

Flood Damage Mitigation And Insurance Costs

Friday, September 25, 2015 at 7:00 PM

Saturday, September 26, 2015 at 10:00 AM

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Introductions

- This presentation was prepared by
 - The South Bethany Sea Level Rise & Storm Surge (SLR & SS) Committee
 - With inputs from our SLR Adaptation Grant Partner, Anchor QEA

Topics to be Discussed

- Flood Insurance Rate Maps (FIRMs)
- Mitigating Flood Hazard Risks
 - Building Higher
 - Flood Insurance Information
- Working to Improve Resiliency
 - Elevations in South Bethany
 - Building Higher in Flood Zones – Freeboard
 - Sea Level Rise Adaptation Grant

Flood Insurance Rate Map (FIRM)

The FIRM documents the flood hazard risks in South Bethany as determined by FEMA (Federal Emergency Management Agency)

Definition of Base Flood Elevation (BFE)

- Is the height of the water for the 100 year storm
- Is based on historic data
- Is shown on Flood Insurance Rate Maps (FIRMs)
- Is not based on projected SLR

The Flood Hazard Zones in South Bethany

Zone	BFE
AE	The number following AE is the BFE
AO	BFE is the number following AO plus the highest grade adjacent to the house
VE	The number following the VE is the BFE
X	This zone is not in the floodplain. There is no BFE

