FEMA

Town of South Bethany Open House

June 12, 2015

RiskMAP
Increasing Resilience Together

A JV of Dewberry, URS, and ESP
RAMPP
Risk Assessment, Mapping, and Planning Partners

Introductions

- **FEMA, Region III Representatives:**
  - Jon Janowicz, Risk Analysis Branch Chief, (jon.janowicz@ fema.dhs.gov)
  - Richard Sobota, Senior Insurance Specialist (richard.sobota@fema.dhs.gov)
  - Dave Bollinger, Mitigation Outreach Coordinator (david.bollinger@fema.dhs.gov)
  - Peter Herrick, External Affairs Specialist (peter.herrickjr@fema.dhs.gov)
  - Kelsey Smolen, Delaware Planning Specialist (kelsey.smolen@fema.dhs.gov)

Introductions

- **Jane M. Meconi,** Michael Baker, Inc, (jane.meconi@mbakerintl.com)
- **Delaware Department of Natural Resources and Environmental Control**
  - Michael Powell, Delaware NFIP Coordinator (michael.Powell@state.de.us)
- **AECOM - RAMPP (FEMA Mapping Contractor):**
  - Christine Worley, Senior Project Manager (christine.worley@aecom.com)
  - Heather Zhao, Project Manager (heather.zhao@aecom.com)
- **U.S. Army Corps of Engineers:**
  - Jason Miller, Chief, Flood Plain Management Services Branch (jason.f.miller@usace.army.mil)

Meeting Ground Rules

- ***Meeting Ground Rules:***
  - *Put cell phones away or on vibrate*
  - *Stay on point and agenda*
  - *One person speaking at a time, avoid interrupting others*
  - *Critique ideas not people*
  - *Honest debate encouraged*
  - *Respect others views*
  - *Let everyone contribute equally; avoid dominating the discussion*

Additional Items to Note

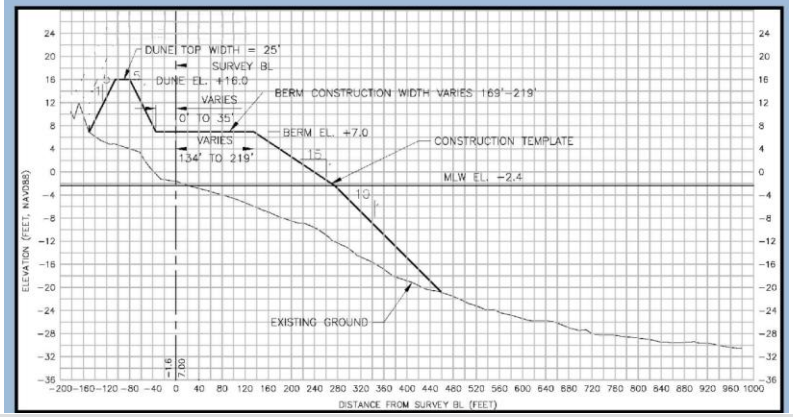
- **Questions & Answers after each presentation:**
  - Specific property/personal information questions cannot be answered during group meeting due to privacy statutes.
  - Specific questions can be answered during station portion after this general meeting.
- **Mapping requires FEMA adherence to Congressional Statutory Regulation:**
  - Map changes occur if –
    - Scientific proof submitted shows that FEMA **applied** data in error.
    - **Superior data** or methods are submitted.
- **Reminder – The comments made this evening are not a formal appeal of the Flood Insurance Study.**


Questions

Transition

- Beachfill Project Presentation by Jason Miller

Delaware Coast Beachfill Project



Brief Description: Bethany/South Bethany project extends along approximately 2 miles of the Atlantic Coast in Sussex County, DE. The project design consists of a sand fill beach and dune project. The project includes a 150-foot wide berm with an elevation of +7.0 feet NAVD, and a dune with an elevation of +16.0 feet NAVD. The proposed nourishment cycle is three years with annual project monitoring.

