Selected Issues with New Jersey Hazard Mitigation Plan (HMP)

March 2014

Plan Excerpts Examined

I. Is Climate Change a Reality?: In the HMP plan, the State of New Jersey still hedges on whether it is fully committed to making policy, regulatory and federally funded project design changes to reflect projected sea level rise. It will consider costs and **"whether**" changes need to be made in light of "**inherent uncertainty"**

> "In addition, NOAA has made available electronic tools for individual communities to assess risk on a local or regional basis, including its Sea Level Rise Tool for Sandy Recovery. The state is consistently applying these tools **to inform the development of this plan**. In addition, as part of the State's comprehensive effort to assess the potential long term efficacy and fiscal sustainability of specific risk reduction measures and improvements using CDBG funding, the State intends to utilize the federal government's available tools to consider the impact of potential sea level rise and **consider whether project designs should be enhanced** to address potential sea level rise scenarios where such enhancements are **cost effective and reasonably practical given the inherent uncertainty in sea level rise modeling.**

II. Mischaracterized Risk Areas. In the map below, the light blue shaded "low risk" is exactly location of over-wash cut that took out a bridge, Rte. 35, and many homes. It is in this supposed low risk area where the state is building a $40 million seawall:

Figure 5.2-16. Coastal Erosion Areas Susceptible to a 100-Year Storm Event in Ocean County

http://www.ready.nj.gov/programs/pdf/mitigation2014/2014-Section-5-2.pdf

III. Conflation of flood risk: The flood risk assessment and maps are based on the FEMA FIRM's, i.e. the 1% (100 year) elevations - not the more conservative 0.2% (500 year), yet the HMP uses both:

1. National Flood Insurance Program

   The NFIP makes federally backed flood insurance available to homeowners, renters, and business owners in participating communities. For most participating communities, FEMA has prepared a detailed Flood Insurance Study (FIS). **The study presents water surface elevations for floods of various magnitudes, including the 1% annual chance flood and the 0.2% annual chance flood (the 500-year flood)**. Base flood elevations and the boundaries of the 100- floodplains are shown on Flood Insurance Rate Maps (FIRMs), which are the principal tool for identifying the extent and location of the flood hazard.

   The FIRMs depict SFHAs - those areas subject to inundation from the 1% annual chance flood (also known as the Base Flood or the 100-Year Flood). Those areas are defined as follows:

IV. Nonexistent Coastal Management Office

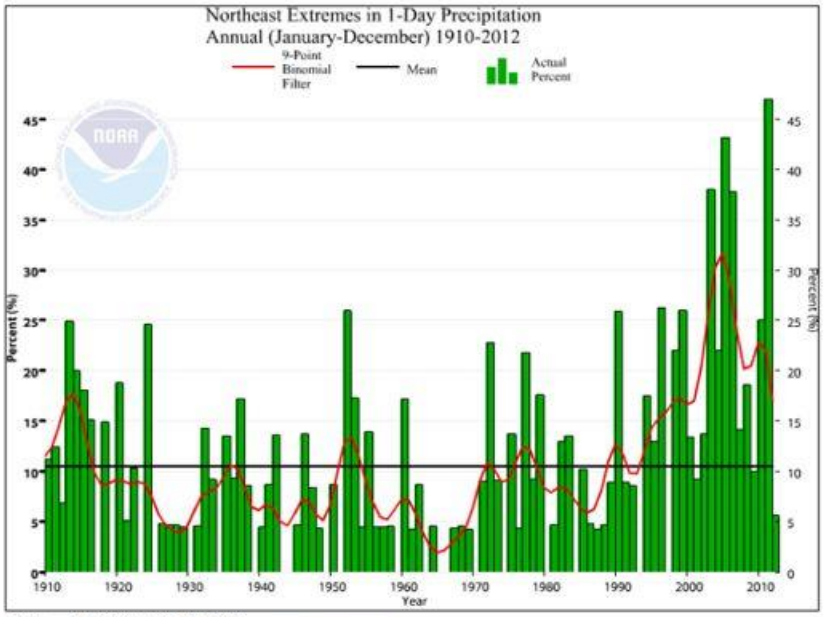
Section 5.2.3 states:

"The Coastal Management Office is part of the Commissioner's Office of Policy and administers the planning and enhancement measures of the CMP."

Yet, the Coastal Management Office previously was part of the Commissioner's Office of Policy, but current DEP Commissioner Martin abolished that Office and transferred the Coastal management program to the land use management program. It is no longer on the DEP Organizational chart.
http://www.nj.gov/dep/commissioner/orgchart.pdf

V. Here's a good example of giving climate change lip service - with no relationship between the science and any plan or mitigation effort:

Figure 5.6-8. Frequency of Heavy Precipitation Events in the Northeastern United States, 1910 to 2010



Source: Rutgers Climate Institute 2013

With this increase in frequency of precipitation, New Jersey may experience more flooding events. More intense, frequent flooding could lead to significant habitat loss for wildlife. Salt marshes and estuaries that serve as critical feeding grounds for birds and waterfowl, and as nursery habitats for commercial fish, could be lost (State of New Jersey 2010). Future climate change may also lead to sea level rise which could lead to more frequent and extensive flooding. See Section 5.2 (Coastal Erosion) for detailed information regarding sea level rise (NJDEP 2013c

VI, Chemical Accidents Ignored: The Hazardous Substance section does a good job inventorying the risks from chemicals and recent accidents like Paulsboro, but downplays future risks and proposes no new mitigation measures or improved emergency planning. This section then defines this major problem away:

> **Climate Change Impacts**
>
> **Hazardous substance incidents are non-natural incidents; therefore, there are no implications for impacts from climate change.**