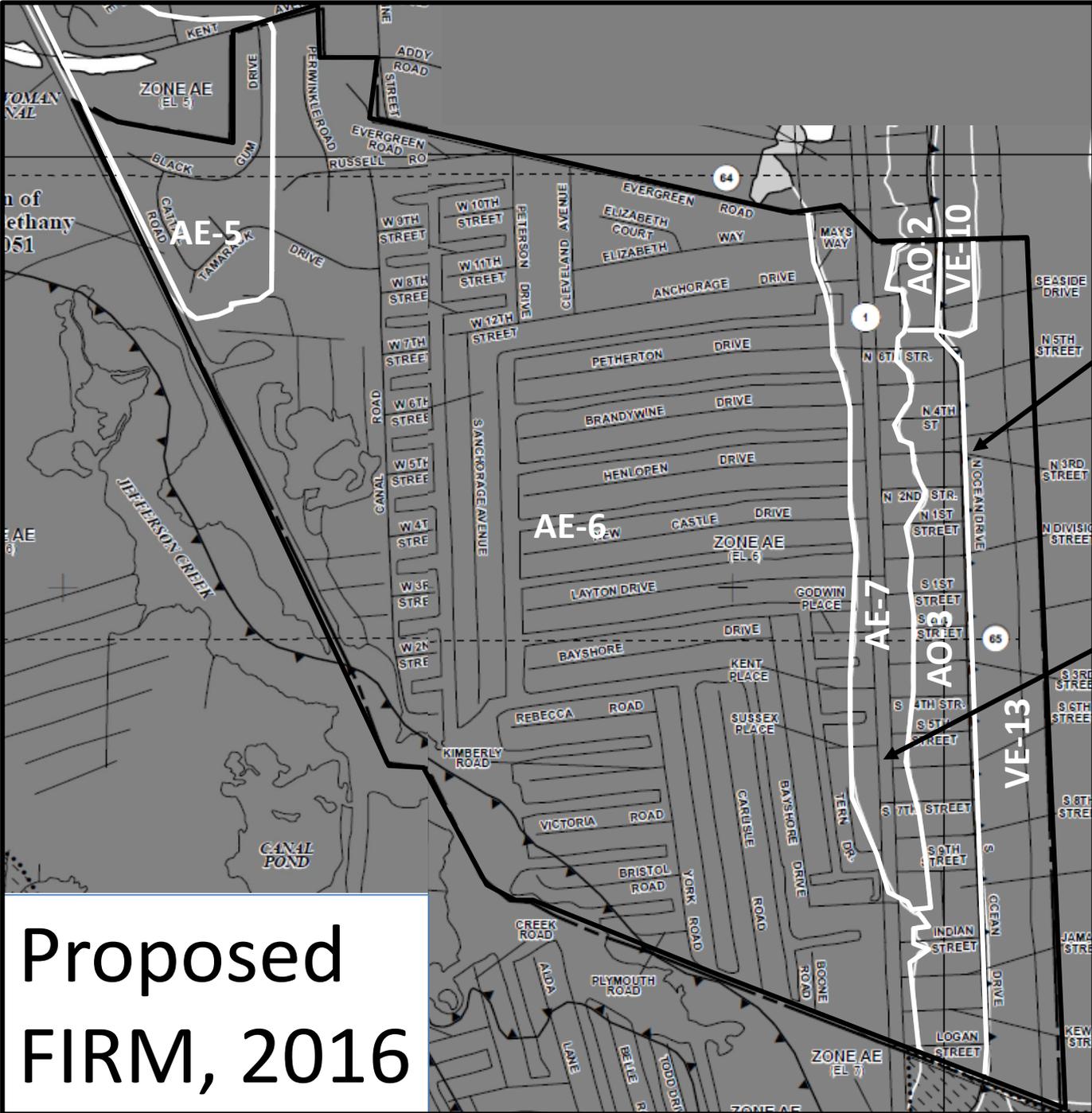


Ocean Drive

DE Rt. 1

Current FIRM

The Proposed 2016 FIRM Raises BFE By One Foot in Most Areas of South Bethany



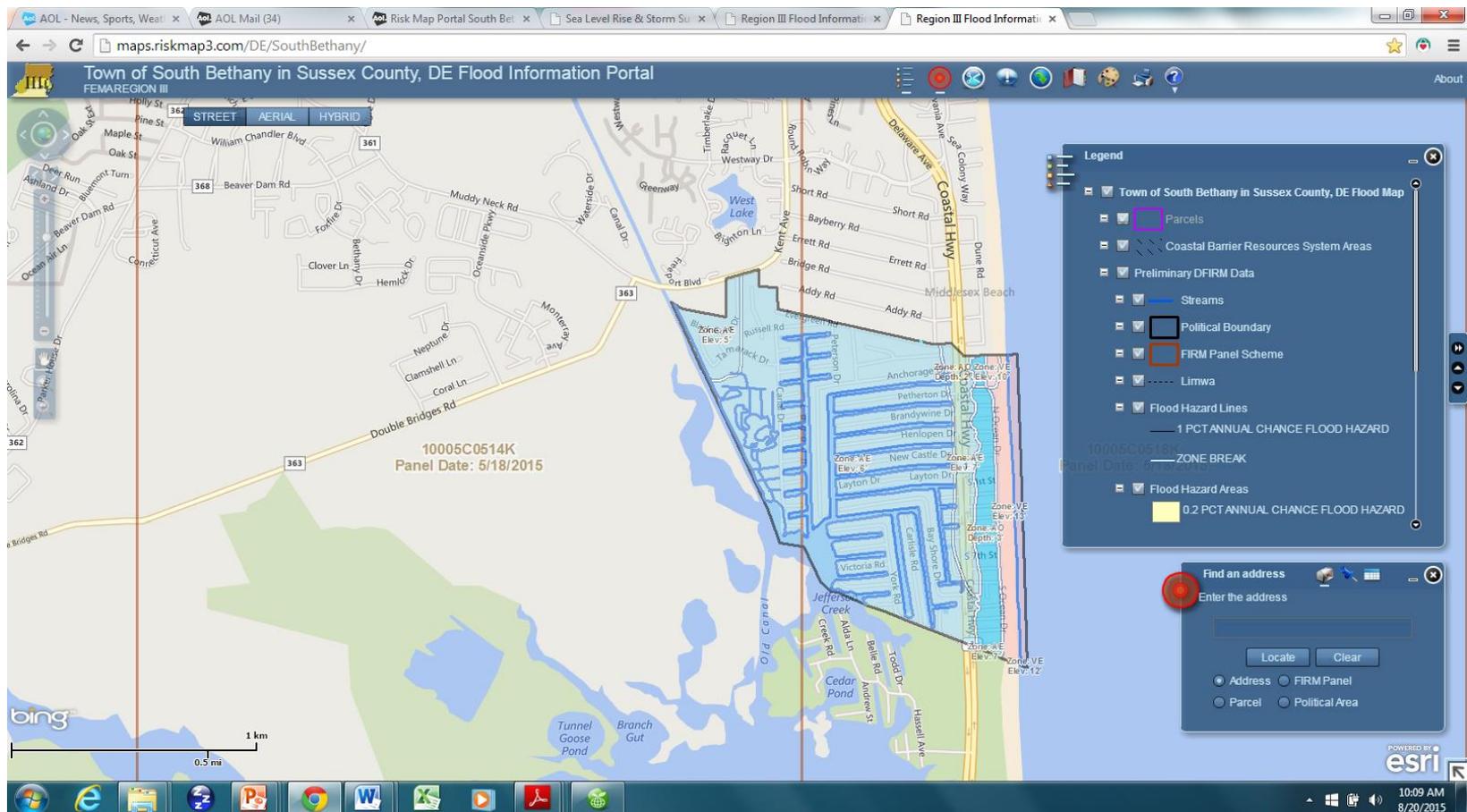
Ocean Drive

DE Rt. 1

Proposed
FIRM, 2016

Flood Information Portal Provides Current and Proposed BFE for South Bethany Home Owners

