project area that intersects Grant Street is 5 feet wide by 5 feet high up to the existing manhole where the dimensions increase to 7 feet wide by 5 feet high up until the southern property line of the parcel designated as Tax ID: 36-14-3, where it increases to 10 feet wide by 4 feet high. The existing 5-foot wide by 5-foot high and 7-foot wide by 5-foot high culvert sections are in extremely poor condition. There is an existing sink hole at Grant Street, which poses a safety concern for residents. The possibility of increasing the size of the culvert to 10 feet wide by 4 feet high in this area to match the downstream width of the culvert was analyzed, but it was determined that this was not feasible due to the physical constraints of the existing houses. The Project will involve replacing the failing sections of culvert and addressing the sink hole that has formed after the last set of major storms.

The Project will protect property and enhance safety to those most at-risk during disaster events. Improvements that will mitigate flooding along the Monhagen Brook will also benefit the greater community in the City of Middletown and surrounding areas, in that portions of the City which have been

made inaccessible in flooding caused by Hurricane Irene, Tropical Storm Lee, and other heavy rainfall events will not be isolated from emergency response and general ingress/egress.

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 culvert replacement on West Main Street 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 located on West Main Street occur in riverine wetlands. Due to the proximity of mapped wetlands to the West Main Street project location, a wetland delineation was performed by NV5 on December 18, 2019. The ordinary high water mark (OHWM) of the Monhagen Brook was delineated, but no wetlands were identified in the Project area during the wetland delineation. At the West Main Street project location, the Project will involve the removal of the existing culvert and bridge over Monhagen Brook on West Main Street and the installation of a new culvert and bridge.

The proposed Project will result in approximately 0.3 acres of temporary impacts to the Monhagen Brook floodplain and floodway. The brook is contained in a small channel. The Project will result in no permanent impacts to the floodplain. Temporary impacts include the construction activities to remove the existing culvert and install the new 28-foot wide and 44-foot long, three-sided bridge and headwalls. The culvert and bridge replacement on West Main Street will increase the width of the opening for the Monhagen Brook beneath the bridge on West Main Street from 15 feet 10-inches to 28 feet. The new bridge and headwalls will extend 60 linear feet over the Monhagen Brook. The replacement will not change the function of the floodplain. The proposed impacts to the floodplain and floodway of Monhagen Brook are solely associated with the replacement of an existing culvert and bridge. 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 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 October 2, 2020 and the 15-day period ended on October 17, 2020. The notice targeted local residents, including those in the floodplain. The notice was also sent to the relevant

state and federal agencies on October 2, 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 City of Middletown. See **Appendixes III and IV** of this Wetlands Protection and Floodplain Management Determination for the letter distributed to these agencies and the associated newspaper notice affidavit.

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

The Monhagen Creek, which has a natural base flow and also serves as a primary stormwater drainage feature for the City of Middletown, is conveyed through the City along an open channel in some locations, and through concrete box culverts in other locations. During Hurricane Irene, widespread flooding completely inundated residences along Smith Street, Wickham Avenue, Sterling Street, and Genung Street. Flooding near the intersection of East Main Street, Academy Avenue, and Fulton Street was particularly problematic, as it hampered emergency personnel and vehicles stationed at the Central Firehouse from accessing the south side and other areas of the City. This neighborhood, which is mostly residential with some businesses, remains at severe risk due to the frequency and likelihood of flooding during storm events due to the present culverts that are not designed to current standards. The no action alternative would not provide improvements to mitigate flooding and would result in the neighborhood being at a continued risk of flooding from future storm events.

The Monhagen Brook Culvert and Drainage Improvements Study, dated July 13, 2018, was completed by NV5 to identify and evaluate alternatives for improvements to the drainage systems of Monhagen Brook and Draper Brook in the City of Middletown. Projects where improvements are needed to reduce flooding were identified through review of previous studies, discussions with the City of Middletown, and iterative modeling. For Monhagen Brook, a number of geographic areas were identified and within each of these areas, one or more alternatives were developed and evaluated. As part of the Monhagen Brook Culvert and Drainage Improvements Study, Thayer Associates performed a man-entry inspection of the Monhagen Brook culvert from Genung Street to Academy Avenue and the Draper Brook culvert from Genung Street to Sterling Street in May 2017. Following the inspection, they prepared a Report on the Inspection of the Draper and Monhagen Brook Culvert(s). In general, the report estimated existing sizes and materials, documented existing condition issues that were observed, and rated the severity of the issues. In general, for the sections inspected, Thayer Associates found that the Draper Brook culvert has minor structural damage with some cracks and floor damage throughout its length. For the Monhagen Brook culvert from Academy Avenue to the beginning of the girder/beam section downstream, general structural conditions were found to be light to moderate. However, from the start of the girder/beam section of the Monhagen Brook culvert to where it meets with the Draper Brook culvert approximately 40-feet from the face of the Genung Street bridge, the general structural conditions were found to be severe with large amounts of spalling and exposed steel in the beams and ceiling and severely deteriorated concrete.

