NEW YORK STATE | Homeland Security and Emergency Services

ANDREW M. CUOMO
Governor

JOHN P. MELVILLE
Commissioner

August 29, 2016

James Finch, Supervisor
Town of Conklin
P.O. Box 182
1271 Conklin Road
Conklin, NY 13748

RE: FEMA-Hazard Mitigation Grant Program (HMGP) 4085-0078
Town of Conklin, Broome County, NY
Powers Avenue Evacuation Route

Dear Mr. Finch:

The New York State Division of Homeland Security and Emergency Services (State DHSES) is writing to inform you that the Federal Emergency Management Agency (FEMA) has determined that the referenced project application for the Town of Conklin Powers Ave. Evacuation Rte. Project does not meet eligibility criteria for funding under the HMGP. For your review, we have attached a copy of FEMA's letter that describes the eligibility review process and identifies the reason(s) for this determination of the Town's project application.

You have the right to appeal FEMA's decision. A written appeal to this office must be submitted within 60 days of the date of DHSES's letter. As noted in the enclosed letter, FEMA and DHSES worked closely during FEMA's review of the application for cost effectiveness and feasibility. As we were unable to prove cost effectiveness, we believe an appeal would prove challenging; however, should you choose to appeal, please remember that we cannot re-package what was previously submitted but must submit new information necessary to support meeting program eligibility criteria.

We regret that we could not provide you with a more positive response to your application. We would like to thank you for your interest in our mitigation programs. Please remember that State DHSES, not FEMA, is your point of contact for all questions relating to federal mitigation programs and this denial. Should you have any questions or need further assistance, please contact our office at 518-292-2304.

Sincerely,

Richard Lord

Richard M. Lord
Chief of Mitigation Programs
& Agency Preservation Officer

Cc: John Mastronardi, Town Engineer (via email)
Natalie Wright, Governor's Office of Storm Recovery (via email)

Attachments:

1A. FEMA Denial Letter
1. Project Area FIRMette
2. 151008 Property Info to FEMA
3. BCA Runs
4. Broome County NY Rising CR Plan Excerpt
5. 500yr Elevation
6. Cubic yard price estimate
7. RIs based on discharge rates

U.S. Department of Homeland Security
Federal Emergency Management Agency
FEMA Region II
26 Federal Plaza
Suite 1307
New York, NY 10278

FEMA

August 4, 2016

Commissioner John P. Melville
Governor's Authorized Representative
New York State Division of Homeland Security and Emergency Services
1220 Washington Avenue
Building 7A, Suite 710
Albany, New York 12242

Attn: Richard Lord

Re: FEMA-4085-DR-NY/HMGP Project #4085-0078 (Project)
Town of Conklin / FIPS#: 007-17772-00 (Subapplicant)
Powers Avenue Evacuation Route
HMGP Project Grant Denial

Dear Commissioner Melville:

The Federal Emergency Management Agency (FEMA) Region II, Mitigation Division, Sandy Grants Branch has completed its review of your office's proposal and Application for the above referenced Hazard Mitigation Grant Program (HMGP) Project. This Application proposes to design and construct a new evacuation route for residents living along NYS Route 7 between Shaw Road and Powers Road in the Town of Conklin, Broome County, NY. The proposed evacuation route is intended to provide for the safe passage of residents in the event there is a flood that overtops Conklin Road (NYS Route 7) and the residents are unable to flee to the north or south on Conklin Road. We have concluded that this Project does not meet the elements of an eligible activity and for the reasons set forth below the funding of this Project is denied.

FEMA Region II worked closely with the New York Department of Homeland Security and Emergency Services (DHSES, Grantee or Applicant) staff during our review of the Application. In accordance with the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended, 42 U.S.C. §5170c (Stafford Act § 404), FEMA must determine that projects are "cost-effective" and "substantially reduce the risk of future damage, hardship, loss, or suffering in any area affected by a major disaster." This Project does not meet those requirements, as explained with specificity in the following sections.

I. Floodplain Requirements

Design Elevation
In accordance with Title 44, Code of Federal Regulations (44 CFR) Part 9, any federally funded project that is considered a critical action and is located in a designated floodplain must be designed to the 500yr flood elevation.[1] The Project's purpose of providing a viable evacuation route during a flood event fits the definition of a critical action, defined as, "an action in which even a slight chance of flooding is too great" (44 CFR §9.4 Definitions). Because the proposed evacuation route is located within a Special Flood Hazard Area (SFHA) (see Attachment 1) and fits the definition of a critical action, it is required to be designed to the 500yr flood elevation.

Floodplain Management Criteria
For a community to maintain compliance with FEMA's National Flood Insurance Program (NFIP), the community is required to review any proposed new development (including paving and fill) located in a flood-prone area to assure that the proposal is consistent with the need to minimize flood damage, as stipulated by 44 CFR §60.3(a)(4). Given the Project's proposed location within a floodplain and the requirement to design to the 500yr flood elevation, the evacuation route will likely cause the displacement of floodwater and therefore likely affect the flood profile of the designated floodplain. Because FEMA did not receive the required hydrologic and hydraulic analyses, it is assumed that these studies still need to be performed. If the results of these studies determine that that the proposed Project will alter the nature of the floodplain, and the community chooses to proceed with the Project, the community will need to apply for a Conditional Letter of Map Revision (CLOMR), as established under the provisions of 44 CFR §§60.3[2] and 65.12.

