PUBLIC INFORMATION

ITEM NO. 4.

DATE OF MEETING: May 7, 2012

REQUESTED BY: Commissioner F.D. Rivenbark

SHORT TITLE: Chairman Tom Thompson, NC 20: Presentation on NC Sea Level Rise Issues

BACKGROUND: At the April 2, 2012 Board of Commissioners' meeting, a resolution was distributed from Carteret County concerning North Carolina's Sea-Level Rise Reports, Policies, and Monitoring Efforts, and asking other coastal counties, municipalities and agencies to adopt one similar to it. Several Board members said they would not be comfortable voting on a resolution at this time. Mr. Rivenbark asked that staff bring an expert here to talk about it before putting it on the agenda. Mr. Thompson is in attendance to give a presentation on the issue. Also, information from NC 20 is attached.

"TWENTY COUNTIES...ONE VOICE"

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Sea Level Rise: The Story from Beginning to End

NC 20 counties recently won a substantial victory with over-zealous State bureaucrats who were attempting to impose a 39" sea level rise planning mandate on all NC 20 counties through the medium of CAMA land use planning. It would appear, from events at a Dare County Coastal Resources Commission meeting on February 8-9, that sanity has prevailed as a result of many months of hard work and many battles. If there were not enough drama associated with this, we have now been mentioned in the Science section of the New York Times in an article entitled "A North Carolina Lifeline Built on Shifting Sands" (www.nytimes.com). Our economy has been spared what could have been a catastrophic regulatory intrusion. This is a narrative of the battle, how it started and how it ended. You've seen bits and pieces before as we kept you apprised of the contest between the CRC and NC 20; now here is that entire story.

The Order Of Battle and the Initial Skirmishes

The antagonists in this battle were Sea Level Rise (SLR) advocates who were the predominant force on the Science Panel of the Coastal Resources Commission. On the CRC itself, there were also several members who were adamantly in favor of accepting the recommendations of the Science Panel. On the opposite side was NC 20. NC 20 consists of counties and individuals from up and down the coast who had fought the battles of homeowners insurance, storm water runoff and, most recently, Tar, Pamlico and Neuse buffer rules variances. Perhaps, more correctly I should say the elimination, without so much as a public hearing, of variances previously granted to property owners.

In all of these previous battles, NC 20 comported itself well and achieved much. In the case of SLR, NC 20 counties added another feather in our collective cap.

The Initial Skirmish

NC 20 members provided the first resistance to those pushing the 39" sea level rise by providing compelling arguments about natural cycles that were not predicated on CO_2 in any way, but which were correlated with "orbital forcing." That is essentially planetary movement affecting the earth's orbit around the sun over long cycles that has an effect on climate. These naturally occurring

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phenomena are why Greenland was once called "Green" land and why we have periodic ice ages. Expecting an abrupt increase of 39" in a period of only 88 years bordered on insanity, yet that's exactly what the Science Panel reported as a likely scenario. Much to our alarm, a public hearing was set for action by the Coastal Resources Commission at a meeting in Beaufort in December to mandate the use of 39" in all land use plans. Realizing the danger, members of the NC 20 Board of Directors led by Larry Baldwin appealed to Bob Emory, the Chairman of the CRC, the very day before the vote on the policy was to have taken place. To his everlasting credit, Mr. Emory immediately perceived the problems of such an abrupt move. The following day, NC 20 members were subjected to a pleasant surprise in a presentation by Tancred Miller, Coastal Policy Analyst, in which he presented the completely rewritten Science Panel report with about three-fourths of it redlined out! True to his word, Mr. Emory removed any mandates, "shalls", "musts", etc. Instead, the CRC recommended that the policy simply be one of advising counties to plan for a 39" SLR. At the same time, the CRC remanded the Science Panel's report back to them with instructions to revisit NC 20 objections to see if their original document should be amended. It was a welcomed victory, but the war was not over.

The Second Phase: Regrouping and preparing for the next skirmish

As with many of the conflicts in history, the initial skirmishes were important, but not definitive. What NC 20 really needed was a complete and total elimination of a 39" SLR projection and its replacement with a scientific projection. The urgency of the matter was intensified by the news that the Department of Crime Control and Public Safety was using the Science Panel's projections to draw new flood maps. That meant there was no time to waste. The Department had been given $5,000,000 by FEMA to accomplish this. Our cash balance at the time was about $18.000; we had to work quickly and with limited financial resources.

