

ASCE Met Section
Infrastructure Group Seminar 2009
**“Against the Deluge: Storm Surge
Barriers to Protect New York City”**

Review Panel:

Should Barriers be Built in NYC?

Warren Kurtz, P.E., Panel Chairman

Storm Surge Barriers to Protect NYC Summary of Day 1

What did I take away from Day 1 Papers?

The Threat:

- General public complacency in region because not many past large or devastating storm surges
- Climate change may alter that record
- Some concern about storm surge threats by scientists, engineers and conference attendees

What did I take away from Day 1 Papers? (con't)

Science and Analysis:

- New mathematical techniques may provide statistical estimates of probabilities of very infrequent events, such as large storms hitting NY Harbor.
- Mathematical models can help predict storm surge levels from various types and sizes of past and synthetic (future) storms

What did I take away from Day 1 Papers? (con't)

- Climate change effects on sea level has been predicted; quantifiable change in frequency or intensity of storms has not
- Maps have been created showing coastal inundation from various storm surge levels; with and without sea level rise
- Physical and economic impacts need more definition

What did I take away from Day 1 Papers? (con't)

Solutions:

- Storm surge barriers have been successfully used elsewhere, and may be appropriate for NY Harbor
- Barriers come with issues that need further study:
 - Water levels outside barriers during surge
 - Long term silt deposition
 - Overall environmental impact

What did I take away from Day 1 Papers? (con't)

- There may be other solutions, not discussed today:
 - Emergency planning and response
 - Land use development policies and controls
 - Smaller physical local protection for most critical or sensitive areas
 - Alternative barrier placements

What did I take away from Day 1 Papers? (con't)

Lessons Learned:

- Parallels to pre-Katrina New Orleans; and lessons learned from post Katrina:
 - Understanding Risk; and
 - Embracing Public Safety
- Risk is combination of:
 - Probability of occurrence; and
 - Consequences of occurrence/failure

What did I take away from Day 1 Papers? (con't)

- ASCE recommendations from Katrina are relevant to NY
 - Insure public safety is top priority for infrequent but devastating impacts from hurricanes and flooding
 - Quantify risks and update them over time
 - Communicate risks to the public and decide how much risk is acceptable
 - Update and rethink the protection and response system over time.

What are my conclusions?

- NY region needs to better understand and quantify risks from future storm surge
- We as professionals and a concerned public need to:
 - Communicate our concern to our elected officials;
 - Advocate for the region to undertake a comprehensive risk assessment concerning the threats from storm surge, and get a report back on findings and alternative solutions