Date of Project Agreement: July 2006

Initial Construction: June 2008

Repairs from Nor'Ida (November 2009) & Periodic Nourishment Completed Concurrently in October 2011

Repairs from Sandy(October 2012) Completed in September 2013

South Bethany Project Background

- **Principal Focus of the Project**
  - Problems associated with persistent erosion
  - Problems associated with storm damage potential
- **Project Design**
  - Designed to maximize benefits while meeting planning objectives and National Economic Development (NED) objectives
  - In accordance with Corps planning policy, an array of alternative solutions were considered and the selected plan maximizes net economic benefits

Project Background continued

- Why beachfill/dune projects may not be reflected on FEMA Flood Insurance Mapping?
- Designed to allow sand to shift and respond to natural variations in waves and water levels and by their nature are susceptible to erosion between nourishment cycles; may not be considered well-established by FEMA
- Designed to provide the maximum net economic benefit; not to a specific design storm (i.e. 50-yr or 100-yr return period event)
- Funding for periodic nourishment and post-storm repairs is not guaranteed


Questions

Transition

- Flood Study & Mapping Presentation by Christine Worley & Heather Zhao

Town of South Bethany, DE FIS Timeline

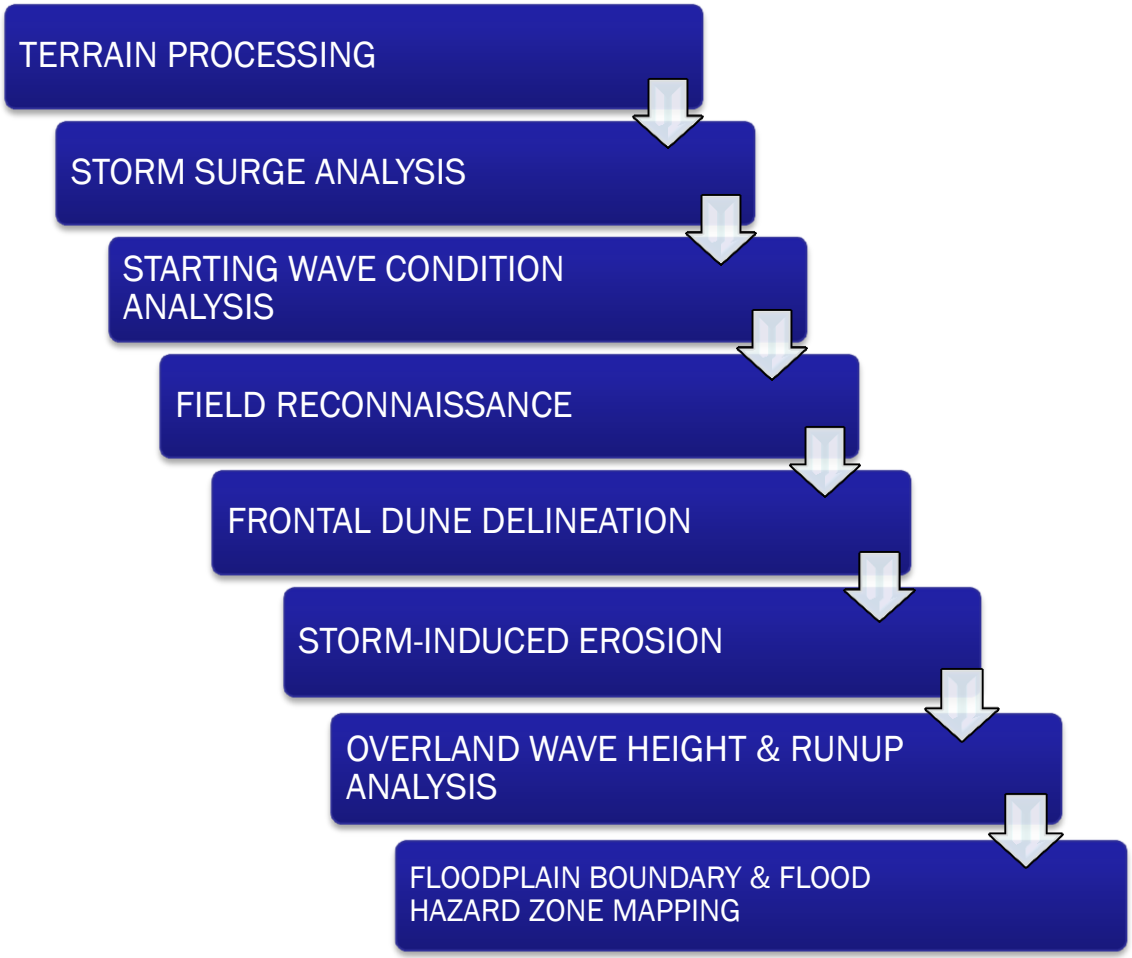
Regulatory Flood Insurance Study Activity	Date
Previous Effective Flood Insurance Study Issued for Sussex County	January 6, 2005
Preliminary Issuance for Sussex County for New Coastal Study	January 31, 2013
Final CCO Meeting	June 19, 2013
Federal Register Publication	December 23, 2013
Start of Appeals Period	February 6, 2014
Concern Raised and New Data Received	April 1, 2014
End of Appeals period	May 6, 2014
Preliminary Map Revised to Account for New Data Received	August 15, 2014
Letter of Final Determination Issued	September 16, 2014
Letter of Final Determination Rescinded	February 25, 2015
1/6/2005 Mapping Added Within South Bethany to Revise the 3/16/2015 FIRM	March 4, 2015
Effective Date for Sussex County	March 16, 2015
Preliminary Issuance for Town of South Bethany for New Coastal Study	May 18, 2015
Final CCO Meeting	May 21, 2015
Open House Meeting	**June 12, 2015**
Submit Flood Hazard Determination Notice to Federal Register	Mid July 2015
Estimated Federal Register Publication	September 2015
Estimated Start of the Appeals Period	**Fall 2015**
Estimated End of Appeals Period	**Early 2016**
Estimated Letter of Final Determination	Spring 2016
Estimated Effective Date for Town of South Bethany	**Fall 2016**

