

DEPARTMENT OF HOMELAND SECURITY  
Federal Emergency Management Agency  
**COASTAL ANALYSIS FORM (FORM 4)**

OMB Control Number: 1660-0016  
Expiration: 1/31/2024

**PAPERWORK BURDEN DISCLOSURE NOTICE**

Public reporting burden for this form is estimated to average 1 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing, reviewing, and submitting the form. You are not required to respond to this collection of information unless it displays a valid OMB control number. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden to: Information Collections Management, Department of Homeland Security, Federal Emergency Management Agency, 500 C Street, SW, Washington, DC 20472 , Paperwork Reduction Project (1660-0016). Submission of the form is required to obtain or retain benefits under the National Flood Insurance Program. **Please do not send your completed survey to the above address.**

**PRIVACY ACT STATEMENT**

**AUTHORITY:** The National Flood Insurance Act of 1968, Public Law 90-448, as amended by the Flood Disaster Protection Act of 1973, Public Law 93-234.

**PRINCIPAL PURPOSE(S):** This information is being collected for the purpose of determining an applicant's eligibility to request changes to National Flood Insurance Program (NFIP) Flood Insurance Rate Maps (FIRM).

**ROUTINE USE(S):** The information on this form may be disclosed as generally permitted under 5 U.S.C § 552a(b) of the Privacy Act of 1974, as amended. This includes using this information as necessary and authorized by the routine uses published in DHS/FEMA/NFIP/LOMA-1 National Flood Insurance Program (NFIP); Letter of Map Amendment (LOMA) February 15, 2006, 71 FR 7990.

**DISCLOSURE:** The disclosure of information on this form is voluntary; however, failure to provide the information requested may delay or prevent FEMA from processing a determination regarding a requested change to a (NFIP) Flood Insurance Rate Maps (FIRM).

Flooding Source: \_\_\_\_\_

**Note:** Fill out one form for each flooding source studied

**A. COASTLINE TO BE REVISED**

Describe limits of study area: \_\_\_\_\_

**B. EFFECTIVE FIS**

The area being revised in the effective FIS was studied by detailed methods using (check all that apply):

- |  |   |
|--|---|
| <input type="checkbox"/> Storm surge modeling            | <input type="checkbox"/> Wave setup computations                    |
| <input type="checkbox"/> Wave height computations        | <input type="checkbox"/> Wave runup computations                    |
| <input type="checkbox"/> Wave overtopping computations   | <input type="checkbox"/> Dune erosion computations                  |
| <input type="checkbox"/> Primary Frontal Dune Assessment | <input type="checkbox"/> N/A (area not studied by detailed methods) |

**C. REVISED ANALYSIS**

1. Number of transects in revised analysis: \_\_\_\_\_

2. Information used to prepare the revision (check all that apply):

- |   |  |
|---|--|
| <input type="checkbox"/> Wave setup analysis (complete Items 3, 4, and 5 below)       | <input type="checkbox"/> Wave overtopping assessment (complete Items 4 and 5)                                      |
| <input type="checkbox"/> Stillwater elevation determinations (complete Items 3)       | <input type="checkbox"/> More detailed topographic information (complete Section E)                                |
| <input type="checkbox"/> Erosion considerations (complete Items 4)                    | <input type="checkbox"/> Accredited shore protection structure (attach completed Coastal Structures Form - Form 5) |
| <input type="checkbox"/> Non-accredited shore protection structure (complete Items 4) |  |
| <input type="checkbox"/> Wave runup analysis (complete Items 4 and 5)                 | <input type="checkbox"/> Primary Frontal Dune Assessment (complete Items 5)  |
| <input type="checkbox"/> Wave height analysis (complete Items 4 and 5)                | <input type="checkbox"/> Other, attach basis of request with explanation   |

3. Stillwater Elevation Determination

a. How were stillwater elevations determined?