We recognized that the "hockey stick" curve (illustrated in the graph on the following page) that had been utilized by the Science Panel was based on pure conjecture. First, they used the worst possible tide gauge reading in the State, the Duck, NC station, as the "minimum" possible SLR. (It was subject to "subsidence", the sinking of land due to the lack of bedrock, particularly in the northern half of the NC 20 counties.) It was also one of the shortest strings of sea level readings in the state. Wilmington had more than 80 years. Secondly, they used an outdated report by a notoriously aggressive climate warming advocate that showed an SLR of 55 inches which was retracted by the author himself. Why did the Science Panel select these two projections to "bracket" their estimate of 39 inches? It was obvious they wanted to show a reasonable "compromise." John Droz, one of our Science Advisors, began a dialogue with the Division of Emergency Management and also met with Bob Emory once again to plead for a total elimination of the Science Panel's report. The CRC would not repudiate the Science Panel's estimate.

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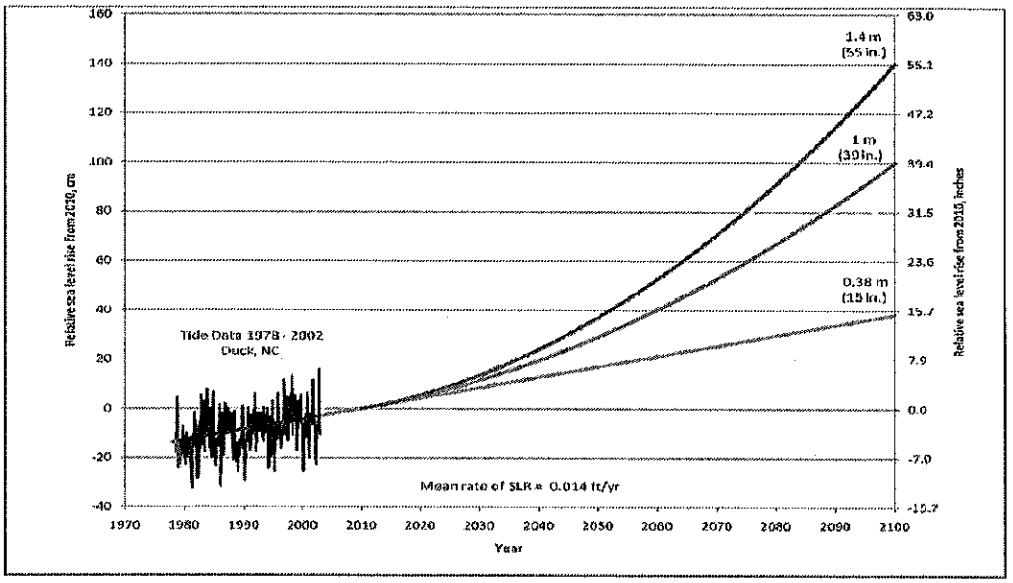

CRC's Science Panel's SLR Projections

At that point, we decided to have a symposium in New Bern and invite scientists whose credentials were impeccable, whose work was well known, and who relied on science in the debate of acceleration in SLR. We contacted Dr. Robert Dean, Professor Emeritus, Department of Civil and Coastal Engineering, University of Florida at Gainesville, and he readily assented to a presentation in New Bern. Along with Dr. Dean, we recruited Dr. Nicola Scafetta from Duke University. He is a brilliant physicist and mathematician who has done extensive work on global warming and specifically the causes of the periodic cycles in climate. He has demonstrated conclusively that heating and cooling cycles are a result of planetary movement which affects the distance of the earth from the sun. Dr. Scafetta's graphs of the heating and cooling cycles on earth were combined with graphs from the International Panel on Climate Change (IPCC), and it was not only visually but mathematically very apparent that the "hockey stick" projections by the IPCC could not be reconciled with the actual data.

Dr. Dean has studied SLR all over the world with his partner, James Houston, Director Emeritus of the Engineer Research and Development Center of the Army Corps of Engineers. Their study included a survey of over 471 tide gauges around the world with some extensive documentation of those that are most pertinent to the United States. In addition, they factored in satellite measurements which are the latest and probably the most reliable indicators of sea level in the world. Dr. Dean said that there was no "hockey stock." In fact, he said there was a slight negative acceleration, meaning that even with a straight line and very modest increase in sea level, about eight inches per century, sea level was actually beginning to decline.

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Putting this Knowledge into Action

Armed with this information, we asked for a meeting with the Secretary of Crime Control and Public Safety. Representative George Cleveland of Onslow County convened the NC 20 legislators and the Secretary for a meeting in Raleigh to reveal this research and to ask for a cessation of the flood plain mapping based on a 39" SLR estimate. At that meeting, John Droz, Dave Burton, and Larry Baldwin all presented and Bud Stilley added a very salient point: Why was the US Government giving the State $5 million to do a flood mapping exercise when it undoubtedly had more than enough data to do that in Washington, DC? Possible answer: they were trying to get us to eliminate flood insurance eligibility on our own property to avoid the political fallout from a Washington, DC edict.

