Environmental Assessment
Bridge Street Bridge over the Bush Kill
Village of Fleischmanns, Delaware County, New York

PW-07990

4020-DR-NY

December 2015

Appendix F

EO 11988/11990 Eight-Step Review Decision-Making Process

Bridge 80 Replacement Project
(Bridge Street over Bush Kill)
Village of Fleischmanns
Delaware County, New York

Appendix F

EO 11988 & 11990 Eight-Step Review Documentation

EO 11988 & EO 11990
Eight-Step Decision Making Process Summary
Bridge 80 Replacement Project (Bridge Street over Bush Kill)
Village of Fleischmanns, Delaware County, New York
FEMA-4020-DR-NY PW 07990

Executive Order 11988 (Floodplain Management) and Executive Order 11990 (Protection of Wetlands) require Federal agencies "to avoid to the extent possible the long and short term adverse impacts associated with the occupancy and modification of the floodplains/wetlands and to avoid direct or indirect support of floodplains/wetland development wherever there is a practicable alternative." FEMA's implementing regulations are contained in 44 CFR Part 9, which includes an Eight-Step Decision Making Process for compliance with this part.

This Eight-Step Decision Making Process is applied to the proposed Bridge 80 Replacement Project (Bridge Street over Bush Kill). The Village of Fleischmanns, Delaware County, New York experienced storm damages and flooding from Hurricane Irene that occurred August 26 to September 5, 2011, was declared a major disaster by President Barack H. Obama on August 31, 2011 (FEMA 4020-DR-NY) and subsequently amended. The project is described in FEMA-4020-DR-NY PW 07990 (hereon, the Project). The Grantee for the proposed project is the New York State Department of Homeland Security and Emergency Services and the Subgrantee is the Delaware County Department of Public Works.

The Subgrantee proposes to replace the previous vehicular Bridge 80 (Bridge Street over the Bush Kill) that was washed out in the heavy rains and flooding, with a pedestrian bridge to minimize impacts on the floodplain, and upon completion ownership and maintenance will be transferred to the Village of Fleischmanns. Refer to project design plans and other sections of the Environmental Assessment (EA) associated with this project.

The steps in this decision making process are steps 1, 2, 3, 4, 5, 6, 7, and 8 per 44 CFR Part 9.5(d), as follows:

Step 1 **Determine if the proposed action is located in, affects or is affected by the Floodplain or Wetland.**

The Bridge 80, Replacement Project (Bridge Street; GPS: 42.15522, -74.53234) is located in Zone A within the 100-year floodplain, also referred to as the Special Flood Hazard Area (SFHA), as noted on the National Flood Insurance Program's Flood Insurance Rate Map (FIRM), Community Panel Number 36025C0643D, June 19, 2012. Refer to the FIRM in the EA.

The site is located adjacent to open water/mudflat wetlands of the Bush Kill riparian corridor. The proposed project is expected to impact less than 0.1 acre of wetland. A wetlands review of the proposed project site for the presence of NYS regulated freshwater wetlands conducted at the NYSDEC's "Environmental Resource Mapper" website, shows no state regulated wetlands within the area of disturbance. Similarly, the U.S. Fish and Wildlife Services' (USFWS) National Wetland Inventory (NWI) website does not identify any wetlands within the area of disturbance. EO 11990 has broader definition of wetlands than USACE/NYSDEC approaches to wetland

delineation. Open water and mudflat, essentially all streams, are to be considered "wetland" in accordance with EO 11990. However, in accordance with best management practices, it is anticipated that the construction of the pedestrian bridge and floodplain grading would be temporary impacts to wetlands/floodplain habitat.

