

**TOWN OF SOUTH BETHANY  
SLR & SS Committee Meeting Minutes  
Friday, August 14, 2015, at 10:00 AM**

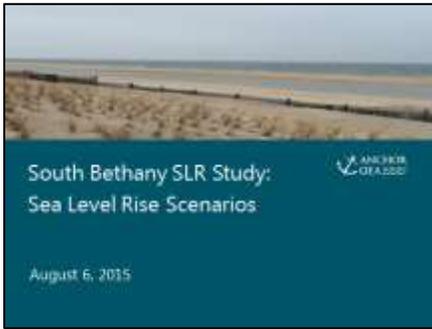
1. Call meeting to order	George Junkin
2. Status Report and discussion relative to SLR Grant with ANCHOR	George Junkin
3. Discussion relative to objective to get more CRS points	Jay Headman
4. Planning for Community Education	All
5. Planning for Public Outreach Meetings	All
6. What else should we be doing?	All
7. Adjournment	

**Agenda Item 1.** – George called the meeting to order at 10:00. Committee members present were, George Junkin, Frank Weisgerber, Jim Gross, Frank McNeice, Dick Oliver, and Dave Wilson. Jay Headman tendered his resignation so that he could move onto other endeavors. Members of the public that were present were Jack Whitney and Tony Caputo. Danielle Swallow, DNREC’s administrator for our SLR Adaptation Grant, participated in the meeting by telephone.

**Agenda Item 2. – Grant Status Report**

- All activities are on schedule
- Most of South Bethany’s inputs to the study (including elevation data, tide data, storm drain invert data and canal bathymetry data) were delivered to Anchor QEA late month.
- Final data (storm drain grate elevations in the Rt 1 median and the east side of Rt.1 and transformer elevation data) were completed by AECOM last week and will be delivered to Anchor QEA next week.
- Anchor QEA delivered to us their Sea Level Rise Scenarios. They recommend that we plan for a SLR of between 0.7 feet and 1.4 feet in the next 50 years. These predictions fall right on the DNREC low and medium predictions.

The committee reviewed the Anchor Presentation in detail. The presentation follows;



# South Bethany SLR Study: Sea Level Rise Scenarios



August 6, 2015

## Reports Reviewed

- The following reports were reviewed for this analysis:
  - Recommended Sea Level Rise Scenarios for Delaware (2008)
  - DNREC SLR Technical Workshop
  - Preparing for Tomorrow's High Tide (2012)
  - DNREC Delaware Coastal Program
  - Risk Assessment Report (AR2) (2014)
  - Intergovernmental Panel on Climate Change (IPCC)



South Bethany SLR Study: Sea Level Rise Scenarios



## Summary of DNREC Recommended SLR Scenarios

- Working group reviewed publications and guidelines from various sources:
  - USACE, NACE, NOAA, US Climate Change Science Program (CCSP), IPCC Fourth Assessment Report (AR4)
- Developed conversion from GSLR to SLR
  - Accounts for local geologic effects (e.g., subsidence)
  - Assuming difference from GSR and historic Lower SLR is constant (+1.85 mm/yr)
  - Updated SLR for ocean increase difference to -0.31 mm/yr
- Reconstructed the FRC model used by USACE
  - 0.3 (Low), 1.0 (Med), and 2.5 (High) inches by 2050
  - Model can be adjusted for intermediate time horizons
  - Informing DNREC Preparing for Tomorrow's High Tide Report

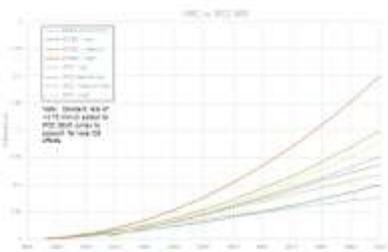
South Bethany SLR Study: Sea Level Rise Scenarios



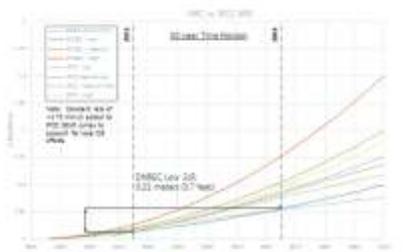
## Summary of IPCC Fifth Assessment Report

