

Ticonderoga Chilson Water Transmission Main
Facility Hazard Mitigation Relocation Project

Appendix F

EO 11988/11990 Eight-Step Review

Decision-Making Process

EO 11988/11990 Eight-Step Review Decision Making Process - Summary
Ticonderoga Chilson Water Transmission Main, Town of Ticonderoga, NY
Facility Hazard Mitigation Relocation Project
FEMA-4020-DR-NY PW 06009
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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.

The Eight-Step Review Decision Making Process is applied to the Ticonderoga Chilson Water Transmission Main Facility Replacement Project. The Town of Ticonderoga, Essex County, New York, experienced storm damage and flooding from Hurricane Irene that occurred August 26 to September 5, 2011. President Barack Obama declared the incident a major disaster on August 31, 2011. The project purpose is to restore and enhance the resiliency of the transmission line infrastructure necessary to provide safe and reliable water service to the Town of Ticonderoga. The existing Chilson Water Transmission Main sustained wash out and two breaks, compromising the water quality and interrupting service. Temporary repairs were made to the existing water main to return water service to the community; however, these repairs are not suitable for long-term use. As the line has sustained repetitive damage in previous events, hazard mitigation activities are proposed to make permanent repairs to the line while also preventing future storm damages through the rerouting of the water main away from Chilson Brook. In accordance with FEMA Recovery Policy 9526.1 VII.B.3, a Benefit Cost Analysis (BCA) was conducted and determined that the relocation of the water main to a less hazardous location was a cost effective hazard mitigation measure. The proposed project would abandon in place the damaged facility along Chilson Brook and install a new water main along a new route primarily within the ROW of NYS Route 74. The Grantee for the proposed project is the New York State Division of Homeland Security and Emergency Services and the Subgrantee is the Town of Ticonderoga.

The Subgrantee seeks funding from FEMA to replace and relocate the damaged facility to a new site away from Chilson Brook in an effort to reduce future damages and assure reliable water service for the community, as described in FEMA-4020-DR-NY PW 06009 (hereon, the Project). The repair and replacement of the water transmission line would be a critical action as defined at 44 CFR Part 9.4, as a critical component of water supply to the community; therefore, impacts to and by the 500-year floodplain are considered in accordance with EO 11988 and 44 CFR Part 9. The decision making process consists of subsequent eight steps (i.e., 1, 2, 3, 4, 5, 6, 7, 8) per 44 CFR Part 9.5(d), as follows:

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

While not mapped in a Special Flood Hazard Area (SFHA) or 500-year floodplain for flood insurance purposes, Chilson Brook has a base flood and floodplain and floodplain habitat function and value. As the existing water main is located in the bed of the creek, it is considered to be within the floodplain. According to the FIRM (Community Panel Number 3611590015C, effective September 6, 1996), both Alternatives I and II are entirely located in an area identified as Zone X, which is an area determined to be outside of the 500-year floodplain (See *Appendix A*). However, both alternatives would cross the stream and are therefore within the floodplain for a short distance.

A wetlands review was conducted at the NYSDEC's "Environmental Resource Mapper" website of the water main's original route along Chilson Brook and the two alternative routes along NYS Route 74 and Old Chilson Road to identify the presence of NYS regulated freshwater wetlands; no state-regulated wetlands are mapped within the direct route of any of the three alternatives. Based on a review of the U.S. Fish and Wildlife Service's (USFWS) National Wetlands Inventory (NWI) website, Federally-mapped wetlands are present along the proposed alternative, which extends north from the Chilson Reservoir and then east along NYS Route 74. The Chilson Reservoir is identified as a PUBHx (Paulstrine, Unconsolidated Bottom, Permanently Flooded, Excavated) and there are two USFWS identified wetlands located to the northwest of the reservoir on town-owned property. The proposed route of the new water main crosses a PUBFb (Palustrine, Unconsolidated Bottom, Semi permanently Flooded, Trees, Shrubs, Mosses) and is located within 200 feet of a PEM1Eb (Palustrine, Emergent, Persistent Vegetation, Seasonally Flooded). These wetlands measure less than one acre. One small wetland is also identified by the USFWS near the alternative route along Old Chilson Road that would not be directly impacted: a PSS1E (Palustrine, Scrub-Shrub, Broad-Leaved Deciduous, Seasonally Flooded/Saturated).