Effective vs. New Coastal Study

Coastal Study Component	Effective Study (1995 carried over to 2005)	New Study (2015)
Topographic data	1984 U.S. Department of Interior topo maps	March 2005 2 meter LiDAR data
Coastal methodology guidance used	FEMA Guidance from 1984-1989.	FEMA G&S , Appendix D, Atlantic and Gulf of Mexico Coastal Guidelines Update, dated 2007
Storm surge modeling (SWELs)	1991 USACE study using NOAA tide gage data at Lewes station	2012 USACE study using ADCIRC
Wave setup and height analysis	ACES or the Atlantic Coastal Hindcast Manual, 1981	SWAN, 2012 and WHAFIS 4.0, 2007

The new coastal analysis is based on new terrain data and the latest coastal methodology and models.

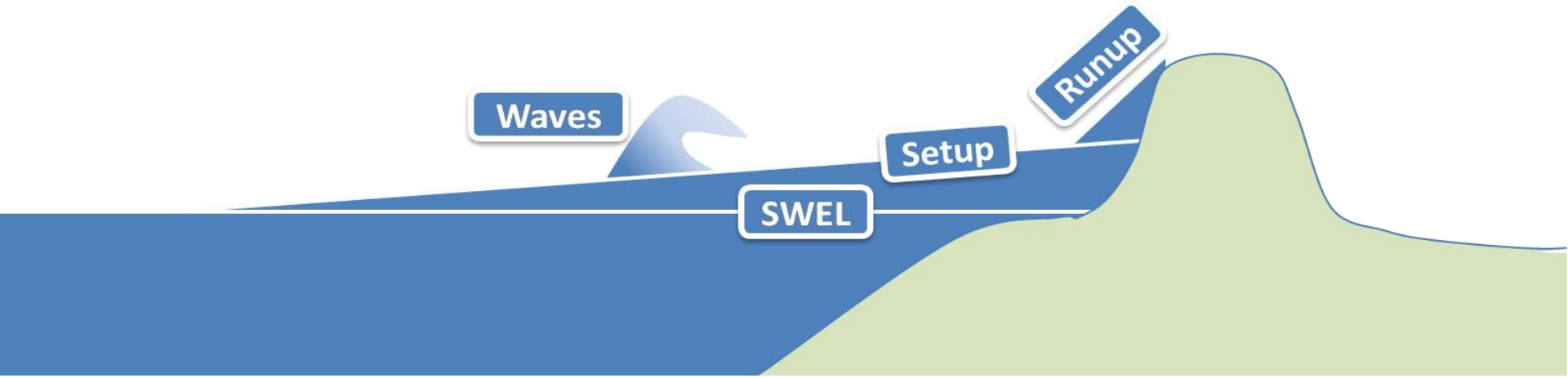
Coastal Study Process



Basic Elements of a Coastal BFE

Base Flood Elevation on FIRM includes 4 components:

1. Storm surge stillwater elevation (SWEL)
2. Amount of wave setup
3. Wave height above storm surge (stillwater) elevation
4. Wave runup above storm surge elevation (where present)