- Analysis considers a range of emissions scenarios
- Provides GSLR projections at 10-year increments up to 2100
- Incorporates land-ice contributions unlike AR4
- Provides a range of values, applicable to various scenarios based on globally observed trends
- May need local correction factors

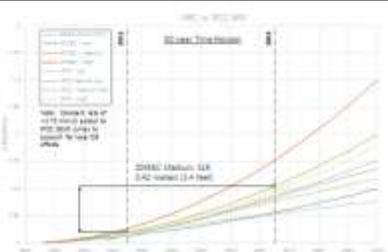
South Bethany SLR Study: Sea Level Rise Scenarios



DNREC vs. IPCC Sea Level Rise Predictions



DNREC vs. IPCC Sea Level Rise Predictions



DNREC vs. IPCC Sea Level Rise Predictions



DNREC vs. IPCC Sea Level Rise Predictions

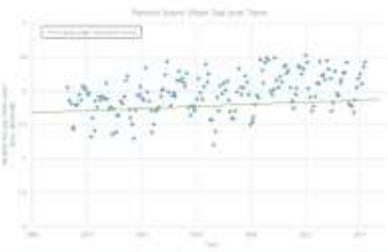
## Tide Data Analysis

- Nearly applicable records were reviewed and analyzed
- Tidal records less than 50-60 years can be affected by decadal fluctuations
  - Length of record:
    - Lowest: 36 year (Burgwardt)
    - Jefferson Creek: 18 year (Imbriate)
- We recommend that the Town continue data collection at the Jefferson Creek gauge
  - Can be used as local benchmark

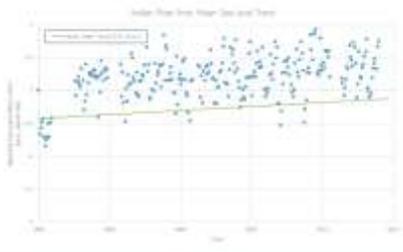
South Bethany SLR Study: Sea Level Rise Scenarios



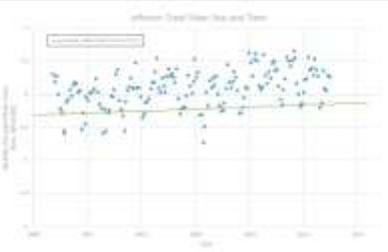
Lewes Tide Data



Fenwick Island Tide Data



Indian River Inlet Tide Data



Jefferson Creek (South Bethany) Tide Data

## Summary and Recommendations

- We recommend a 50 year time horizon for South Bethany SLR analysis
  - This is the practical design life for typical municipal steel works projects
- The location-corrected IPCC AR5 SLR trend lines represent a good range of planning considerations for South Bethany
  - Further they are bound by the 'median' and 'low' DNREC SLR recommendations
  - That the low and medium DNREC scenarios represent a good range for a 50-year SLR planning study for the Town
- Recommended SLR for 50 year time horizon (2065):
  - Lower bound: 0.7 feet (DNREC - Low)
  - Upper bound: 1.7 feet (DNREC - Medium)
  - This will be carried forth to the next study stage.

South Bethany SLR Study: Sea Level Rise Scenarios

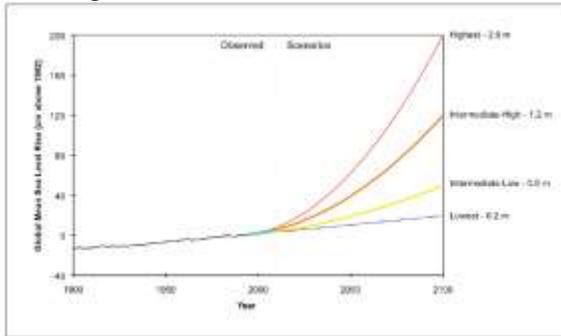


The review of the slides develop a few questions. These questions were documented and sent to Ram Mohan. A copy of what was sent is below.

Ram,

We had our SLR & SS Committee meeting this morning, 08/14/2015, and reviewed the Anchor QEA slides. The committee was very appreciative of all the work you and Anchor QEA have done. Below are comments/questions the committee had relative to the slides.

- Why did you not use as a reference *Global Sea Level Rise Scenarios for the United States National Climate Assessment*, December 6, 2012, NOAA Technical Report OAR CPO-1? It has higher scenarios than the DNREC scenarios, as shown below.