It would probably be an understatement to say that the meeting was a home run. The Secretary, The Honorable Reuben Young, quickly and decisively assimilated the information, discussed it with his staff, and the following Monday morning the gentleman in charge of drawing the flood maps called and asked for a meeting with NC 20. The meeting took place that week in Washington, North Carolina with members of the NC 20 Board. After several hours, we agreed on an 88-year target of 20cm (about 8") which would be depicted as a straight line using Wilmington tide gauge readings to forecast the base rate for the entire coast. Wilmington had the longest and probably the most consistent stream of data regarding SLR (as opposed to Duck) and it showed essentially an 8" rise by the year 2100 based on a straight line projection. We all agreed that an envelope of one, two and three standard deviations would be depicted for anyone who wanted to consider a variation from the mathematical projection of the last eighty years that Wilmington afforded us. Additionally, we agreed to add a subsidence factor, meaning that data related to the sinking of land in various areas, Duck probably being the worst case, would be utilized locally as well. However, no acceleration would be shown, the 39" estimate of the Science Panel would be completely discarded, and a review every five years of the data would be utilized to ascertain if there needed to be any changes.

As a result of that meeting, tens of thousands of acres of land that would have been shown in the flood plain were not. The Division of Emergency Management and the Department of Crime Control and Public Safety are in the process of drawing those flood plain maps now based on our agreement. NC 20 will ensure that each county is fully aware of the estimates that will be utilized for these flood plain maps as soon as possible.

The Final Battle

Only one more thing needed to be concluded and that was the meeting of the Coastal Resources Commission in Dare County on February 8-9 to hear the Science Panel's response to NC 20's objections to their "hockey stick" theory. Amazingly, only one day before the meeting, the Science Panel withdrew the report and said that they would present it later. Even more amazingly, they also asked the Coastal Resources Commission to approve a draft policy to be presented at three separate hearings in the State regarding SLR planning. Conspicuously absent

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was any mention of the 39" target that they had originally used. The language in the policy draft was so vague that it was obvious that it could have meant almost anything. The Coastal Resources Commission voted it down by a 5-2 majority. To put the frosting on the cake, another motion was made that SLR not even be considered as a planning guideline in land use plans in any guise in the future. That motion also passed.

In terms of economic development, two major forces must be considered. One is the injection of money and one is the leakage of money. The injection of money is that new industrial payroll or land development, etc. On the other hand, leakage refers to the siphoning of money from an economy. Leakage can come in the form of depreciation, excessive insurance premiums (another battle we are fighting) or in the form of artificial constraints to development, which have the effect of either prohibiting development or greatly increasing the costs and thereby discouraging investment. Planning for a 39" SLR within 88 years would have placed a huge burden on NC 20 counties. Every new road in NC 20 counties would have to be assessed for its potential for flooding based on not historic flood data but on the existing flood data plus a 39" addition. Land sales would have been impacted severely by the Science Panel's recommendation, and even large tracts of timber would have been greatly depreciated based on these projections.

It would appear obvious that an economic impact statement should have accompanied any such drastic recommendation, but that wasn't even discussed. Lastly, the composition of the Science Panel in particular, and probably many other boards and commissions in the State, needs to be closely examined to make sure that there is a balance of opinion and that a countervailing power be encouraged to prevent excesses such as we have seen here. Dr. Dean presented a list of other scientists who completely disagreed with the premise that SLR was accelerating. He himself had impeccable data that is something that the Science Panel apparently did not even consider. It is hoped that this exercise will be a lesson for the State as a whole.

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Tax Base Value Estimate	2012-2013
Real Property	$ 5,959,699,208
Farm Deferred	$ (230,934,120)
Personal Property	$ 197,159,124
Elderly/DV Exempt	$ (38,597,146)
Motor Vehicle Value	$ 410,148,622
Public Utilities	$ 104,012,842
Total Tax Base	**$ 6,401,488,530**

	Property Tax Revenue
1 cent per $100	$ 640,149
at 92.67% Collection*	$ 593,226

2011 Tax Rate
Property Tax Revenue Based on Value Estimates

Additional Revenue Sources**
Sales Tax
Sales, Services and other Revenues
Intergovernmental Revenues
General Fund Appropriated Fund Balance

Total Revenues

* Collection rate from March 30, 2012 report from Collector.

**Taken from 2011-12 budget ordinance

$	0.512
$	30,373,168

$	4,110,349
$	3,107,290
$	7,046,632
$	3,434,748

$	48,072,187

Proposed General Fund Budget**	$	49,437,421

Budget Deficit	$	(1,365,234)
Rate increase required to match GF Budget	$	0.0230
Total Rate required to match GF Budget	$	0.5350