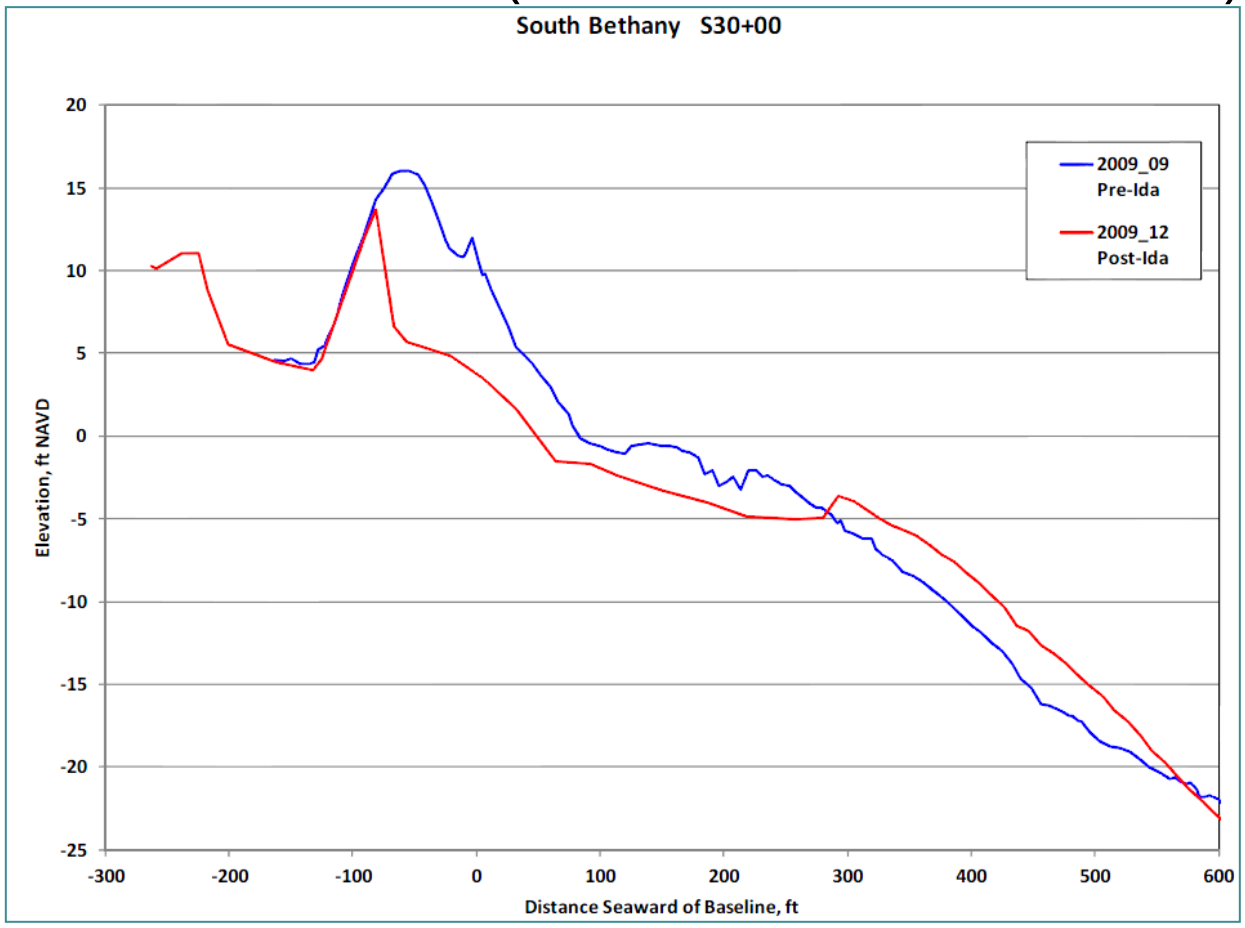
New Data received After 2013 Preliminary Map Issuance

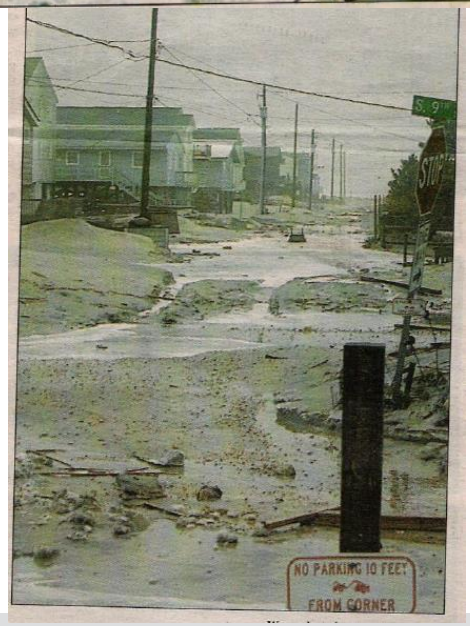
The additional data included:

