

Owego Apalachin Maintenance and
Storage Building Replacement Project

Appendix G

EO 11988 & 11990

Eight-Step Review Documentation

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EO 11988 & EO 11990 Eight-Step Decision Making Process Summary
Owego Apalachin Central School District, Tioga, NY
Maintenance and Storage Building Replacement Project
FEMA-4031-DR-NY PW 01999 and 02001

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 Owego Apalachin Maintenance and Storage Building Replacement Project. The Town and Village of Owego, Tioga County, New York, experienced storm damages and flooding from Tropical Storm Lee that occurred September 7, 2011 to September 11, 2011. The storm incident period was declared a major disaster by President Obama on September 13, 2011 (amended September 23, 2011). The project purpose is to provide a maintenance and storage facility for the Owego Apalachin Central School District to restore the functionality of the flood-damaged facility at 75 Elm Street in the Village of Owego and reduce the risk of future flood damage. The project is described in FEMA-4031-DR-NY PW #01999 and PW #02001 (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 Owego Apalachin Central School District.

The project worksheet was originally written to repair the facility in kind and was then revised to incorporate flood damage risk reduction measures to floodproof the building by building a floodwall. The Subgrantee’s proposed action, as noted in their submitted alternative analysis documentation and documented in an environmental assessment (EA), dated June 2015, is to construct a new maintenance and storage facility north of the new Elementary School and proposed Administration Building on Sheldon Guile Boulevard in the Town of Owego at a location outside of the 100-year floodplain. This project would utilize alternative procedures for FEMA’s Public Assistance (PA) Program (Section 428) authorized by the Sandy Recovery Improvement Act of 2013. A pilot program using these procedures is being implemented in New York. Applicants may request funding for permanent work based on an estimate for repair, restoration, reconstruction or replacement of a public facility damaged in a disaster. The purpose of the pilot program is to increase flexibility for PA applicants, reduce costs for the PA program, expedite assistance to eligible applicants, and provide financial incentives for timely, cost-effective completion of PA projects. This project would take advantage of this pilot program and available federal funding would be applied through the Section 428 program to the Subgrantee’s preferred alternative.

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:

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

The Owego Apalachin Maintenance and Storage Buildings (75 Elm Street, Village of Owego, Lat/Long 42.10261, -76.27078) are located in Zone AE 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 36107C0382E, effective April 16, 2012. The Base Flood Elevation (BFE) at the original facility site is approximately 812 feet NAVD 1988. The elevation of the 100-year base flood elevation plus two feet at the existing facility location is equivalent to the approximate 500-year floodplain elevation. The existing buildings were determined substantially damaged per the local code enforcement official/floodplain manager. See attached correspondence dated August 29, 2012.

The proposed relocation site for the new facility is located north of the terminus of Sheldon Guile Boulevard in the Town of Owego (Lat/Long 42.12105, -76.27295). The proposed relocation site is partially located in the 500-year floodplain; however, it is located entirely outside the 100-year floodplain, as noted on FIRM, Community Panel Number 36107C0382E, effective April 17, 2012. The BFE in proximity to the relocation site is approximately 818 feet NAVD 1988. Refer to the FIRM in the project's Environmental Assessment *Appendix D Subgrantee's Environmental Evaluation Documentation* showing the location of the proposed site location. Neither the existing site nor the proposed relocation site is located within wetlands. The proposed scope of work would not affect wetlands, thus no further wetland analysis is required.

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, this project was mentioned in a project specific notice integrated with the Notice of Availability of the National Environmental Policy Act (NEPA) Environmental Assessment for the Owego Administration Building that was published in the local newspapers, the *Binghamton Press & Sun-Bulletin* on February 14, 2015.

In addition a project specific notice integrated with the Notice of Availability of the NEPA Environmental Assessment for this project, the Owego Apalachin Maintenance and Storage Building, will be published in the same local newspapers and will invite comments within 15 days of the publication date of the notice.

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

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

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- 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) 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); and
- 4) legal constraints (deeds, leases, etc.).

Alternatives considered included:

- 1) The No Action Alternative- facility would remain abandoned/rendered safe and secure
- 2) Proposed Action Alternative – Relocate the project outside the 100-Year floodplain and reunify staff and services back into one facility and reduce flood risks from future storm events. The damaged facility would be rendered safe and secure.
- 3) Repair with NFIP Compliance Alternative – Repair of the existing facility with floodproofing via a floodwall to bring the structure into code compliance in accordance with the NFIP.