<http://maps.riskmap3.com/DE/SouthBethany/>



Mitigating Flood Hazard Risks

- Building Higher In Flood Zones – Freeboard
- Having Flood Insurance

What is “Freeboard”?

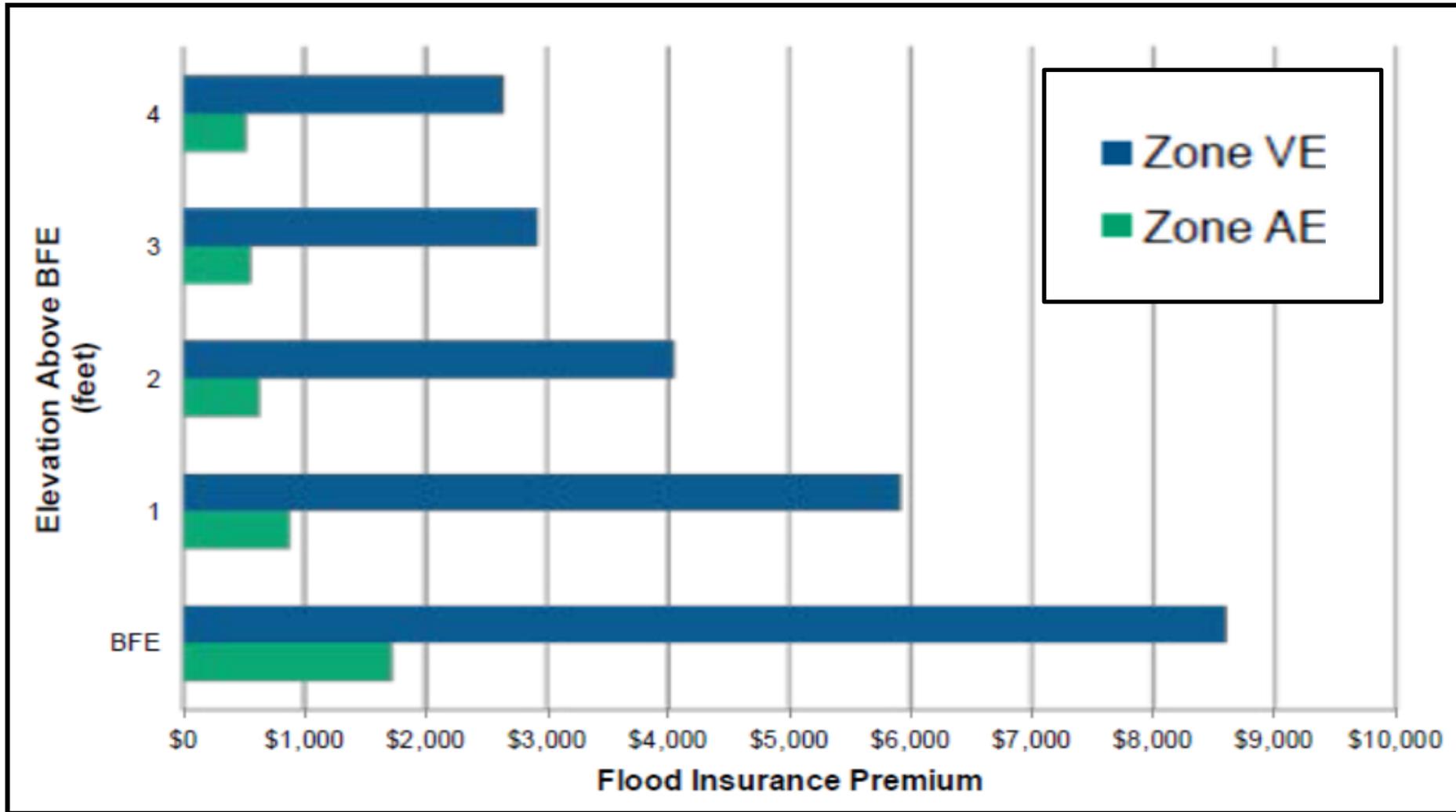
Historically Speaking...