- surveyed elevation data for Ocean Drive and Route 1within the Town limit, and other areas within the Town, collected in 2013 and 2014
- historic photographs of damage caused by storm events in the area of Ocean Drive
- beach elevation profiles surveyed by the USACE before and after the storm events Ida in 2009 and Sandy in 2012
- repetitive loss information for properties along Ocean Drive showing damage above 12 feet
- historic newspaper articles recounting storm damage

Pre- and post-storm survey data in South Bethany

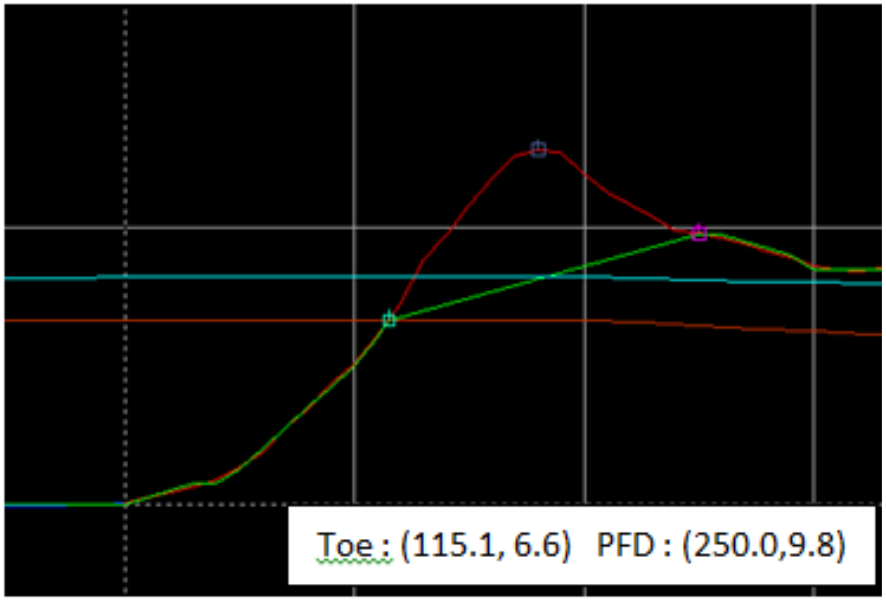
- Eroded profile shows significant retreat after storm and consistent with revised model. (USGS S30+00 is near Tr. 1610)