- Jack Whitney recalled from our lunch meeting that you said the USACE uses lower scenarios, but your slide 3 says that they use the NRC model which seems to be the same as the DNREC scenarios. Who is NRC? Does USACE use the DNREC scenarios?
- Your slides 5, 6, 7, 8 show DNREC scenarios starting in about 1985. My copies of the DNREC scenarios show them starting in about 2010. Why are they different?

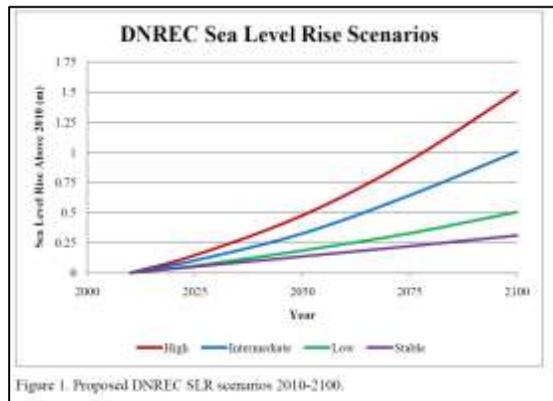
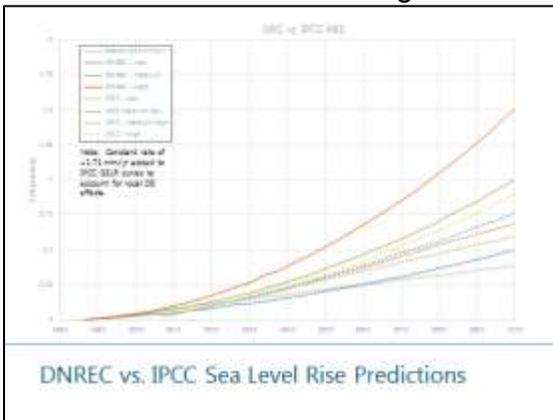


Figure 1. Proposed DNREC SLR scenarios 2010-2100.

- On slides 5, 6, 7, 8 are “local DE effects” subsidence or is there something else included?
- 11, 12 and 13 the committee would like to see the linear trend lines for the data plotted to compare to the Lewes trend line.
- Why is the red DNREC high scenario not even mentioned? Did it not have influence on your selection of the mid DNREC scenario as the high scenario for South Bethany?
- I believe that there is a typo on page 14. Page 14 says “Upper bound: 1.7 feet (DNREC – Medium)”. Slide 7 says the upper bound is 1.4 feet.

Thanks for all your work,

George Junkin, Chair South Bethany SLR & SS Committee

### **Agenda Item 3. – Discussion relative to objective to get more CRS points**

- Since Jay Headman had resigned there was no discussion relative to this topic.
- George pointed out that we needed to have someone step up to continue this task. Frank Weisgerber volunteered to pick it up.

### **Agenda Item 4. – Planning for community education.**

- This topic was intended to address a community outreach flyer on freeboard. Over the past few weeks there was considerable discussion on this topic and George said that he did not want to take a lot of time on the flyer at this meeting because it was not needed in the near term. What was needed by the end of September or beginning of October was a public presentation to meet the requirements for our Sea Level Rise Adaptation Grant which is the next agenda item.
- The committee still wanted to address community education to some degree. They felt that there should be something that our Code Enforcement Constable could give to people who were planning to build a new home or do substantial improvements to their existing home.
- Jim Gross suggested some existing FEMA items that could be included in the folder
  - FEMA – Fact Sheet – Building Higher in Flood Zones: Freeboard – Reduce Your Risk, Reduce Your Premium
  - Sections from FEMA – Home Builder’s Guide to Coastal Construction.
- Jim volunteered to put together a suggested list to be discussed at our next meeting. George made a motion that we accept Jim’s offer, Dick seconded the motion. The motion passed unanimously.

### **Agenda Item 5. – Planning for Public Outreach Meeting**

- A draft of the presentation for the public meeting was reviewed.
- The committee agreed on the general topics to be presented in the meeting
  - Grant objectives and the status of the Anchor work
  - Educate community on current and preliminary FIRM
  - Educate community that raising houses is good
  - Educate community relative to flood Insurance issues (reasons rates are going up and ways to decrease rates)
- The consensus of the committee was that pictures showing flood damage in South Bethany should not be included in the presentation.
- A slide with lots of definitions should be removed because it would be too boring for the general audience.
- Presentation of Current and proposed FIRMs is good. Also have hand outs and large posters of the maps.
- Show audience how to get to web site to see where their property is, <http://maps.riskmap3.com/DE/SouthBethany/>
- Picture of the Elevation Survey map is not required. Just a slide that says what information is available and possibly a blow up of what the information looks like.
- Make a cartoon to show what freeboard is. The committee agreed that the definition “Freeboard was (and still 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.” Is a good one.