In addition, the Adirondack Park Agency (APA) was contacted and indicated that a wetland habitat subject to agency jurisdiction was identified in the vicinity of the route of the proposed action. A site visit was conducted by APA staff and the wetlands along the proposed route were delineated. The proposed route of the water line crosses both Chilson Brook as well as the APA-delineated wetland, which corresponds with the PuBFb wetland identified on the NWI website.

Step 2 Early public notice (Preliminary Notice)

On October 10, 2011, FEMA published a cumulative public notice for the Hurricane Irene disaster in the *New York Press Service* newspapers. As indicated in the public 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 public notice also stated 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 newspaper, the

Times of Ti. 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 floodplain or wetland.

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

- 1) Alternative sites outside the 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 wetlands; and
- 3) No action. The wetland site itself must be a practicable location in light of the factors set out in this section” (below).

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 feasibility.

According to 44 CFR Part 9.9 (b), alternatives considered include:

- 1) No Action Alternative - No federal funding. The Town of Ticonderoga continues water service through the existing Chilson Water Transmission Main, not completing permanent repairs to the line.
- 2) Proposed Action Alternative - Relocate the facility permanently along NYS Route 74.
- 3) Alternative Action – Relocate the facility permanently along Old Chilson Road.

The No Action Alternative would not provide Federal funding to relocate and conduct permanent repairs to the water main. Thus, it is anticipated that the Subgrantee would continue to utilize the existing water main, leaving the temporary repairs in place. This alternative is not practicable in the long term, as the temporary repairs are not intended for long-term use and the line is subject to future damages during subsequent major storm events, as has been the case in the past. Continued storm damage to the line would likely result in further interruptions to service, which may jeopardize public health. This alternative would not meet the project purpose and need to provide safe and reliable water service to the community and would leave the facility within a floodplain, subject to future storm-related damage.

The Proposed Action Alternative would use eligible Federal funding to replace the damaged water main along a new route away from Chilson Brook. Relocating the facility would reduce future storm damage risk and ensure safe and reliable water service to the community. The proposed relocation route extends from the Chilson Reservoir at the western terminus, extending north through the town-owned property, parallel with an existing utility corridor. The route will incorporate approximately 194 LF of temporary wetland and stream disturbance through an open cut needed to install the water main below Chilson Brook, before continuing north to the south side of Chilson Middle Road. The water line will continue to the east along the south side of

NYS Route 74, within the ROW, until reaching the eastern terminus at the existing main where it crosses the highway near the intersection with Race Track Road. The Subgrantee would cap and abandon the existing water main in place; although small sections may be removed if they conflict with the new construction. This alternative would relocate the majority of the line outside of the floodplain, with only a small section crossing Chilson Brook located within a floodplain. The proposed project would temporarily impact approximately 246 square yards of wetland hydric soils during construction. APA, NYS DEC, and USACE permit conditions would be followed to minimize disturbance of the wetlands and assure that the areas are restored in an appropriate manner.

The Alternative Action would also use eligible Federal funding to replace the damaged water main along a new route away from Chilson Brook. Relocating the facility would reduce future storm damage risk and ensure safe and reliable water service to the community. The alternative relocation route extends from the Chilson Reservoir at the western terminus, extending east along the Old Chilson Road ROW to Race Track Road. This route would also require a crossing of wetlands and Chilson Brook likely through an open cut, which would result in similar impacts to that discussed above under the Proposed Action. The Subgrantee would cap and abandon the existing water main in place; although small sections may be removed if they conflict with the new construction. This alternative would relocate the majority of the line outside of the floodplain, with only a small section crossing Chilson Brook located within a floodplain. While the wetlands were not delineated by the APA along this alternative route and no wetlands are identified on the NWI website that had the potential to be impacted by this alternative, the APA has identified jurisdictional wetlands along this route. Although this alternative has similar wetland impacts and also meets the project purpose and need, the route is substantially longer than the proposed action, and is therefore more costly and less practicable than the Proposed Action Alternative.