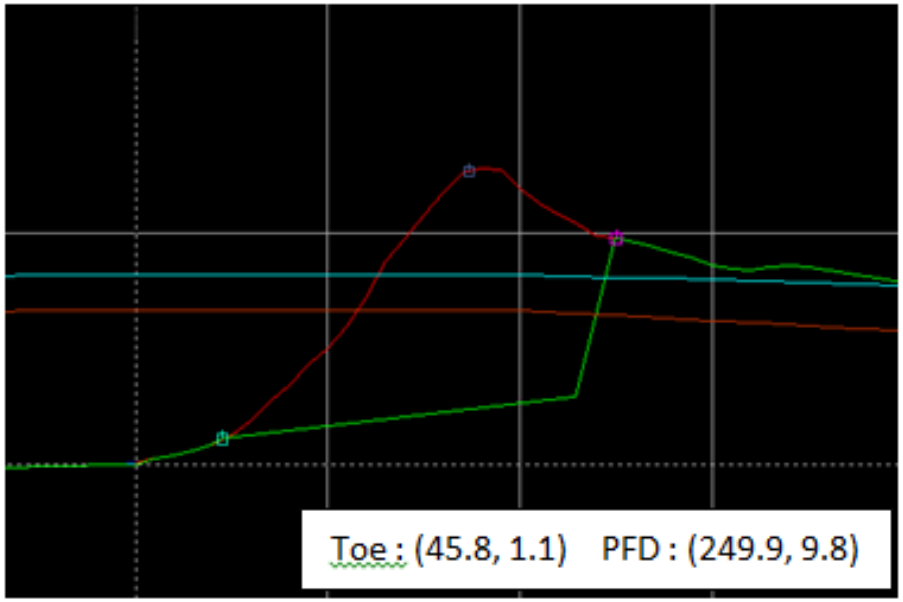




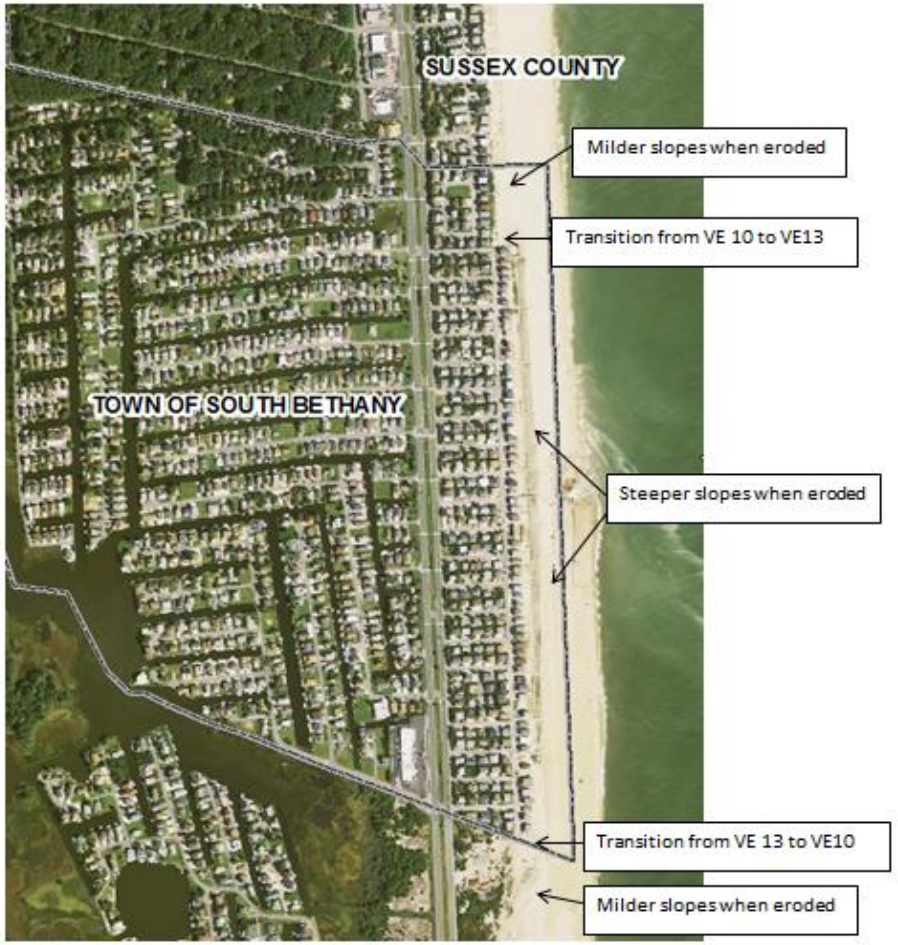
Revised erosion analysis (Tr. 1600 as an example)

- 2013 Prelim: Standard erosion methodology applied resulting in mild slope after erosion
- 2015 Prelim: Erosion profile was modified to be consistent with survey and observation resulting in steep slope after erosion