Step 2 **Early public notice (Preliminary Notice)**

A cumulative public notice for the disaster was published in the *New York Press Service* newspapers on October 10, 2011. As indicated in the notice, "projects and activities may adversely affect historic property, floodplains or wetlands, or may result in continuing vulnerability to damage by flooding…however, certain measures to mitigate the effects of future flooding or other hazards may be included in the work". The notice also states that "mitigation measures will be incorporated on an action by action basis and this (the October 10, 2011 notice) may be the only public notice concerning these actions. In addition, a project specific notice integrated with the Notice of Availability of the National Environmental Policy Act (NEPA) Environmental Assessment will be published in the local newspapers, the *Catskill Mountain News, Deposit Courier, and Walton Reporter*. The public notice will invite comments within 30 days of the publication date of the notice.

Step 3 **Identify and evaluate alternatives to locating in the base floodplain and wetland.**

44 CFR 9.9 (b) requires that FEMA "identify and evaluate practicable alternatives to carrying out a proposed action in floodplains or wetlands, including:

1) Alternative sites outside the floodplain or wetland;
2) Alternative actions which serve essentially the same purpose as the proposed action, but which have less potential to affect or be affected by the floodplain or wetlands; and
3) No action. The floodplain and wetland site itself must be a practicable location in light of the factors set out in this section.

Factors to consider in determining practicable alternatives include:

1) the natural environment (topography, habitat, hazards, etc.);
2) social concerns (aesthetics, historical and cultural values, land patterns, etc.);
3) economic aspects (cost of space, construction, services and relocation);
4) legal constraints (deeds, leases, etc.); and
5) engineering

The Alternatives analyzed in further detail in the EA included a No Action Alternative and Proposed Action Alternative. The EA also discussed Alternatives Considered and Dismissed in Section 4.3. A brief summary of the three categories of alternatives is the following:

1) No Action Alternative - The Subgrantee would leave the waterway as-is and not pursue replacement of the bridge or re-grading of the floodplain. This would leave the existing bridge substructure (consisting of sheet pile and/or plate/rail walls) in place, which restrict the waterway opening. The no action alternative would leave the grading around the Bush Kill

in its existing condition. As previously mentioned, the channel of the Bush Kill at the project site is forced into a choke point, as sheet piling and abutments were left in-place following removal of the previous bridge. It also appears that property owners at the four corners of the project site have used fill to maintain their property area, pushing the Bush Kill inwards and causing it to have steep stream banks at the project location. As can be seen on the FIRM, this causes water to pool upstream of the bridge during flood events.

2) Proposed Action Alternative - To construct a pedestrian-only bridge with a span length of 86 ft. and a clear deck width (between truss chords) of 10 ft.

In order to satisfy Delaware County DPW hydraulic requirements, the floodplain would be re-graded to remove the manmade encroachments to the stream and floodplains that have resulted in a pinch point at the bridge structure. Re-grading would extend approximately 200 ft. upstream and 80 ft. downstream of the existing centerline roadway. In order to adequately re-grade the floodplain it would be necessary to acquire property from five land parcels along the north and south stream banks, with a total acquisition of approximately 0.30 acres of stream bank (See *Appendix A - Figure 4 and Appendix C - p. 143*). The five parcels include: Parcel #1, Owner: Harriet I. Grossman; Parcel #2, Owner: Roxanne Lowit; Parcel #3, Owner: River Run B&B II, L.L.C.; Parcel #4, Owner: Robert & Marylou Pratt; and Parcel #5, Owner: Beth-Jehuda-Otzar Holocho. Parcel #5 is eligible to be acquired by Delaware County under the FEMA Hazard Mitigation Grant Program. The demolition of the residential structure would be a separate project not related to the Bridge St. bridge project. The County may acquire the property based on voluntary participation by the owner, demolish all structures, and the land would be deed restricted as per 44 CFR, Part 80. Use of this parcel would require approval by FEMA's Regional Administrator. Excavation would require removal of approximately 1,300 CY of material on the north side of the Bush Kill, and 400 CY on the south side. Existing sheetpile, plate/rail abutments and wingwalls from the previous bridge would also need to be removed. It would be necessary to relocate an existing sanitary sewer manhole on the south side of the Bush Kill, to a location outside of the proposed widened channel. A retaining wall, constructed of heavy stone, would need to be constructed between the existing retaining wall and the proposed abutment wingwall.

