



FEMA

IN REPLY REFER TO: APPEAL RES

April 6, 2016

The Honorable Pat Voveris
Mayor, Town of South Bethany
402 Evergreen Road
South Bethany, Delaware 19930

Community: Town of South Bethany,
Sussex County,
Delaware
Community No.: 100051

Dear Mayor Voveris:

This letter is in response to a letter dated January 20, 2016, from your community regarding the Preliminary Flood Insurance Rate Map (FIRM) and Flood Insurance Study (FIS) report for the Town of South Bethany, Sussex County, Delaware dated May 18, 2015. The January 20, 2016, cover letter from your community enclosed a letter dated January 19, 2016, from Edward Bintz, Property Owner, Town of South Bethany. Mr. Bintz submitted a letter and exhibits concerning the floodplain boundary for the Atlantic Ocean for the East Side of Ocean Drive in the Town of South Bethany as shown on the May 18, 2015, Preliminary FIRM panel 1005C0518K. Please note that the request is considered an appeal because it satisfied the data requirements defined in Title 44, Chapter I, Part 67 of the Code of Federal Regulations (44 CFR Part 67), and was submitted during the 90-day appeal period for the aforementioned Preliminary FIRM and FIS report.

The following scientific and/or technical data were submitted in support of this request:

- A letter with exhibits from Mr. Bintz stating his case for an appeal; and
- Coastal analysis and mapping data prepared by the Department of Homeland Security's Federal Emergency Management Agency (FEMA) for the December 2013 Preliminary FIRM and FIS for the Town of South Bethany.

The U.S. Department of Homeland Security's Federal Emergency Management Agency (FEMA) received all data necessary to resolve this appeal by January 21, 2016. The provided letter asserts that the methodology used to generate the Base (1-percent annual chance) Flood Elevations (BFEs) for the homes east of Ocean Drive as shown on the 2015 Preliminary FIRM is scientifically and technically incorrect. The letter further asserts that the original coastal analysis performed by FEMA as shown on the December 2013 Preliminary FIRM is the scientifically and technically correct analysis. To support this assertion, the letter claims that 1) the scientific and technical basis for the coastal analysis including the dune erosion methodology is unclear and lacks sufficient documentation. The report asserts that 2) the methods and assumptions for the dune erosion analysis in the preliminary study are incorrect and the dunes should be treated as a removal case, and the determination of the toe of the dunes is incorrect. The report also asserts that 3) the new data that

FEMA used to justify using non-standard methodologies for the Town of South Bethany is not sufficient.

We have examined the letter, and the FEMA 2013 preliminary coastal analysis and mapping of this area provided by the Town and Mr. Bintz as part of the appeal. We would like to address the 3 assertions listed above.

- 1) The appellant stated in the appeal that FEMA's standard dune removal methodology found in the FEMA guidelines should have been applied in this area and the 2015 preliminary study used a dune retreat erosion methodology. FEMA's Atlantic Ocean and Gulf of Mexico Coastal Guidelines Update (February 2007) states that:

At many sites, historical evidence may be available regarding the extent of flooding, erosion, and damage in an extreme event comparable to the local 1-percent-annual-chance flood. In these instances, the erosion treatment giving results more consistent with historical records must be selected as appropriate. That choice may be relatively clear-cut given potential differences in expected erosion and inland flood penetration for duneface retreat versus dune removal. Where available historical evidence is not definitive, the decision between retreat and removal on a given transect should be based solely on size of the frontal dune reservoir. Present procedures for erosion assessment are highly simplified, but provide an unbiased estimation and a level of detail appropriate to coastal flood map projects.

The erosion methodology used for the preliminary analysis was a non-standard methodology developed in coordination with State and local officials and based on historic data that indicated that the standard erosion methodologies would not sufficiently characterize the hazard in this area.