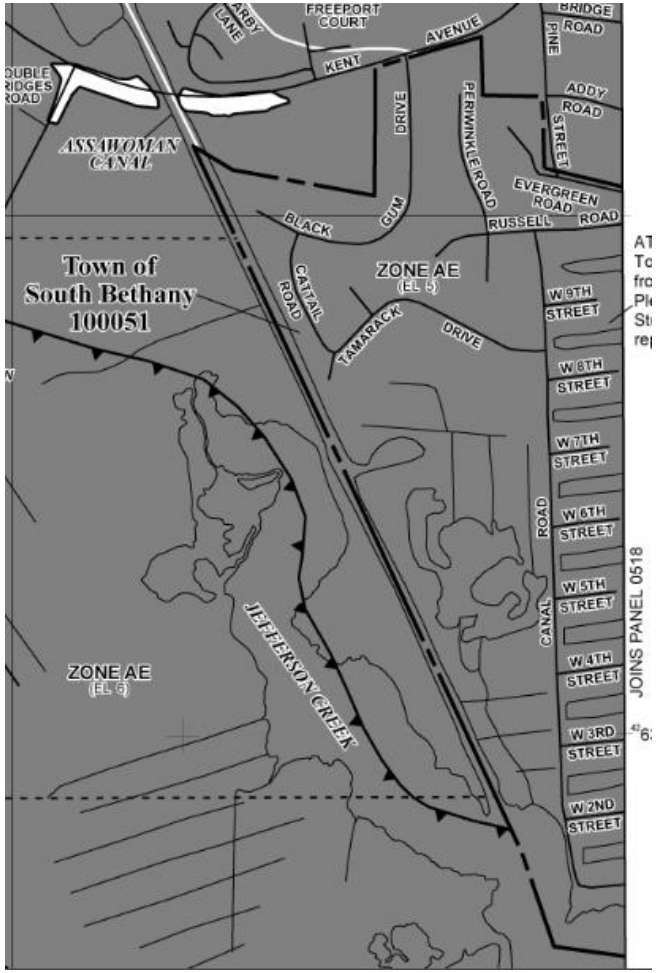




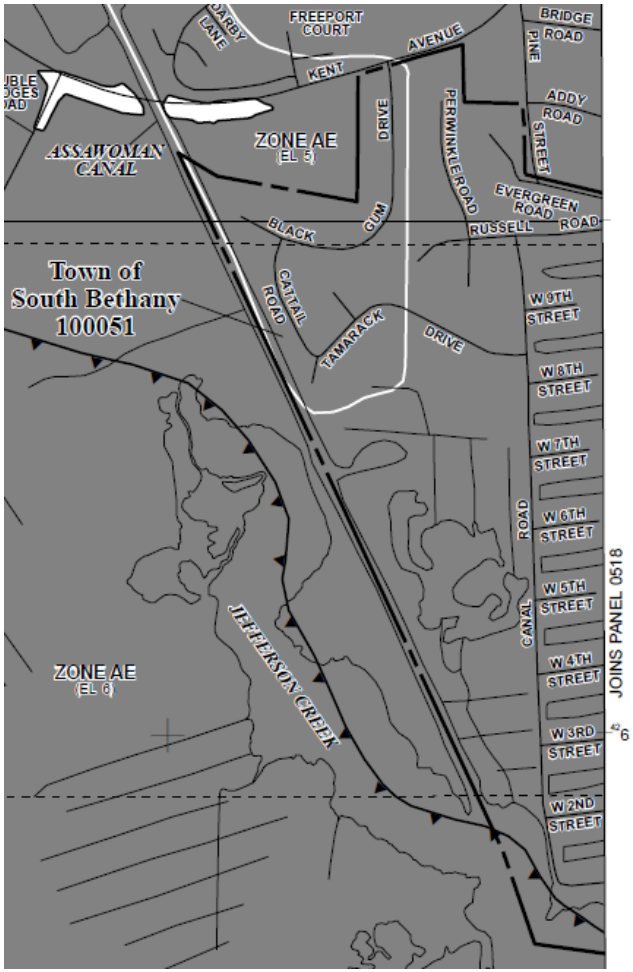
Runup Analysis in South Bethany



Effective vs. 2015 Preliminary FIRM 514 (West)