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

The proposed project would involve a crossing of Chilson Brook, which is a floodplain, and adjacent wetlands, which would temporarily impact a small area of floodplain and wetlands. There would be no permanent impacts to the floodplain wetland. Positive impacts would result to floodplains as the majority of the facility will be relocated outside of the floodplain. The project involves the temporary removal and storage of approximately 246 square yards of wetland hydric soils. The soils would be carefully removed, stored on tarps and replaced upon installation of the water main. An approximately 12'-wide and 194' long section of wetlands and the brook would be impacted, including the 6' cut for the water main installation and 6' for equipment access parallel to the water main. The brook will be temporarily channeled to flow through a culvert pipe, while approximately 35 cubic yards of brook bed material is removed and the water main and concrete encasement are installed. The trench will be refilled using the existing material, and geogrid fabric and clean rip rap will be placed to match existing brook bed grades.

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.

To minimize impacts to wetlands and to comply with EO 11990, best management practices would be used during construction to minimize any potential impacts to nearby wetland areas. Per APA and USACE permit conditions, efforts will be taken to minimize wetland disturbances. Silt fencing and construction fences will be installed downstream of construction and alongside the brook bed, as well as along areas to be cleared and graded. Sand bags will be placed to divert stream flow into the culvert and around the trench. Soils will be placed on tarps as they are removed and used to backfill the trenches.

Directional drilling was also considered as an alternative construction methodology for the stream crossings necessary to relocate the water main, and was initially pursued to minimize stream impacts in project plans. This construction method was ultimately dismissed as more data was gathered regarding site conditions. It was subsequently determined that the directional drill method was less likely to be successful and would potentially result in additional environmental impacts. The bedrock underlying the stream is a severely fractured type that drilling slurry often seeps into, reducing its effectiveness and resulting in the loss of drilling abilities, damage to equipment, and the potential for release of the slurry into the brook and wetlands. The soil above the bedrock layers is a mixture of cobbles, boulders, and sand, which is also not conducive to directional drilling. Furthermore, previous drilling attempts on the property similar to directional drilling have been unsuccessful due to these site conditions; therefore, this alternative was dismissed and stream crossings will be made through open cut trenching methods. The water main is gravity fed and alternative locations of the crossing would not maintain the critical elevations needed to allow the water system to function.

Step 6 Re-evaluate the proposed action.

The No Action Alternative would have no direct and indirect effects on wetland occupancy. This alternative would result in the continued use of a facility within the floodplain.

The Proposed Action Alternative and the Alternative Action would both result in positive impacts to the floodplain from the relocation of the majority of the facility out of the floodplain and areas subject to water resource-related erosional forces. These alternatives would also result in temporary impacts to wetlands; although efforts would be made to minimize the impacts. The Proposed Action Alternative meets the project purpose and need and is also less costly than the Alternative Action. The Proposed Action is a practicable alternative and the occupancy of the floodplain/open water wetland area associated with the stream crossing is not avoidable. The public benefits of the project outweigh the risk of the small area of floodplain occupancy; and the risk of floodplain occupancy has been minimized by the proposed design alternative for construction of the trenched stream crossing segment, as well as more significantly by the relocation of the other length of the line outside hazardous area to the alternative alignment along NYS Route 74.

Step 7 Findings and Public Explanation (Final Notification).

After evaluating alternatives, including impacts and minimization opportunities, FEMA has determined that the Proposed Action Alternative is the practicable alternative as set forth by factors described in 44 CFR Part 9.9(c) and documented in *Step 3* of this Eight-Step Review.

The Proposed Action Alternative would relocate the facility away from Chilson Brook, with only a small section of the line crossing the floodplain, and reduce risk of damage from future storm events. While wetlands will be impacted under the Proposed Action Alternative, these impacts will be minimized as much as possible using best practices and in accordance with permit conditions.

FEMA's determination is documented in this summary and the associated Record of Environmental Consideration report for the proposed project. This Eight-Step Review will become part of the Chilson Water Transmission Main Environmental Assessment that will be made available for public review and comment with a project specific public notice. The Final Notice will be integrated with the Finding of No Significant Impact (FONSI) statement that is anticipated for the proposed action.

Step 8 Implement the action.

This is a Federal grant. The Subgrantee is responsible for review of the final construction plans and will need to assure compliance with all applicable Federal laws, executive orders, and regulations, as well as state and local laws, regulations, codes and standards. The Subgrantee will need to obtain all required Federal, state, and local building and site development permits, such as a State Pollutant Discharge Elimination System (SPDES) permit, as a condition of the Federal grant, to preserve the environment, and to minimize risk and harm to life and property.