The new, longer bridge and floodplain grading would alleviate the existing bottleneck at the Bridge Street crossing. Re-grading of the project site would alleviate flooding of the adjacent properties during extreme events, and help to diminish the damage to the new bridge under an event similar to Hurricane Irene. In addition, the bridge replacement project includes re-grading the floodplain in the project site. The effectiveness of the final design of the bridge and the floodplain was determined through hydraulic and hydrologic studies conducted by Modjeski and Masters. The hydraulic analyses show that the upstream water surface elevation (WSE) is lowered by approximately 2.5 feet for the 100-year flood. This alternative would mitigate flooding issues in the surrounding properties, particularly upstream of the bridge.

The applicant is required to coordinate with the local floodplain administrator regarding floodplain permit(s) prior to the start of any activities. All coordination pertaining to these activities and applicant compliance with any conditions should be documented and copies forwarded to the state and FEMA for inclusion in the permanent project files. As per 44 CFR 9.11(d)(9), mitigation or minimization standards must be applied, where possible. In particular to this bridge project, 44

CFR 9.11(d)(4), There shall be no encroachments, including fill, new construction, substantial improvements of structures or facilities, or other development within a designated regulatory floodway that would result in any increase in flood levels within the community during the occurrence of the base flood discharge. Until a regulatory floodway is designated, no new construction, substantial improvements, or other development (including fill) shall be permitted within the base floodplain unless it is demonstrated that the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not increase the water surface elevation of the base flood more than one foot at any point within the community.

3) Alternatives Considered and Dismissed - Other alternatives identified and discussed in the EA that were initially considered included: 1) a vehicular bridge; and 2) a pedestrian bridge with a shorter (70 ft.) span.

No practicable alternatives were identified to continued floodplain occupancy.

Step 4 **Identify impacts of the proposed action associated with occupancy or modification of the floodplain and wetland.**

The Proposed Action Alternative would have beneficial floodplain management impacts for the facility. The proposed alternative would provide flood damage risk reduction at or above the 100-year flood elevation for the project through installation of the proposed bridge and associated floodway improvements for the flood damage risk reduction. The facility would be more resilient and would have less risk of disruption of the public services it provides in the future.

The proposed project would be designed to comply with the National Flood Insurance Program. Specifically, 44 CFR 60.3(d)(3) requires that a hydrologic and hydraulic analysis be performed in accordance with standard engineering practices to demonstrate that the proposed floodway encroachments would not result in any increase in flood levels within the community during the occurrence of a base flood discharge. A hydraulic and hydrologic study was completed by Modjeski and Masters dated January 24, 2014, to assess the hydraulic effects of the flood damage risk reduction system on the water surface elevations and velocities of the Bush Kill.

The proposed bridge type alternative that has been evaluated is the preferred single span configuration. The longer clear span will shift the abutment locations back, and relieve the flow restriction caused by the previous structure's approach embankments. The forecasted hydraulic performance results also assume that the prescribed upstream floodplain stream bank grading is adopted and performed in conjunction with, or prior to, bridge construction. Floodplain grading as proposed will require the relocation of a sanitary sewer manhole in the southeast bridge quadrant. Scour protection is assumed to consist of rock riprap similar to the adjacent emergency stream bank restoration performed by the Delaware County Soil and Water Conservation District. Since there is “zero rise” in water surface elevations and a decrease in channel velocities, the proposed bridge replacement would comply with all local, state and Federal floodplain ordinances and regulations.