Based on the analysis and modeling performed, a scoring system was established to evaluate each alternative's benefit in reducing flooding and the alternatives were ranked accordingly. Hydrologic and Hydraulic Modeling was completed using both Autodesk Storm and Sanitary Analysis (SSA) modeling software and Hydrologic Engineering Center's River Analysis System (HEC-RAS). The models were used to provide comparative analyses of existing and proposed conditions. To evaluate the feasibility of potential project alternatives, the following items were considered: total estimated cost, flood reduction ranking, property issues, constructability issues, permitting, and notable advantages/challenges for each of the ranked alternatives. NV5 recommended that the City of Middletown pursue the West Main Street bridge replacement and Monhagen and Draper Brook spot repairs and rehabilitation. Based on prioritization and other constraints, the West Main Street bridge replacement and culvert replacement at the Grant Street location were the projects selected for funding.

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 proposed Project will reduce future flooding. The Project will result in an increase in the size of the bridge opening that conveys water beneath the bridge, which will reduce the volume of flooding that bypasses the bridge and pools at the low point along West Main Street by allowing more flow through the opening. The wider bridge opening will reduce overtopping for the 25, 50, and 100-year storms compared to existing conditions. The existing bridge has the capacity to convey up to the 10-year storm with the 50-year and 100-year storms overtopping the roadway. The proposed bridge has the capacity to convey up to the 25-year storm with the 100-year storm overtopping.

Living resources such as flora and fauna

A potential impact that may arise is that during construction there could be disturbance in the waterbody and the associated wetlands during the culvert replacement. 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 a turbidity curtain and silt fence, will be implemented to protect flora and fauna adjacent to the Project area. Disturbed areas will be restored to previously existing conditions.

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. The U.S. Fish and Wildlife Service (USFWS) lists the Indiana bat (endangered), dwarf wedgemussel (endangered), northern long-eared bat (threatened), bog turtle (threatened), and small whorled pogonia (threatened) as the only federally endangered or threatened species under USFWS jurisdiction that may occur within the boundaries of the proposed Project. A NYNHP records request response indicated that the NYNHP has no records of the above federally listed species at or in the vicinity of the Project area. There is no contiguous forested habitat in the vicinity of the Project area. There is no suitable habitat in the Project area for the USFWS threatened and endangered species listed above. GOSR determined that the proposed Project would have “no effect” on species under the jurisdiction of the USFWS. The “no effect” determination was sent to the USFWS New York field office on February 15, 2019 and received a response from the USFWS on April 17, 2019 that the USFWS acknowledged receipt of the “no effect” determination. 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 the NMFS.

Impacts to Property & Lives

The highest priority of this review is to prevent the loss of life. The Project involves improvements to an existing roadway and culverts in an existing developed residential and commercial area in the 100-year floodplain and floodway. The Project will protect property and enhance safety to those most at-risk during disaster events. Improvements that will mitigate flooding along the Monhagen Brook will also benefit the greater community in the City of Middletown and surrounding areas, in that portions of the City of Middletown 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 New York State Historic Preservation Office determined on February 21, 2019 that there will be ‘no historic properties, including archaeological and /or historic resources, affected’ by the Project, as documented in **Attachment 9** of the Monhagen Brook Culvert Project Environmental Review Record Report.

Agricultural, aquacultural, & forestry resources

The Project is located within the boundaries of the City of Middletown and 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, such as the use of silt fence and a turbidity curtain, 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 Monhagen Brook floodplain. Impacts to the floodplain will also be limited, as construction will involve replacement of existing structures in previously disturbed areas. The proposed Project is consistent with, and is permitted by the United States Army Corps of Engineers (USACE) in accordance with Section 404 of the Clean Water Act under Nationwide Permit #3. Based on e-mail correspondence with Brian Orzel from the USACE, a pre-construction notification is not required from the USACE. Additionally, the proposed Project activities are consistent with a Blanket Water Quality Certification under Section 401 of the Clean Water Act from the NYSDEC. USACE and NYSDEC permit documentation, including applicable permit conditions, is included in **Attachment 10** of the Monhagen Brook Culvert Project Environmental Review Record Report. A Floodplain Development Permit will be obtained from the City 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 and a turbidity curtain, 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.

According to the Monhagen Brook Culvert and Drainage Improvements Study, the proposed Project activities were the preferred potential project alternatives based on an analysis of the following items: total estimated cost, flood reduction ranking, property issues, constructability issues, permitting, and notable advantages/challenges for each of the ranked alternatives. The “no action” alternative for not funding this project would not address the purpose and need of the proposed action. 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 a floodplain 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” (FN), was published in accordance with 24 CFR 55. This public notice was combined with the “Notice of Intent to Request Release of Funds (NOIRROF).” The final notice requires a 7-day comment period after publication and the NOIRROF requires a 7-day comment period as well. As such, a 7-day comment period was used for this Final Notice. The FN/NOIRROF was published in the Times Herald Record on December 4, 2020. The 7-day comment period expires at 5pm on December 14, 2020. The combined notice describes the reasons why the Project must be located in the floodplain, 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.