The No Action Alternative would not provide any Federal funding to relocate the Owego Apalachin Maintenance and Storage Facility outside of the 100-year floodplain or repair the existing facility (75 Elm Street) in the 100-year floodplain. It is anticipated that absent Federal financial assistance, the Subgrantee would likely not construct the new facility outside the 100-year floodplain. Thus, as the No Action Alternative, the original facility would remain abandoned/rendered safe and secure. The staff who previously worked at this location would necessarily continue to work from alternative locations within the school district in a fragmented status. The No Action Alternative would not address the proposed project’s purpose and need.

Under the Proposed Action Alternative, the Subgrantee would construct a new 25,196 square foot maintenance and storage building to replace the existing facility. The proposed project would site the new building on the northernmost parcel of the Owego School Complex, known as the Monkey Run Site. The parcel is 49.88 acres and accommodates athletic fields used by the Owego Apalachin Middle School and the Owego Free Academy. The majority of this property is located within the SFHA, the 100-year floodplain, the regulatory floodway and the 500-year floodplain. However, the proposed project site is located outside the 100-year floodplain; the AD would be 3.72 acres. Only a small portion of the proposed parking area would be located within the 500-year floodplain. The site has access to existing infrastructure, including roads, water and gas utilities; however, municipal sanitary sewer does not serve this site. This alternative would comply with the Town of Owego floodplain ordinance and NFIP requirements. The existing building at 75 Elm Street would be rendered safe and secure. This alternative would address the proposed project’s purpose and need.

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The Subgrantee initially considered Repair with NFIP Compliance Alternative, repairing the flood-damaged maintenance and storage buildings at 75 Elm Street to their pre-disaster designs and functions. The repairs included upgrading the facilities to be compliant with existing safety codes and standards set forth by the New York State Uniform Fire Prevention and Building Code (NYSUFPBC) and to meet current Americans with Disabilities Act (ADA) standards in the damaged areas and connecting travel paths. The facilities would also be modified to meet NFIP compliance requirements. The initial flood proofing mitigation measures that FEMA proposed to protect the facility from flooding included small-scale dry flood proofing measures, such as adding a concrete footing around the building with door and window dams. However, the Subgrantee provided letter documentation from a licensed architect that stated that the existing building was believed to be substantially damaged and that the existing walls could not sustain the lateral load of 5.4' of floodwaters, such that dry flood proofing of the existing structure was not feasible from an engineering perspective. The letter identified that the only practical means to meet NFIP requirements and the local floodplain code requirements for the existing facility structure was to install a floodwall around the perimeter of the structure and add backflow preventers on all service piping to provide flood damage risk reduction to the base floodplain elevation plus two feet as required by state and local regulations. The local code enforcement official/floodplain manager concurred with the findings that the building was substantially damaged and that a floodwall alternative was the only practical flood proofing alternative and recommended demolition and relocation via letter correspondence dated August 29, 2012. Refer to attached letter dated June 25, 2012.

A floodwall alternative was explored for cost estimation and initial feasibility analysis to a concept level of design. The conceptual floodwall alternative would be to construct a reinforced concrete T-wall system with sheet piling cut off walls and flood gates around the perimeter of the property. The flood wall would be approximately 1,342 feet long, and extend 4 feet below grade and 7 feet above grade when finished.

The Village of Owego Floodplain Code dated September 4, 2012, requires that the volume of space occupied by new development below the base flood elevation be compensated for and balanced by a hydraulically equivalent volume of excavation taken from below the BFE. Further, all such excavations shall be constructed to drain freely to the watercourse. The Subgrantee identified the school district-owned lot adjacent and to the west of the existing facility for compensatory floodplain mitigation excavation to satisfy local floodplain code. Based on the estimate of 21,000 CY of required floodplain compensation, a conceptual grading plan was developed for the vacant site. This amount of compensation would require extensive grading of the site reaching approximately 5 feet deep. The location of the site in a depressed area did not allow for the water to freely drain, therefore the mitigation plan as proposed would not comply with the local floodplain ordinance. It was also noted that because the existing site was in the 100-year backwater elevation of the Susquehanna River, access to the site would not be possible during a major event, such as was seen during Tropical Storm Lee.

As the costs were considerably high for a floodwall with compensatory floodplain mitigation alternative, the Subgrantee identified that it was preferable and prudent to apply available FEMA funding from the 428 PA Program towards a relocation alternative - the proposed action, instead of repairing the existing structure with code compliance. The Subgrantee determined that relocating outside the floodplain was practicable for the community and a preferred approach to

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continued occupancy of the 100-year floodplain. The repair of the existing facility with incorporation of flood damage risk reduction measures to floodproof the facility to at or above the BFE for the SHFA was not furthered for environmental analysis; however, it is an alternative maintained for cost comparison and cost-share arrangement considerations that is not addressed in this EA.