Step 5 **Design or modify the proposed action to minimize threats to life and property and preserve its natural and beneficial floodplain and wetland values.**

In order to minimize the risk of future floodplain damage to the existing facility and to comply with EO 11988 and the NFIP, FEMA must minimize potential harm to lives and the investment at risk from the base flood. The Proposed Action Alternative would provide flood damage risk reduction to above the 100-year level of protection through construction of the stream-bank modifications. The stream-bank modifications would be designed to avoid any increases in water surface elevations or hazardous increases in channel velocities along the study reach of the Bush Kill. To help offset this impact and E.O. 11990 minor wetlands impacts, it is requested that the Subgrantee replant riparian corridor vegetation disturbance area (>0.1-acre) along the Bush Kill to restore riparian habitat character on-site. A variety of native species could be seeded or planted and live willow or red-osier dogwood stakes could potentially be incorporated into the rip-rap/rock reaches of the design. With the replanting of the riparian corridor any potential harmful effect to the wetland would be negated over time.

As mentioned in 5.1.2 of the EA, the Subgrantee would have minor impacts to the physical features of the project site, including ground disturbance during construction. Some impacts to soils and topography (ground disturbance) during construction would occur from tree removal and grading of the floodplain. Best management practices (BMPs) will be utilized to minimize erosion and control sediment, including use of filter fabric adjacent to all areas of soil disturbances to reduce transport of dislodged soils into nearby streams and seeding/mulching of disturbed soils to help establish a vegetative cover and stabilize disturbed areas. The area of disturbance would be approximately 0.5 acres, including the area along the stream crossing.

Step 6 **Re-evaluate the proposed action.**

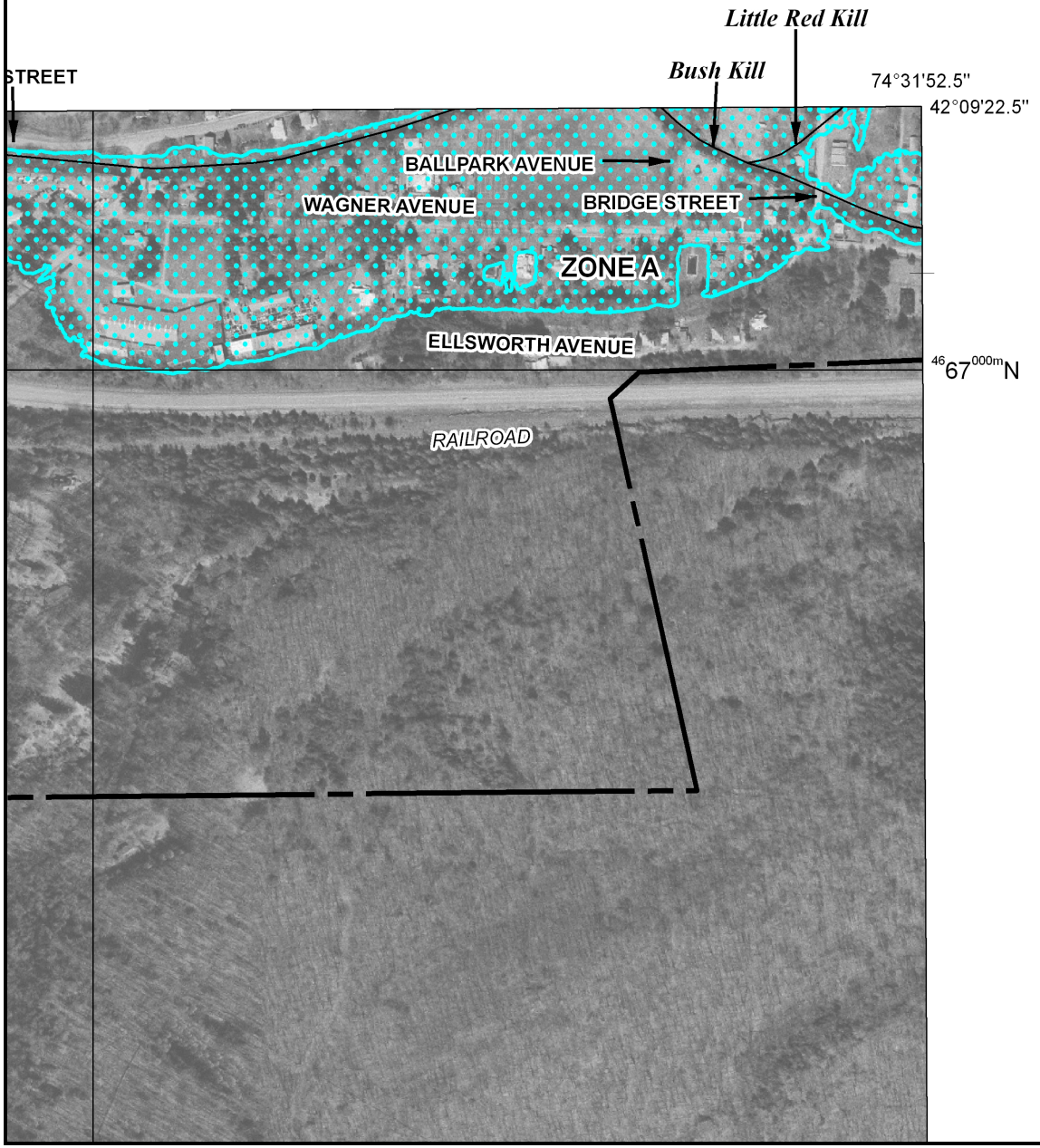
After evaluating alternatives including impacts and minimization opportunities, as set forth by factors described in 44 CFR Part 9.9(c) and documented in Step 3 of this Eight-Step Review, FEMA determined that the Proposed Action Alternative was a practicable alternative. No practicable alternatives to avoid continued floodplain occupancy were identified. The No Action Alternative would not meet the project purpose and need. The public benefits of the project outweigh the risk of investment into the floodplain-located facility. Future flood damage risk would be reduced to the extent practicable with the bridge designed to above the 100-year floodplain elevation.