- Effective FIS Report Date of FIS Report \_\_\_\_\_ Transect Number \_\_\_\_\_
- Gage analysis (If revised gage analysis was used, provide copies of gage data and revised analysis.)
- Storm surge analysis
- Other (Describe): \_\_\_\_\_

b. Specify what datum was used in the calculations: \_\_\_\_\_

If not the FIS datum, have the calculations been adjusted to the FIS datum?  Yes  No Conversion Factor \_\_\_\_\_

**C. REVISED ANALYSIS (continued)**

c. Was wave setup included in wave height analysis and removed for wave runup analyses?:  Yes  No

d. Was an overtopping analysis performed for any coastal shore protection structures or natural land forms that may be overtopped?:  Yes  No

Attach an explanation of the methodology utilized and describe in detail the results of the analysis.

e. Is wave setup included?  Yes  No

Source:  Effective FIS Report  New Analysis

If wave setup was computed, attach a description of methodology used.

**4. Revised Analysis (i.e., erosion, wave height, wave runup, primary frontal dune, and wave overtopping)**

If DHS-FEMA procedures were utilized to perform the revision, attach a detailed description of differences between the current and the revised analyses, and why the revised analysis should replace the current analysis.

If DHS-FEMA procedures were not utilized to perform the revision, provide full documentation on methodology and/or models used; including operational program, detailed differences between methodology and/or models utilized and DHS-FEMA's methodology and/or models. Also, attach an explanation of why new methodology and/or models should replace current methodology and/or models.

If revision reflects more detailed topographic information and fill has been/will be placed in a V Zone, and is not protected from erosion by an accredited shore protection structure, provide a detailed description of how the fill has been treated in the revised analysis.

**5. Wave Runup, Wave Height, And Wave Overtopping Analysis**

Wave height analyses along a transect are greatly affected by starting wave conditions that propagate inland. Wave runup and overtopping analyses are typically considered when the stillwater elevation including wave setup is less than the crest of shore protection structures or natural land forms.

a. Was an analysis performed to determine starting wave height and period for input into WHAFIS?

If Yes, attach an explanation of the method utilized. If No, explain why these analyses were not performed.  Yes  No

b. Was wave setup included in the reference water level used to calculate the dune reservoir volume?  Yes  No

c. Was wave setup included in wave height analysis and removed for wave runup analyses?  Yes  No

d. Was an overtopping analysis performed for any coastal shore protection structures or natural land forms that may be overtopped?  
 Yes  No

Attach an explanation of the methodology utilized and describe in detail the results of the analysis.

**D. RESULTS**

1. Stillwater storm surge elevation: \_\_\_\_\_ feet \_\_\_\_\_ Datum

2. Wave setup: \_\_\_\_\_ feet

3. Starting deep-water significant wave condition: height: \_\_\_\_\_  
period: \_\_\_\_\_

4. Maximum wave height elevation: \_\_\_\_\_ feet

5. Wave runup elevation: \_\_\_\_\_ feet

6. Estimated amount of overtopping: \_\_\_\_\_ cfs/feet

7. Has this revision changed the Limit Moderate Wave Action (LiMWA)?  Yes  No  N/A

8. The areas designated as coastal high hazard areas (Vzones) have:  Yes  No  N/A

Attach a description where they have increased and/or decreased.

9. As a result of the revised analyses, the V zone location has shifted a maximum of \_\_\_\_\_ feet seaward and \_\_\_\_\_ feet landward of its existing position.

10. Does the revision reflect the location of the primary frontal dune?  
 Yes  No

11. The Base Flood Elevations have:

Increased  Decreased

a. What was the greatest increase? \_\_\_\_\_ feet

b. What was the greatest decrease? \_\_\_\_\_ feet

12. The special flood hazard area has:

Increased  Decreased  Both

Attach a description where it has increased or decreased.

**E. MAPPING REQUIREMENTS**

A certified topographic map must be submitted showing the following information (where applicable): effective, existing conditions, and proposed conditions 1%-annual-chance floodplain boundaries, revised shoreline due to either erosion or accretion, location and alignment of all transects, correct location and alignment of any structures, current community easements and boundaries, boundary of the requester's property, certification of a professional engineer registered in the subject State, location and description of reference marks, and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the existing or proposed conditions floodplain boundaries to be shown on the revised FIRM must tie-in with the effective floodplain boundaries. Please attach a copy of the current FIRM annotated to show the revised 1%-annual-chance floodplain boundaries that tie-in with effective 1%-annual-chance floodplain boundaries along the entire extent of the area of revision.