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

The Proposed Action Alternative would have a positive impact on flood damage risk reduction and would not adversely affect the natural habitat values or other functions of the floodplain. The Owego Apalachin Maintenance and Storage Facilities would be relocated outside of the 100-year floodplain and predominantly outside of the 500-year floodplain; thereby reducing risk of flood damage to the facility and reducing future disruption of the operations of the facility due to flood events. The new building would be sited in the upland portion of the property outside the 500-year floodplain. The 500-year floodplain site development would not induce flooding on downstream or upstream properties. The Subgrantee's engineer documented that the proposed action would not encroach into or displace base flood storage volume.

The existing buildings would be rendered safe and secure, minimizing risks to the structure and risks of floating debris during future flood events.

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

Flood damage risk reduction for the Proposed Action Alternative would be addressed via relocation of the facility outside of the 100-Year floodplain.

Stormwater management features would be designed and implemented for the Proposed Action alternative to manage for the increased impervious cover. Construction best management practices would be implemented to minimize potential sedimentation and erosion.

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 has determined that:

- 1) The No Action Alternative would continue floodplain occupancy and may have a negative impact on the floodplain if the existing building was not rendered safe and secure such that remaining materials could become floating debris or pollutant releases during future floods or over time in the floodplain. The No Action Alternative would not be a practicable alternative, as it would not achieve the project purpose or fulfill the project need.

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- 2) The Repair with NFIP Compliance Alternative, while practicable from an engineering perspective, would not achieve the flood damage risk reduction benefits that the Subgrantee's preferred relocation alternative would achieve.
- 3) The Proposed Action Alternative would relocate the facility outside the 100-Year floodplain and substantially outside the 500-Year floodplain, thereby reducing the risk of flood damage to the facility and reducing future disruption of school operations. The building would be sited outside the 500-year floodplain. The occupancy and development of the 500-year floodplain for site amenities/site grounds is outweighed by the public benefits of the proposed project. The existing facilities would be rendered safe and secure which would benefit floodplain function and values. It is practicable for the community to undertake this alternative through applying available Public Assistance Grant funding via the 428 Program.

Step 7 Final Public Notice

FEMA's determination is documented in this summary. This Eight-Step Review as part of the Owego Apalachin Maintenance and Storage Building Replacement Project Environmental Assessment 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.

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 Number 36107C0382E dated April 17, 2012*) in accordance with the NFIP and 44 CFR Part 9.

HIGHLAND ASSOCIATES

6/25/2012

Mr. James Mead

Code Enforcement Officer
Village of Owego
20 Elm Street
Owego, NY 13827

RE: Owego Apalachin Central School District - Storage / Bus Garage
75 Elm Street
Owego, NY 13827

Dear Mr. Mead,

On behalf of the Owego Apalachin Central School District (OACSD), I am writing to ask you to review and approve our evaluation of flood proofing measures proposed for the OACSD Storage / Bus Garage Building.

The 9,359 square foot Storage Building, built in 1977, located at 75 Elm Street in Owego New York, is a 1-story, non-combustible/combustible type of construction. (Type IIIB per NYSBC) the existing facility is a S-1 (Storage-Moderate Hazard).

The Storage Building sustained damages in the flood of September 7 and 8, 2011. The estimated cost to repair the building to pre-disaster condition is \$347,786 as per FEMA repair cost estimate¹. The buildings current appraised value is \$318,000². The repair costs are 109% of the current appraised value. We believe this qualifies the building as a "substantially damaged" building under NFIP flood plain management regulations.

The existing finish first floor elevation is 809.6 (See attachment A for Certified Elevation Certificates). The entire building is within the flood zone and has a 100 year base flood elevation (B.F.E.) of 813.0'. Flood plain compliance will be required which is +2' above the B.F.E. (815.0'). Refer to Attachment B for flood map.