Further, despite a detailed facility and chemical risk inventory in Section 5-19, see:http://www.ready.nj.gov/programs/pdf/mitigation2014/2014-Section-5-19.pdf

the Flood risk section **fails to map the location and consider risks of hazardous sites or chemical storage facilities: e.g. Superfund, State toxic waste sites, RCRA hazardous waste management facilities, oil and chemical plants, etc: Many are located in flood plains.**

This is all ignored, despite the fact that the Plan notes that floods can introduce pollutants:

> **Floods can also lead to negative impacts on the environment. Loss of riparian buffers, land use change within a watershed, and introduction of non-natural contaminants may cause environmental issues when floods occur (Montz and Tobin 1997; Rubin 2013).**
>
> Flooding (inland, coastal, or tsunami waves) can cause a wide range of environmental impacts. These include, but are not limited to generating large amounts of tree and construction debris, dispersing **household hazardous waste** [but not industrial waste or chemical products??]into the fluvial system, and **contaminating water supplies** and wildlife habitats with **extremely toxic substances.** Floods of greater depth are likely to result in greater environmental damage than floods of lesser depth. Long duration floods could exacerbate environmental problems because clean-up will likely be delayed and **contaminants have the potential of remaining in the environment for a longer period of time. Cleaning up after a flood presents additional environmental concerns**. The volume of debris to be collected, the extent to which public utilities (water supply systems and sewer operations) have been damaged, and the quantity of agricultural and industrial pollutants entering water bodies might present additional issues (Montz and Tobin 1997; Rubin 2013)

VII. Sea-Level Rise Impacts Masked: the Plan hides the risk of sea level rise by using a scale that makes it impossible to see the impacted areas on the map. They even say that in a footnote to the map. This is from the erosion section and **the risks they rate hiding are the "Achilles heel" of back bay flooding.**

> **Note: Due to the scale of the map, it is difficult to see the highest, intermediate-high and intermediate-low scenarios.**
>
> map on page 5.2 -45

VIII. Flaws in Seawalls NJ Is already Building: This basically says the Mantoloking sea wall is flawed (from Chap. 5.2):

> Historically, some of the methods used by municipalities and property owners to stop or slow down coastal erosion or shoreline change **have actually exacerbated the problem. Attempting to halt the natural process of erosion with shore parallel or perpendicular structures such as seawalls (groins and jetties) and other hard structures typically worsens** the erosion in front of the structure (i.e. walls), prevents or starves any sediment behind the structure (groins) from supplying down-drift properties with sediment, and subjects down-drift beaches to increased erosion. Since most sediment transport associated with erosion and longshore drift has been reduced, some of the State's greatest assets and attractions – beaches, dunes, barrier beaches, salt marshes, and estuaries – are threatened and will slowly disappear as the sediment sources that feed and sustain them are eliminated.
>
> Sandy barrier/bluff coastlines are constantly changing as the result of wind, currents, storms, and sea-level rise. Because of this, developed sandy shorelines are often stabilized with hardened structures (seawalls, bulkheads, revetments, rip-rap, gabions, and groins) to protect coastal properties from erosion. **While hardened structures typically prove to be beneficial in reducing property damage, the rate of coastal erosion typically increases near stabilization structures. This increased erosion impacts natural habitats, spawning grounds, recreational activity areas, and public access (Frizzera 2011).** Table 5.2-1 summarizes the number and type of NJDEP shoreline structures off the coastline of New Jersey along the Atlantic Ocean and Inland Bays (current as of 1993).

IX. Rainfall/Flood Impacts Excluded: The climate change portion of the Flood section rehashes the boilerplate text from the Erosion section, with one addition: the likelihood of more frequent and intense rainfall events and flooding. But those rainfall/flood impacts are NOT addressed in the risk assessment - i.e. not reflected in the mapped flood zones.

X. Flood Maps Do Not Count Sea-Level Rise: The Flood section does not include the effects of climate change and sea level rise. Flood elevations and maps are based on FEMA 1% (hundred year) flood zone. Those maps do not include climate change and sea level rise. Text:

> **"Future climate change may also lead to sea level rise which could lead to more frequent and extensive flooding. See Section 5.2 (Coastal Erosion) for detailed information regarding sea level rise (NJDEP 2013c).**

XI. Back Bay Risks Excluded: Barnegat Bay and Raritan Bay were the hardest hit areas yet the HMP excluded portions of both with no easy to tell exactly which areas were left out. Excerpt from Section 5.6 - Flood risks
http://www.ready.nj.gov/programs/pdf/mitigation2014/2014-Section-5-6.pdf

> New Jersey is located along the East Coast, is the most densely populated state, and one of the most densely developed states. Approximately 35% of New Jersey is located within the 1% annual chance flood zone, also known as the SFHA. Hudson and Cape May Counties have the greatest percentage of area located within the SFHA. Refer to Table 5.6-9 which summarizes the total area (inclusive of land and water) **located in the 1% annual chance flood zone. Please note certain sections of Barnegat Bay and Raritan Bay are excluded from the SFHA provided by NJDEP.** (@ page 5.6-47)

XII. NJ Maps Are 30 Years Old: the Plan is supposed to be based on "best available data." FEMA recently updated the coastal maps, but not the inland river maps. As PEER has noted, those maps are 30 years old. Here is text that admits that, but only by omission:

> "For the 2014 Plan update, the hazard profile and vulnerability assessment were significantly enhanced to reflect updated, best available data. A recap of each Federal Emergency Management Agency (FEMA) major disaster or emergency declaration event has been provided, along with events that did not result in a declaration, when available. **To assess vulnerability, the latest FEMA mapping was used, including preliminary work maps released in 2013 for coastal areas."**