- Just have a word chart, with just a few words, stating the benefits of Freeboard
  - Reduces building damage due to high water
  - Reduces flood insurance rate premiums (show graphic on brochure)
  - Local town code allows for building height to increase up to 2 feet if at least 2 feet of freeboard incorporated (make separate slide)
- Put the insurance items on separate charts so that the charts are not too wordy.
- Do not show the elevation certificate. It is too complicated.
- Include in presentation what the Town is doing to improve the Town's resilience against flooding risks
  - Formed the SLR &SS Committee in June 2013
  - Obtain a grant for the elevation survey of all streets, bulkheads and storm drains in 2013
  - Passed an ordinance in 2014 to encourage building with freeboard by allowing an increase in house height if there was freeboard.
  - Obtained a grant in 2015 that will facilitate the Town to eventually develop a Comprehensive SLR Adaptation Plan to span a timeframe of 50 to 100 years, to address both nuisance flooding and storm induced flooding.
- The science associated with the prediction of SLR is not absolute. There will always be some level of risk.

#### **Agenda Item 6. – What else should we be doing?**

- When we reached this point in the agenda we had already been in session for more than 2 hours.
- George handed out the info shown on the next page for the committee to review and then get back to George with any comments. The handout was from a document used a couple years ago for planning purposes.

**Agenda Item 7. – Adjournment** At 12:10 a motion was made and seconded to adjourn. The motion passed unanimously.

STRATEGIES	2014 OBJECTIVES	2015 OBJECTIVES	OBJECTIVE MEASUREMENT	2014 MEASUREMENT GOAL	Lead	Support	When	5/1/14 - 4/30/15 BUDGET REQUIREMENT	CHALLENGES ISSUES/STATUS
1.9 Further develop Sea Level Rise & SS adaptation strategies in support of goal to assure the future protection of both the property owners' and the Town's assets.									
	1.9.1 Update Comprehensive Plan to reflect SLR & SS Goal.		CP is updated to reflect goals	CP is updated to reflect goals	Dick Oliver, Chairman Planning Commission	George Junkin SLR & SS Committee Chair	10/1/14	None	
	1.9.2 Adopt new codes to protect property and life that address sea level rise and storm flooding.		New codes adopted	New Codes adopted	George Junkin SLR & SS Committee Chair	Jim Gross, Charter & Code Committee Liaison		None	
	1.9.3 Educate community		Number of public meetings and communications	At least one meeting and one mailing	George Junkin SLR & SS Committee Chair		On going	In current budget	Many homeowners do not attend meetings and do not read mail.
	1.9.4 Improve CRS rating		CRS Rating	Improve by 200 points	George Junkin SLR & SS Committee Chair	Malvin Cook Town Manager & Jay Headman	By?	None	Lots of paper work
	1.9.5 Continue to collaborate/team with DNREC, other state agencies and local vendors to pursue grants and assistance with projects		Enumerate the meetings attended. Obtain grants	South Bethany receives at least one grant and assistance for Coastal Resilience, Risk Analysis and Mitigation Plan for SB	George Junkin SLR & SS Committee Chair		12/30/14	\$5,000	Competition for grants. Matching funds are required
	1.9.6 Obtain grant to obtain more elevation data		grant obtained	grant obtained	George Junkin SLR & SS Committee Chair		12/30/14	\$2,500	Competition for grants. Matching funds are required.
	1.9.7 Continue to collaborate/team with DNREC, other state agencies and local vendors		Travel to meetings	meetings attended	George Junkin SLR & SS Committee Chair		5/1/15	\$300	Cost to travel. Dover 104 miles round trip.
	1.9.8 Keep canal water from back flowing into streets		Install check valves	Install two additional check valves.	George Junkin SLR & SS Committee Chair	Don Chrobot Maintenance Supervisor	12/30/14	\$1,500	Funding