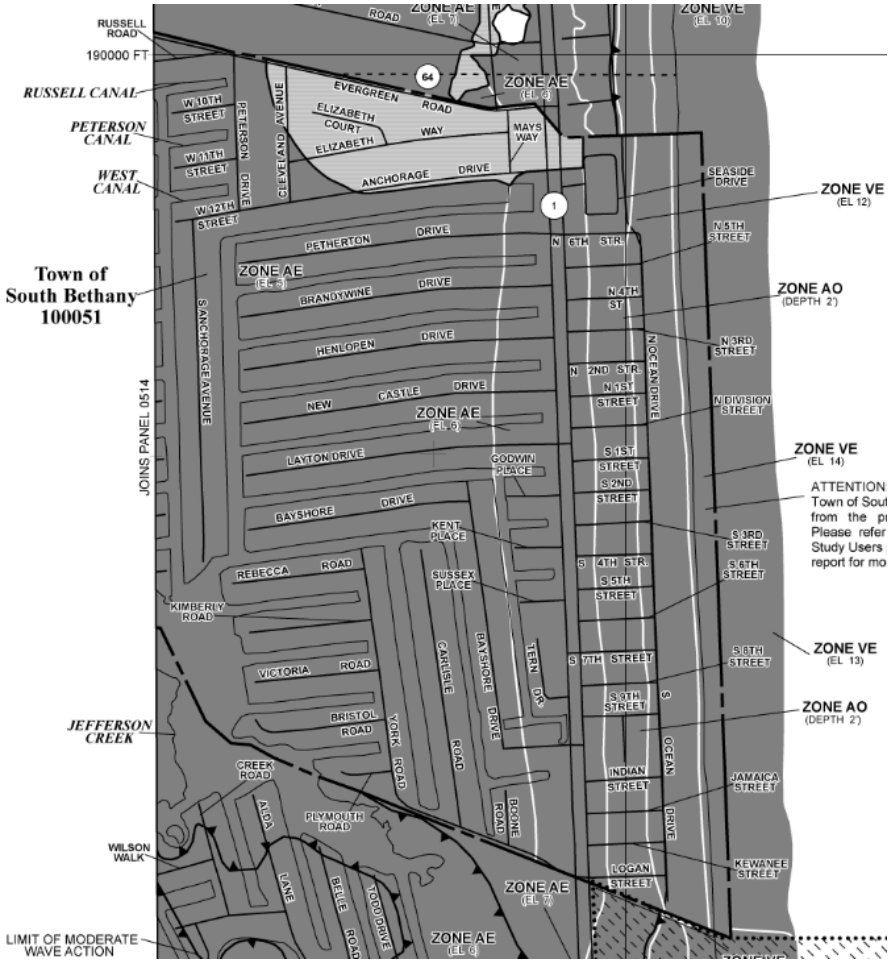


Effective March 16, 2015 FIRM 514

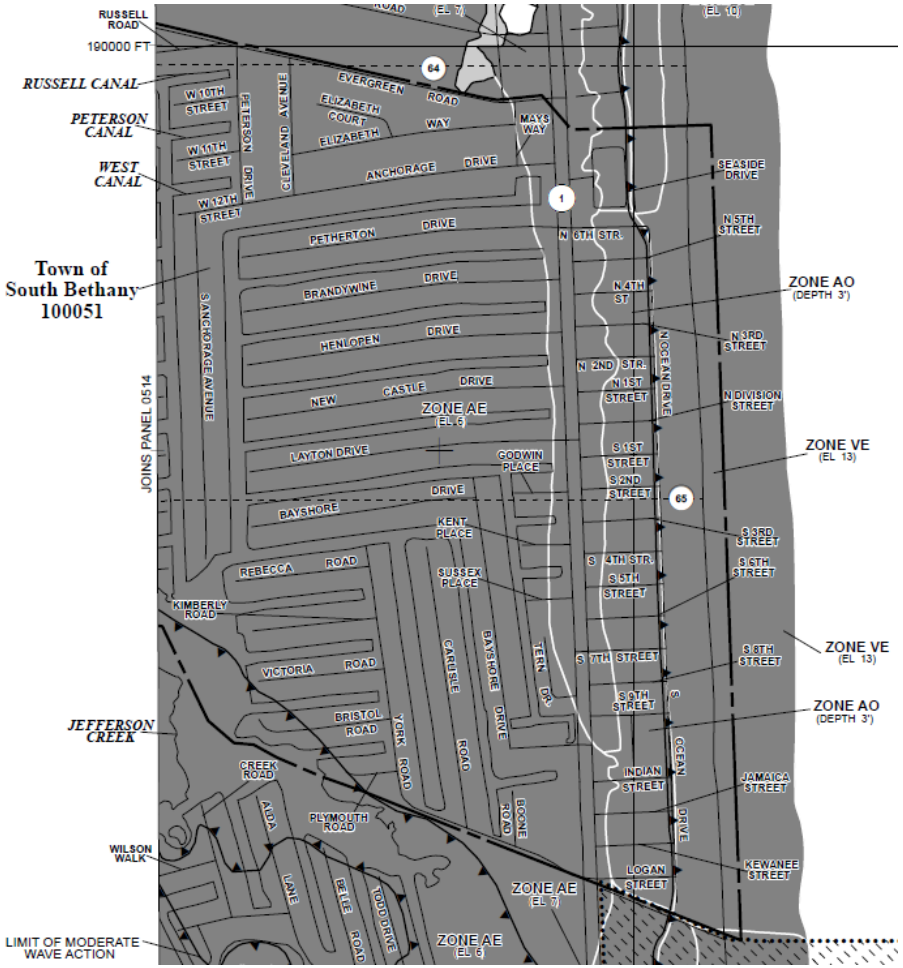


Effective May 18, 2015 FIRM 514

Effective vs. 2015 Preliminary FIRM 518 (East)



Effective March 16, 2015 FIRM 518



Effective May 18, 2015 FIRM 518

Transition

- Flood Insurance Discussion by Rich Sobota


Questions