Step 7 **Final Public Notice**

FEMA's determination is documented in this summary. This Eight-Step Review as part of the project's Environmental Assessment (EA) will be made available for public review and comment with a project specific public notice. The Final Public Notice will be integrated with the anticipated Finding of No Significant Impact statement for the EA.

Step 8 **Implement the action.**

The project will be constructed in accordance with the proposed scope of work and applicable floodplain development requirements as described in the project worksheet and per conditions of the federal grant. The Subgrantee is responsible for review of the final building plans and will need to ensure compliance with all applicable Federal, state, and local codes and standards. The Subgrantee will need to obtain all required building and site development permits, as a condition of the Federal grant, to protect the environment, and to minimize risk and harm to life and property. To restore the facility to its pre-disaster functionality, the facility must be sited, elevated or floodproofed to at/above the 100-Year Floodplain utilizing the Best Available Data for 100-year floodplain determination (*Flood Insurance Rate Map Community-Panel Number36025C0643D, dated June 19, 2012*) in accordance with the NFIP and 44 CFR Part 9. The Subgrantee will submit copies of obtained permits and certification from the local floodplain administrator in accordance with 44 CFR 65.10 to NYSDHSES/FEMA at/before final project closeout documentation submission.



MAP SCALE 1" = 500'

250 0 500 1000

FEET

METER

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0643D

FIRM

FLOOD INSURANCE RATE MAP

for DELAWARE COUNTY, NEW YORK
(ALL JURISDICTIONS)

CONTAINS:

COMMUNITY	NUMBER
FLEISCHMANNS, VILLAGE OF	360197
MIDDLETOWN, TOWN OF	360209

PANEL 643 OF 1052
MAP SUFFIX: D
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
36025C0643D