Based on FEMA guidelines, a retreat profile consists of three planar slopes: the uppermost is a retreated dune face slope of a 1:1, joining an extensive middle slope of 1:40, which is terminated by a brief segment with a slope of 1:12.5 at the limit to storm deposition. Part of the dune is un-eroded and the eroded sand is deposited seaward of the dune toe and remains part of the profile. A standard removal case will remove the sand from the dune toe with a slope of 1:50 and will not deposit the eroded sand. The erosion analysis applied in the 2015 preliminary study completely removed the dune but retained a steep slope of approximately 1:3 at Ocean Drive to reflect the roadway's non-erodible materials. This non-standard erosion methodology was developed based on review of photographs depicting erosion damage along Ocean Drive to the ocean front properties from historic storm events, National Flood Insurance Program (NFIP) Repetitive Loss data, and discussions with State and Local officials regarding firsthand experience of the beach erosion at South Bethany. The methodology used for the preliminary analysis is more representative of historic impacts; therefore, is more appropriate for use in this area.

- 2) Some aspects of the second assertion are addressed in the response above. Regarding the dune toe, the elevation of dune toe was lowered to approximately 1.1 feet North American Vertical Datum of 1988 (NAVD 88) to simulate the damaged beach after major storms

described by local officials, which was also supported by the post-storm profile survey data collected by the USACE.

- 3) The submitted data, such as the USACE beach elevation profiles surveyed before and after major storms and historic photos, indicate that the wave energy around the South Bethany coastline during major storms is high and causes much more severe erosion than that produced with FEMA standard methodology. The NFIP Repetitive Loss data indicates the flood hazard in the area was often greater than 12 feet (NAVD 88), which was the BFE for the area in the effective study, and a BFE of 10 feet (NAVD 88) that resulted from the 2013 preliminary study would further underestimate the flood hazard. Lowering the BFE in this area would not reflect the known flood hazard risk here.

FEMA's technical coastal methodologies are generalized to produce the most accurate results possible for large scale studies, and FEMA encourages more tailored engineering analyses in specific areas with unique conditions. FEMA relies on State and local officials to provide the first hand information to refine the Flood Insurance Study when unique conditions exist, since they have extensive knowledge of the local historic conditions. FEMA has held a series of outreach meetings during the course of the Town of South Bethany flood study for local officials to provide information. We appreciate the submitted information from the State and local officials of South Bethany.

We have resolved this appeal in accordance with the requirements of 44 CFR Part 67. We have reviewed the submitted data and determined that the Special Flood Hazard Area boundary for the Atlantic Ocean is correct as shown on the Preliminary FIRM and in the Preliminary FIS report, and that no changes are warranted at this time. Please submit any comments regarding this appeal resolution within 30 days of the date of this letter to the following address:

FEMA Region III
Mitigation Division
One Independence Mall, 6th floor
615 Chestnut Street
Philadelphia, PA 19106-4404
Attention: Robert Pierson, CFM

If you feel that the technical issues originally raised have not been adequately addressed by this resolution letter and that an acceptable resolution will not be feasible through the submittal of additional comments as outlined above, please note that FEMA makes Scientific Resolution Panels (SRPs) available to support the appeal resolution process. SRPs are independent panels of experts in hydrology, hydraulics, and other pertinent sciences established to review conflicting scientific and technical data and provide recommendations for resolution. An SRP is an option after FEMA and a local community have been engaged in a collaborative consultation process without a mutually acceptable resolution.

Your community may contact me at (215) 931-5650 for additional information on the specific eligibility requirements for the SRP or refer to the enclosed SRP Fact Sheet. To request that an SRP

review your scientific or technical data, your community must complete the enclosed SRP Request Form and submit it to the address above within 30 days of the date of this letter.

If we do not receive any comments or the completed SRP Request Form from your community during the 30-day review period associated with this resolution, we will finalize the FIRM and FIS report by issuing a Letter of Final Determination (LFD). The LFD will explain the adoption/compliance process and will state the date when the FIRM and FIS report will become effective.

We appreciate your community's comments and commitment to having the most accurate flood hazard information available reflected on the FIRM and in the FIS report. If you have any questions regarding this matter, please contact me by telephone at (215) 931-5650 or by e-mail at robert.pierson@fema.dhs.gov.

Sincerely,



Robert Pierson
Project Engineer
FEMA Region III

Enclosures:
SRP Fact Sheet
SRP Request Form

cc: Joe Hinks, Code Enforcement Constable, Town of South Bethany
Edward Bintz, Property Owner, Town of South Bethany
Michael Powell, CFM, State NFIP Coordinator, Delaware Department of Natural Resources
Greg Williams, CFM, State NFIP Coordinator, Delaware Department of Natural Resources