Finish Floor.....	809.6'
B.F.E.....	813.0'
Design Requirement (BFE + 2').....	815.0'
Flood Proofing Design Required.....	5.4'

The structure constructed of CMU. It is unknown if flood waters altered the structural integrity of foundations, footings and wall systems but it assumed some level of damage has occurred based on visual inspections. We do feel the building is safe and is not a concern from a structural standpoint. The building had no design features to prevent flood water intrusion. The water level within the building rapidly

¹ FEMA Project Worksheet 0C3DE97, CEF Total Project Summary, Part A

² Summary Appraisal Report of 36 Talcott Street, Owego, NY, by Congdon & Company Inc., dated 01/12/2012

HIGHLAND ASSOCIATES

equalized to the level of external flooding thereby preventing large scale structural damage to the building.

In an effort to achieve floodplain compliance in accordance with FEMA Regulations¹, we have evaluated options to waterproof the structure. The existing buildings walls cannot support the lateral loading associated 5.4' of flood water against the exterior walls of the building. We have determined the only practical means of obtaining flood plain compliance would be to install a flood wall around the perimeter of the structure and back flow preventers on all service piping. Please refer to Attachment C for site drawing and flood wall design.

If you concur with our conclusion that: 1) the building is "substantially damaged" as defined by NFIP Floodplain Management regulations and 2) installing a flood wall and back flow preventers is the only practical means to obtain flood plain compliance, as mandated by NFIP requirements for "substantially damaged" buildings, please respond with a letter confirming your conclusions.

Should you have any questions, concerns or require additional information, please contact me.

Sincerely,



William Flynn, Principal, AIA, Highland Associates

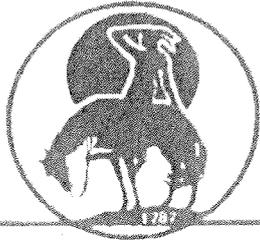
cc: Dr. William Russell, Superintendent of Schools, Owego Apalachin Central School District



¹ Title 44 CFR, § 60.3 Flood plain management criteria for flood-prone areas,

(c) When the Federal Insurance Administrator has provided a notice of final flood elevations for one or more special flood hazard areas on the community's FIRM and, if appropriate, has designated other special flood hazard areas without base flood elevations on the community's FIRM, but has not identified a regulatory floodway or coastal high hazard area, the community shall:

- (1) Require the standards of paragraph (b) of this section within all A1-30 zones, AE zones, A zones, AH zones, and AO zones, on the community's FIRM;
- (2) Require that all new construction and substantial improvements of residential structures within Zones A1-30, AE and AH zones on the community's FIRM have the lowest floor (including basement) elevated to or above the base flood level, unless the community is granted an exception by the Federal Insurance Administrator for the allowance of basements in accordance with § 60.6 (b) or (c);
- (3) Require that all new construction and substantial improvements of nonresidential structures within Zones A1-30, AE and AH zones on the community's firm (i) have the lowest floor (including basement) elevated to or above the base flood level or, (ii) together with attendant utility and sanitary facilities be designed so that below the base flood level the structure is watertight with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy;
- (4) Provide that where a non-residential structure is intended to be made watertight below the base flood level, (i) a registered professional engineer or architect shall develop and/or review structural design, specifications, and plans for the construction, and shall certify that the design and methods of construction are in accordance with accepted standards of practice for meeting the applicable provisions of paragraph (c)(3)(ii) or (c)(8)(ii) of this section, and (ii) a record of such certificates which includes the specific elevation (in relation to mean sea level) to which such structures are flood proofed shall be maintained with the official designated by the community under § 59.22(a)(9)(iii);



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Village of Owego

20 Elm Street

Owego, New York 13827

Office of the Mayor
Village Clerk/Treas
FAX
Sewer Dept
FAX

607/687-1710
607/687-3555
607/687-1787
607/687-2282
607/687-2344

Village Police Dept
FAX
Dept. of Public Works/Code
FAX
Village Garage

607/687-2233
607/687-2235
607/687-1101
607/687-2062
607/687-2221

TO: Owego Apalachin Central School District Administration

DATE: August 29, 2012

RE: Owego Apalachin Central School District - Flood Proofing

TO: Dr. William Russell

After reviewing the reports by Highland Associates regarding flood proofing measures for the Owego Apalachin School District and on August 29, 2012 visiting and inspecting three sites; the bus garage/storage building, the maintenance building on Elm Street along with the administration building located on Talcott Street, there is no question that all three sites are substantially damaged from the flood of September 8, 2011. The proposed flood walls, in my opinion, are the only practical means of flood proofing compliance.

Given the facts from visiting the three structures, and reviewing the proposed flood walls, this office feels that the most effective remediation is to demolish and remove all three structures from the flood plain.

Sincerely,

James S. Mead
Code Enforcement Officer/Floodplain Manager
Village of Owego