Freeboard is a nautical term. It refers to the height of a ship’s deck above the waterline. If you think of the lowest floor of your house as the deck of your ship, and the BFE as the height of the sea, freeboard is the extra height that keeps the larger waves off your deck.

Benefits of Freeboard

The greatest benefit of freeboard is that it **reduces the risk** of property damage due to high water

Freeboard Reduces Flood Insurance Premiums



Source: FEMA Fact Sheet, *Building Higher in Flood Zones : Freeboard – Reduce Your Risk, Reduce Your Premium*

South Bethany code allows
for building height* to increase at least 2 feet
if there is at least 2 feet of freeboard

*Building height is measured from the centerline of the road to the peak of the roof

The News About Insurance From FEMA

FEMA will add a surcharge to all insurance bills

- 2nd homes: \$250 per year.
- Permanent residence: \$25 per year.

The News About Insurance Cont'd

Congress determined that this year premiums must increase by at least 5% but by no more than 18%.

*There are exceptions.
See your insurance agent*

The News About Insurance Cont'd

To reduce your flood insurance premium you may select a \$10,000 deductible; your insurance premium could go down by **as much as 40%**.

The News About Insurance Cont'd

“Grandfathering”

In general, if you have carried flood insurance continuously since your house was built, it will be rated according to the FIRM that was in place when it was built.

*There are exceptions.
See your insurance agent*

Resiliency

- Is the ability of the Town to recover from coastal hazard events.
- Is dependent on planning and preparing before the event occurs.

Working To Improve Our Resiliency

- Formed the SLR & SS Committee in June 2013
- Passed an ordinance in 2014 to encourage building with freeboard by allowing an increase in house height if there is freeboard.
- Surveyed the elevation of all streets, bulkheads, ground mounted transformers and storm drains to be used to assess the vulnerability of critical infrastructure.
- Obtained a DNREC grant in 2015 that will facilitate the development of a Comprehensive SLR Adaptation Plan to span 50 to 100 years.

Vulnerability of Critical Infrastructure

Infrastructure	Lowest (ft. above Sea Level)	Highest (ft. above Sea Level)
Streets	1.4	12.0
Bulkheads	0.5	4.0
Ground Mounted Transformers	1.6	9.7
Storm Drain Grates	0.9	6.1

Grant Specific Tasks

- Establish Elevation Database – Complete
- Select SLR Scenarios – Complete
- Identify Criteria of Interest – Target Date 11/1/15
- Complete SLR risk identification and inundation mapping – Target Date 02/01/16
- Hold Public Outreach Meetings – This meeting

SLR Scenarios

- Elevation data together with SLR projections, tidal variations and storm surge are used to assess the vulnerability of critical infrastructure.
- The Town contracted with Anchor QEA to develop SLR scenarios using data from numerous authoritative sources.

SLR Scenarios Developed by Anchor QEA

- Recommended a 50 year time horizon for South Bethany SLR analysis
- Recommended SLR Scenario for the next 50 years (2015 to 2065)
 - Lower bound: 0.7 feet
 - Upper bound: 1.7 feet
- Recommended that the scenarios be re-evaluated every 5 to 10 years

Local Water Levels Have Been Rising Over The Past 100 Years

Gage Location	Years of Recorded Data	SLR Extrapolated (ft. per 50 yrs.)
Lewes, DE	96	0.56
Ocean City Inlet, MD	37	0.94
Indian River Inlet, DE	25	0.93
Little Assawoman Bay, Fenwick Is.	14	1.45
Jefferson Creek, South Bethany	14	1.50

Recent History at Local Tide Gages Consistent With Scenario Lower (0.7 ft.) and Upper (1.7 ft.) Bounds

Gage Location	Years of Recent Recorded Data	SLR Extrapolated (ft. per 50 yrs.)
Lewes, DE	11	1.30
Ocean City Inlet, MD	11	1.50
Indian River Inlet, DE	14	1.02
Little Assawoman Bay, Fenwick Is.	14	1.45
Jefferson Creek, South Bethany	14	1.50

SLR Long Term Adaptation Goals

- Assess SB's vulnerability to SLR (current grant)
- Develop a Comprehensive SLR Adaptation Plan for a timeframe of 50 years
- Identify metrics/triggers for action
- Adapt to the challenges of SLR through prioritizing resources and funding

Questions?