

May 12, 2009

Federal Emergency Management Agency
Attn: Mr. Michael J. Dabney, Director
Mitigation Division
DHS/FEMA Region II
26 Federal Plaza, 13th floor
New York, NY 10278-0002

Dear Mr. Dabney:

On behalf of the Town of Pendleton, CRA Infrastructure and Engineering, Inc. (CRA), as Engineer for the Town, completed a review of the Preliminary Flood Insurance Study (FIS) report and Flood Insurance Rate Maps (FIRM). The results of the review revealed technical discrepancies in the determination of the floodplain delineation for affected properties along Tonawanda Creek, Bear Ridge Road, and Aiken Road. In accordance with the regulatory procedures for filing appeals and protests, the Town herein submits this letter and supporting technical documentation for review and consideration in an appeal to the modification of the FIRM posted for the Town of Pendleton. The following items summarize the request:

REQUESTED ACTION

- 1) Revise proposed flood map counters and delineation to include the 2009 spot elevations. Ground shots were obtained from CRA and provide greater detail and reflect current topographic conditions of impacted areas along Aiken Road, Bear Ridge Road, and Tonawanda Creek (vertical datum NAVD 88).
- 2) The updated delineation of the floodplain for Tonawanda Creek used the 1989 ACOE HEC-2 model. The Town requests that FEMA use the most current hydraulic modeling software (HEC-RAS) with the updated elevation data in determining revised Base Flood Elevations (BFEs) for Tonawanda Creek from the confluence of the Niagara River to Station 72200 (Transit Road Rte. 78). Based upon our evaluation, the BFE for the stream reach between Station 31000 and 60000 is at least 1.5 feet greater than reasonably can be predicted.
- 3) The old railroad line is incorrectly identified as Bear Ridge Road on Panel 360509.

DOCUMENTATION INCLUDED AS AN ATTACHMENT IN SUPPORT OF THE REQUEST

- 1) Detailed topographic survey along Tonawanda Creek Road between Bear Ridge and Pendale (Tributary to Tonawanda Creek).
- 2) Detailed topographic survey along Aiken Road (tributary to Bull Creek).
- 3) Tonawanda Creek Plan view (sections A through I).
- 4) Revised ACOE 1989 study cross sections.
- 5) Figure 1 – Flood Plain Impact Map (showing location of Pendleton Guard Gate).
- 6) One electronic copy (CD) of the above data and mapping for your use.

TECHNICAL REVIEW

The following section summarizes the discrepancies, inconsistencies, and technical issues revealed during the review and evaluation associated with the adoption of the proposed FIRM and FIS for the Town of Pendleton. The Town appeal and request is focused on the area along Tonawanda Creek between Bear Ridge Road and the Erie Canal up to the Pendleton Guard Gate (Tonawanda Creek Stations 31000 to 60000).

The current FIRM, dated 1982, was based upon the 1979 FIS using HEC-1 model methodology completed by the ACOE. The ACOE then completed an updated Flood study in 1989 using HEC-2 that, in general, presented a change and an increase in flood elevation of approximately 3 feet for this stream reach. The FIRM for Pendleton was not updated at that time and, to the best of our knowledge, the Town did not have an opportunity to review or comment on the Amherst study.

The proposed FIRM combines the cross sections and computed BFEs from the 1989 HEC-2 model with the detailed flood study of Town Ditch 2 and the updated elevation model to create a modified delineation as part of the Map Modernization Program. The result is significant shallow flooding of parcels along Tonawanda Creek, which is a direct result of backwater beginning at the confluence with Town ditch 2 at Bear Ridge Road.

We contest the decision to complete the updated detailed studies of the Tonawanda Creek tributaries of Bull Creek and Town Ditch 2 using current modeling methodologies while applying a 20 year old model to establish an updated FIS and FIRM for this section of a major stream - Tonawanda Creek. The discrepancies in the use of the old model and methodology is outlined below:

- 1) The hydraulic model that was run in 1989 was not a continuous model of Tonawanda Creek and does not account for the flow through the entire length of Tonawanda Creek. There are several places that the water level is not modeled, but calculated by approximate methods. The stations that were not modeled are from 10750 to 18050, and are just downstream of the area that has a higher floodplain boundary. This approximation results in an assumed backwater effect on Tonawanda Creek and Town Ditch 2.
- 2) Per the FEMA Floodplain Modeling Manual dated April 2002, the modeling of Tonawanda Creek under HEC-2 should have been updated using HEC-RAS. According to this manual, FEMA has adopted guidance for restudies and encourages the use of HEC-RAS to revise floodplains with effective HEC-2 analyses.
- 3) The cross sections for the 1989 model do not extend to the limit of the 2008 proposed floodplain boundary. The cross sections in the model stay within the channel and do not take into account the effects of flows outside the channel embankments and capacity of flood storage beyond the modeled cross sections. Therefore, the cross sections should be modified to include the area within the proposed floodplain to account for storage and any backwater effect from spilling over the bank of the channel. The floodplain cross sections have been modified and are included as an attachment to this letter. The modified sections utilize the current LiDAR data to cut new sections to the limits of the proposed floodplain. The cross sections provided also present the ACOE sections, but need to be lowered by approximately 0.5 feet to account for the change in vertical datum. The modified cross sections do not extend into Amherst (Erie County) as the data provided to CRA included coverage for a portion of the needed area.
- 4) The model does not consider that the BFE, as proposed, will be approximately 1 foot greater in height than the top of the Pendleton Guard Gate. The Pendleton Guard Gate is located on the Erie Canal north of Fisk Road in the Town of Pendleton (see Figure 1). The proposed BFE for the Erie Canal near the Gate is 579.75 while, according to the NYS Canal Authority, the top of the Pendleton Guard Gate is 578.92 NGVD 29 (or 578.44 -NAVD88). The Gate is located at Lat 43-06-57.30, Long 78-44-12.12. This would result in overtopping and directing flood waters to the Erie Canal Locks and, ultimately, to the City of Lockport, which has an elevation of 570.00. The result would be a relief point as a weir structure and, therefore, should be included in a revised updated model of Tonawanda Creek. The implications and effects of modeling this feature would result in a significantly lower BFE and should not be discounted as minor or insignificant.

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On behalf of the Town Board and the residents of the Town of Pendleton, I would like to thank you, in advance, for your consideration of our request. Please direct all technical questions and inquiries to our Town Engineer, David M. Britton, P.E., of CRA at (716) 856-2142.

Sincerely,

James Riester, Town Supervisor
Town of Pendleton, New York

cc: Town Board
David Gerber, Floodplain Administer
Terry Pienta, Town Clerk
William S. Nechamen, Floodplain Management Section, Bureau Flood Protection
David M. Britton, P.E, CRA