EFFECTIVE DATE
JUNE 19, 2012

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

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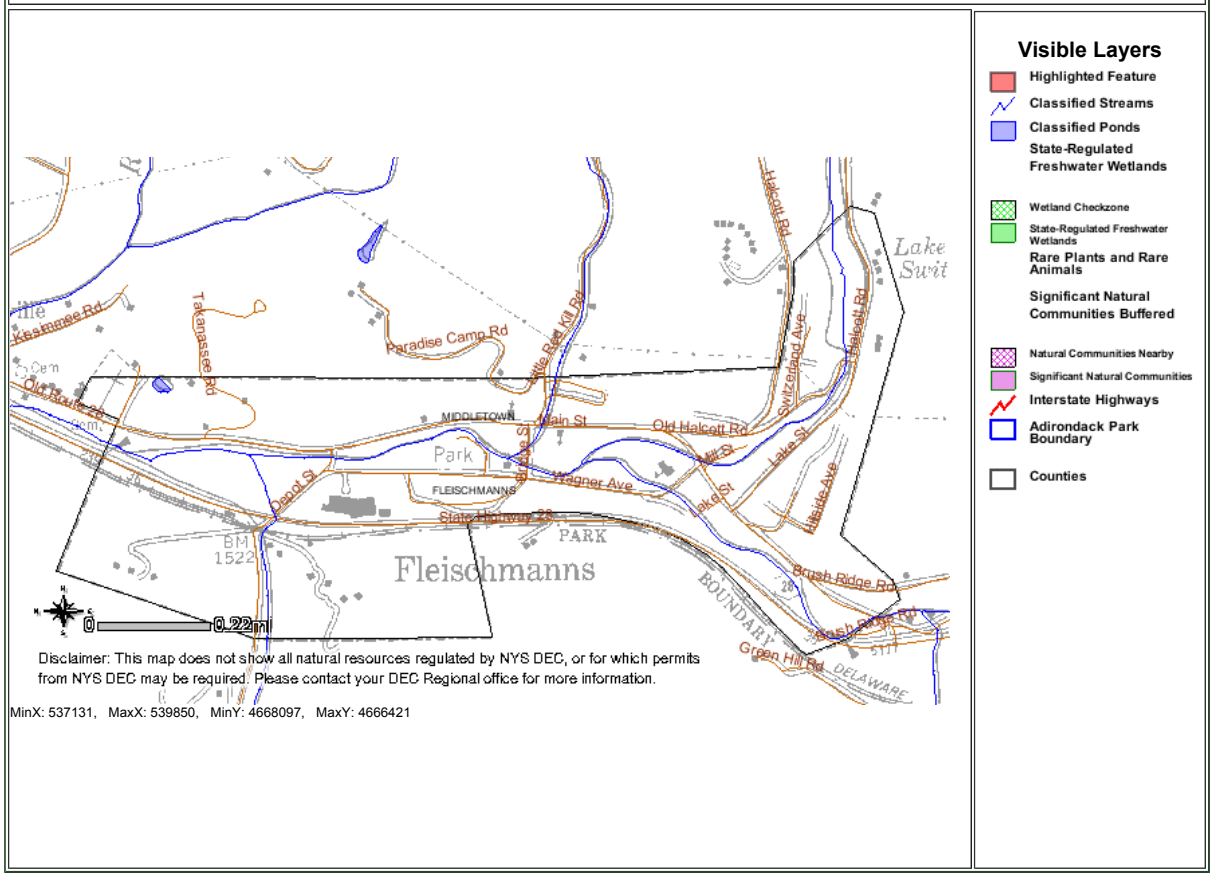
Please set your printer orientation to "Landscape".

PW07990



MinX: 537131, MaxX: 539850, MinY: 4668097, MaxY: 4666421

Disclaimer:This map was prepared by the New York State Department of Environmental Conservation using the most
current data available. It is deemed accurate but is not guaranteed. NYS DEC is not responsible for any inaccuracies
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Google earth

feet 600

meters 200