Adhering to the above stated requirements of: designing to the 500yr elevation, performing the necessary hydrologic and hydraulic analyses and, (potentially) applying for a CLOMR, would cause an increase in the project's total costs and delays in implementation. These factors alone do not cause the project to be denied, however, when these increased costs are incorporated into the benefit-cost analysis (as described below, in Part III) the Project is no longer cost-effective and is therefore ineligible for funding.

II. Environmental and Historical Preservation

The proposed Project scope will take place in a delineated floodplain area and impact a small section of wetland. 44 CFR §9.5(d)(4) indicates the minimum threshold in order for an activity to have no adverse effect on floodplain and/or wetland resources; they are:

- FEMA estimated cost is less than $100,000
- Not in a V flood zone
- No change in existing structure footprint (if applicable)
- Not substantially damaged (i.e. less than 50% of recovery cost)
- Has not been damaged before (repetitive loss)

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[1] 44 CFR §9 can be viewed online at: https://www.law.cornell.edu/cfr/text/44/part-9
[2] https://www.gpo.gov/fdsys/pkg/CFR-2011-title44-vol1/pdf/CFR-2011-title44-vol1-sec60-3.pdf

- Is not a critical action

Considering the project is new construction and a critical action, it is over this threshold and is likely to affect wetland and floodplain resources protected under Executive Orders 11988 and 11990. Accordingly, the Project is likely to require U.S. Army Corps of Engineers (USACE) and NYS Department of Environmental Conservation (DEC) Protection of Water and Freshwater Wetlands permits in order to proceed. These regulatory agencies would impose requirements on the Project to mitigate damage to natural resources after consultation with all regulating government agencies. These regulatory agencies would be unlikely to deem the Project ineligible, outright. However, it is worth noting these Project conditions would add time and possibly increase Project costs.

Other environmental concerns include the potential for archeological resources; the scope of work impacts undisturbed soil and is within one mile of known historic and pre-historic sites. This would require FEMA consultation with the State Historic Preservation Office (SHPO). This has the potential for additional costs, such as the recommendation or requirement of a Phase Ia archaeological study prior to construction.

It should be noted this section only covers federal requirements. State and local requirements, such as the State Environmental Quality Review (SEQR) process, would also have to be considered.

III. Technical Feasibility and Cost Effectiveness

44 C.F.R §206.434(c) sets forth minimum HMGP project criteria and provides that, for a project to be cost-effective and substantially reduce the risk of future damage, hardship, loss, or suffering resulting from a major disaster, the Grantee must document that the project:

(i) Addresses a problem that has been repetitive, or a problem that poses a significant risk to public health and safety if left unsolved,

(ii) Will not cost more than the anticipated value of the reduction in both direct damages and subsequent negative impacts to the area if future disasters were to occur,

(iii) Has been determined to be the most practical, effective, and environmentally sound alternative after consideration of a range of options,

(iv) Contributes, to the extent practicable, to a long-term solution to the problem it is intended to address, and

(v) Considers long-term changes to the areas and entities it protects, and has manageable future maintenance and modification requirements

(vi)

Technical Feasibility
Based on information in the Project application and subsequent discussions between FEMA and the Applicant, FEMA has determined that the proposed Project will not successfully mitigate the identified hazard and is therefore not technically feasible and does not meet requirement (iii), as stated above. Supporting documentation provided by the Applicant to FEMA on October 8, 2015 states:

> It is very important to note that the proposed starting point of this road is in a SFHA, the start of the road is at the lowest section of Conklin Rd for a mile either way. This would likely result in the road being under water during a flooding event (See Attachment 2).

Given its susceptibility to flooding, the proposed evacuation route is not the most practical and effective mitigation strategy and does not meet the requirements of §206.434(c)(iii).

Cost Effectiveness
With respect to the cost-effectiveness requirement and (ii) above, FEMA's *Hazard Mitigation Assistance Unified Guidance (HMA 2010)* at *Part III Section D.3 Cost Effectiveness* clarifies that:

> Mitigation projects must be cost effective to be eligible for HMA funding as demonstrated by a FEMA validated [Benefit Cost Analysis] BCA. A BCA evaluates the future benefits (projected losses avoided) of the project in relation to the project costs. This evaluation results in a Benefit Cost Ratio (BCR). If the future benefits are equal to or greater than the cost, then the BCR is equal to or greater than 1.0 and a proposed activity is considered cost effective. If the benefits are less than the cost, then the BCR is less than 1.0 and the proposed activity is not considered cost effective. Only project subapplications with a BCR of 1.0 or greater will be considered for HMA funding.

