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Forum Notes: Infrastructure and Utilities Breakout

HR Adaptation Forum

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November 16, 2012. Hampton Roads SLR/Flooding Adaptation Forum.

Infrastructure and Utilities Breakout

Concerns, critical needs, vulnerabilities

Are we discussing the mega-events or the slow creep of SLR?

- For public works, and public agencies, we must always take into consideration the extreme events. The “Sandy’s” become the teaching events

Do we need a larger framework for “recurrent flooding?”

The infrastructure and protection design really comes down to cost. What kinds of protection can a jurisdiction afford, especially in terms of roads.

What is the design philosophy for major infrastructure projects? If you look in engineering manuals, is SLR being factored into the traditional engineering approaches? How can you accommodate for incremental changes if you cannot afford to just raise up the road?

Must start to incorporate SLR into engineering design approaches, and engineering design documents.

There are many questions associated with “What specific amount of SLR should we be planning for?”:

How much?

How to adjust the codes to address the new science?

Need the science to better inform the design standards.

How should programs and codes be adjusted to address the new science?

Sometimes the science stories are conflicting.

Hampton plans for the 10-year storm. The city council asks the engineers for 3 scenarios and the accompanying courses of action:

Total extreme (500 years) – costs

Middle of the road event

Lower end event

City Council wants a better estimate than “3-to-5 feet”.

Planning in the face of that kind of uncertainty is very difficult. Politicians want a “red light” or a “green light.” The “maybe” is much harder to sell and to explain.

Critical Need: Educate the policy-makers to believe in a certain amount of uncertainty; that planning must continue in the face of uncertainty. Uncertainty is NOT a rationale to not act!

Hampton and Newport News– both are doing extensive watershed studies hoping that the results will illuminate where to focus efforts.

Rain events are a different beast, and we experienced a couple of severe rain events in the summer of 2012.

What should we build the systems to withstand?

Must be able to tell the engineers where to start the tailwater.

Look at phased plans.

Move in the direction of low impact development

Plans must consider the 10-30 year storm.

Moving to low impact development is fine but do not forget about the floodplain management. NC has good LID, but they have taken flood control out of the equation.

Policies for flood control must be improved:

What is the rate of runoff for these more frequent and intense storms?

Definitions of 10-year storm runoff rate must be changed from 2” per hour to 4” per hour in order to provide adequate flood control.

Recommend using SCENARIOS: :What if scenarios with realistic mapping and models can help you identify what infrastructure could be impacted and determine where you could mitigate.

Or, use table-top “exercises.” These kinds of drills are a good way to figure out where the problem spots are.

Make sure you mitigate the biggest problem; system needs to fail “gracefully.”

Hampton went to major drainage ditches, but when those overflow, what are the other things that can be done?

Can we work REGIONALLY?

Education the public is another critical need. Perhaps thru the ASCE?

Start with the City Council:

Explain occurrences, why, and that it is OK for water to flow down the street but NOT into their garages. Keep people off the streets.

Our policies are not keeping up with the changes in Hydrology.

Can we put out guidance documents to the engineers to know what tools are available?

Instead of talking in terms of the 10-year storm, talk in terms of the 2003 storm or the 2009 nor'easter. People who were here and lived thru those events will understand that much better.

Next Forum:

Reach out to the USACE. They could play a role in facilitating a regional approach.

Is ACOE doing studies for increasing rates of runoff? A watershed analysis?

A presentation on SLR and civil works.

Someone from the Highway administration.

Public works across all localities; have each locality present its public works philosophy.

Has each locality made updates to policies to address SLR.

Bill Sammler – NWS!

Focus a forum on: Here is what you can do in your locality.

Need to educate and develop better messaging:

-Public

-Engineers

-City Councils

-Policy makers

Understand better the psychology of social marketing and how people make decisions. The public is not taking this seriously, and the media has some responsibility for this.

There will be uncertainty in the estimates of SLR over time; somehow we must educate that we have to figure out how to plan in the face of uncertainty.

Could this Forum be a catalyst to look beyond conventional engineering approaches?

What can we learn from Sandy?