For the proposed Project, FEMA reviewed the Applicant's BCA and concluded, for the reasons set forth below, that the Project does not meet the minimum statutory or regulatory criteria. The data submitted within the Application was analyzed using standard FEMA software to generate a BCR of 1.14 with the total project cost of $645,628 offset by $736,035 worth of proposed benefits. FEMA has reviewed the submitted data and has found that the total Project costs have been underestimated and that the Project's anticipated benefits have been miscalculated. When project costs and anticipated benefits are adjusted, the project's BCR is 0.11 and the Project does not meet the cost-effectiveness requirement (See Attachment 3).

a) Estimated Higher Costs

After reviewing the application's cost estimate and supporting documentation, FEMA has determined that the total cost of the Project has been underestimated and that the proposed

Project's actual total cost would be substantially higher, thereby reducing the Project's overall cost effectiveness.

The BCA submitted by the Applicant estimated that the proposed mitigation benefits provided by the Project would be $90,407 greater than the estimated total Project cost. Therefore, any cost increase that exceeds this amount will render the Project not cost effective.

The proposed Project (an evacuation road) is a critical action and is located in the SFHA. Therefore, the Project is required to be designed to provide protection up to the 500-year flood hazard event (See Floodplain Requirements, above).

According to the FEMA Flood Insurance Rate Map (FIRM) and the corresponding Flood Insurance Study (FIS), the 500-yr flood elevation at this location is 860ft, which is 6ft higher than the ground elevation at this location of 854ft (see Attachment 5). The design presented in the document, 'C-1-Preliminary-Site-Plan' does not indicate the proposed height of the road, or any information in regards to its structural integrity. This makes it difficult to determine whether the cost estimate accurately reflects the costs required to construct the route 6ft above the floodplain.

To assess these potential additional costs, FEMA recalculated the budget item, 'Embankment In-Place,' using the same cost per cubic yard ($15/cu yd) and accounting for the additional fill that would be needed for the road to reach a height of 6ft (see Attachment 6). This re-calculation for just one budget item results in a project cost increase of $93,750, which is $3,343 higher than the estimated benefits.

FEMA estimates that designing the project to meet the 500yr flood elevation requirement would cause an increase in the total Project costs to the effect that the costs would outweigh the potential benefits, and the Project would no longer meet the cost-effectiveness requirement.

Furthermore, the supporting documentation for the application indicates a higher project cost than the application identifies as the project cost. Including annual maintenance costs, the application estimates a total Project cost of $645,628. This cost estimate is substantially lower than the estimate that was provided in the application's supporting documentation in which the project was estimated to cost $1.1 million (see Attachment 4).

b) Proposed Mitigation Benefits

The Application's BCA was run using a Damage-Frequency Assessment module in the FEMA standard BCA software. This module is used to analyze projects that have limited data. When data is available for three or fewer historical damage events, the recorded damage must be assigned a recurrence interval (RI), which is an assessment of the probability of similar damages happening again.

The application's BCA included two historical damage events. The BCA analyst estimated the 2006 event as having a 20 year recurrence interval and the 2011 event as having a 70 year recurrence interval. These estimates were derived using historic precipitation data from the weather station at the Greater Binghamton Airport. Although precipitation data can be used to estimate flood recurrence intervals for projects in which the primary hazard is rainfall (for example, landlocked areas with poor drainage), this method of analysis is not appropriate in this case in which the source of flooding is riverine, here the Susquehanna River, because it does not account for hydrology and hydraulics of the associated watershed.

To assess the frequency of flooding for a river, discharge data (cubic feet per second) should be used to calculate flood recurrence intervals. To estimate recurrence intervals, FEMA analyzed peak streamflow estimates from the historical hazard events using a logarithmic regression based on USGS streamflow statistics for the Susquehanna River (See Attachment 7). Using this method, FEMA calculated the 2006 event as having a 167-year recurrence interval and the 2011 event as having a 105-year recurrence interval.

With all other original inputs (including the lower-than-anticipated cost estimate) remaining constant, substituting these recurrence intervals based on discharge rates into the Applicant's BCA causes the BCR to drop significantly from 1.14 to 0.18. When the post-mitigation recurrence interval is adjusted to reflect the required level of protection to the 500-yr flood elevation the BCR rises to 0.22. To account for the expected increased project costs as described throughout this letter, FEMA relied on the NY Rising Community Reconstruction Plan cost estimate that was submitted with the original application. Adjusting the BCA to account for these additional costs results in a BCR of 0.11, demonstrating that the proposed project will not be cost-effective (see Attachment 3).

In conclusion, FEMA has determined that the Application does not satisfy the cost-effectiveness requirement. FEMA has reviewed each of the items above with DSHES in a phone call on June 9, 2016 and the Grantee confirmed these findings. The Grantee acknowledged FEMA's determination that the Project is not cost effective in terms of disaster mitigation as required by §404 of the Stafford Act.

Please inform the Subapplicant of this determination, as well as the Subapplicant's right to file an appeal, in accordance with 44 C.F.R. 206.440.

Sincerely,

MICHAEL F MORIARTY

Digitally signed by MICHAEL F MORIARTY
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Michael F. Moriarty
Federal Insurance & Mitigation Director
FEMA Region II

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