

**National Windstorm Impact Reduction Program (NWIRP)  
National Advisory Committee on Windstorm Impact Reduction (NACWIR)**

**Meeting Summary  
September 18, 2017  
National Institute of Standards and Technology (NIST)  
Gaithersburg, Maryland**

**MEETING PARTICIPANTS**

**NACWIR Members:**

Walker Ashley	Northern Illinois University
John Boudreaux	Assumption Parish Office of Homeland Security and Emergency Preparedness
Wanda Edwards	RCI, Inc
Forrest Masters	University of Florida
Kishor Mehta	Texas Tech University
Walter Peacock	Texas A&M University
Tim Reinhold, <i>Chair</i>	Insurance Institute for Business and Home Safety
Donald Resio	University of North Florida
Donald Scott	PCS Structural Solutions
Kevin Simmons	Austin College
Thomas Smith	TLSmith Consulting, Inc.

**Windstorm Working Group (WWG)**

DaNa Carliss	National Oceanographic and Atmospheric Administration
Marc Levitan	National Institute of Standards and Technology
Chungu Lu	National Science Foundation
Ted Mansell	National Oceanographic and Atmospheric Administration
Jack Meszaros	Office of Science and Technology Policy
Shirley Murillo	National Oceanographic and Atmospheric Administration
Mike Uhart	National Aeronautics and Space Administration
Jonathan Westcott	Federal Emergency Management Agency

**NIST Staff**

Jason Averill, <i>DFO</i>	Division Chief, Materials and Structural Systems Division
Carmen Martinez	Engineering Laboratory Technical Support
Steve Potts	Program Analyst, NWIRP
Benjamin Davis	Program Analyst, Disaster and Failure Studies Program

## **SUMMARY OF DISCUSSION**

### **I. Opening Remarks**

Jason Averill, Chief of the Materials and Structural Systems Division opened the meeting and identified himself as the Designated Federal Officer (DFO) for the meeting. He commented that last time we were together at the August NACWIR meeting, we were watching Hurricane Harvey develop. NIST sent an 8-person team to conduct a preliminary reconnaissance of that storm's impacts, including five people to Houston to look at the effects of 52 inches of rain. He noted that while that happened, hurricanes Irma struck, Jose intensified and Maria developed from a tropical storm. Averill observed "There's never been a more important time for the work of this committee."

Averill turned the meeting over to Dr. Tim Reinhold, Chair of the Committee. Reinhold noted that he received comments and suggested editorial changes that the Committee will want to talk about. He added the Committee then needs to work through and strengthen the last few sections.

Reinhold turned the meeting over to Dr. Marc Levitan, Acting Director of the National Windstorm Impact Reduction Program (NWIRP) to discuss NIST's coordination of post-storm activities related to Hurricanes Harvey and Irma, and to present the FY17 NWIRP Coordinated Budget.

### **II. Hurricane Response and NWIRP Coordinated Budget**

Levitan provided a briefing on NIST's hurricane activities in support of its statutory responsibilities as lead agency for NWIRP, which include coordination of "all Federal post-windstorm investigations, to the extent practicable." A report was prepared for the Senate Committee on Commerce, Science, and Transportation, a copy of which was provided to the Committee, available at:

[https://w3auth.nist.gov/sites/default/files/documents/2017/09/18/nist\\_coordination\\_of\\_federal\\_post-storm\\_investigations\\_as\\_of\\_sept\\_12\\_201.pdf](https://w3auth.nist.gov/sites/default/files/documents/2017/09/18/nist_coordination_of_federal_post-storm_investigations_as_of_sept_12_201.pdf)

Levitan also reviewed the FY2017 NWIRP Coordinated Budget that was submitted to Congress in September (available at link below).

[https://w3auth.nist.gov/sites/default/files/documents/2017/09/18/nwirp\\_coordinated\\_budget\\_8-28-17.pdf](https://w3auth.nist.gov/sites/default/files/documents/2017/09/18/nwirp_coordinated_budget_8-28-17.pdf)

Levitan then turned the meeting back over to Reinhold. Reinhold stated that the hurricane windfield maps produced by Applied Research Associates (ARA) for NIST were very beneficial to field teams. That information, combined with NOAA imagery, helped enable study teams to get a fix on where to focus their efforts for a quick deployment. Reinhold added that mobile mesonets and observation platforms, like the

Texas Tech University sticknet and the University of Florida's 15m towers, played a critical role in providing data needed to support development of the post-event windfield analysis.

### **III. Committee Discussion on the Draft Assessments and Recommendations Report**

Reinhold led the Committee on a line-specific review of changes to the draft NACWIR report. The Committee discussion included questions, observations, and recommendations about:

- Adding a strong recommendation for shelters and safe rooms.
- The paragraph on Social Economics is focused on code adoption and enforcement. A broader allusion to mitigation strategies, such as land use, was suggested.
- Since the post-Harvey and Irma wind speed maps were so useful to teams that deployed to study the hurricanes, the Committee should recommend that this practice – of developing wind speed maps immediately after an event – be institutionalized, at least for Category 3 storms and higher.
- The Committee needs to specify this is for winds over land.
- A suggestion was made that NIST, as the lead agency on wind and wind risk reduction have a web site with wind-fields and hazard data linked together for easy access. Consolidating it would make things easier for researchers and the practitioner community. Converting wind speeds to meaningful numbers that folks working with building codes can use makes a lot of sense.
- Another suggestion was made to post the maps on the NHERI site. Levitan mentioned that they are currently available for download on the NHERI DesignSafe web site, under the Recon Portal.
- Levitan clarified that NIST has been exploring the concept of providing full wind speed time-history models calibrated against observed data. NIST will explore working with NHERI to create such an interface for that type of data, that will enable more sophisticated analyses of wind-induced failures.
- The Committee discussed technology transfer and agreed to include a statement that the Committee supports broad-based research projects that combine physical and social sciences to ensure that what comes out is used in appropriate ways.
- The Committee discussed how useful the NOAA imagery has been for both the public, who are extremely concerned about their housing and business, as well as scientists and emergency managers. It was noted that LIDAR is very helpful for getting a “birds-eye” view of damages along coastal areas both before and after the event. Having geo-coded and hyper-spectral imagery (vs. snapshots) is very valuable in informing codes in coastal landforms.
- The Committee discussed the FEMA section of the report. One member stated that it is impossible to work with FEMA to get data. They have struggled with it in their work with NIST and with independent researchers. If practitioners are

going to understand the full picture in terms of resilience and recovery, they need access to data. There are Institutional Review Boards (IRB's) and other ways to keep the data confidential or from being abused, and not allowing it to get "out there" in the public domain. It's such a goldmine of data, but FEMA won't make that data available.

- The Committee discussed the importance of addressing manufactured housing.
- The Committee discussed the issue of existing buildings and the recommendation to add this Strategic Objective which is included in the Recommendations and Revisions section of the draft report.
- Rainfall-induced flooding from hurricanes and its interaction with surge related flooding was also discussed, including its context in relation to Hurricanes Harvey and Irma. It was noted that any discussion of rainfall and recommending changes in the program should be specified as being "rainfall near the coast," to clearly describe the intended scope. In relation to adding rainfall related risks to the program, a major concern is that NWIRP is a small program by any federal standard. Adding something else could dilute the Program. It was suggested to add language to this effect and recommend against adding this objective to the Program unless Congress adequately funds the Program and provides additional funding for this potential objective.

#### **IV. Public Comment Period**

Levitan noted that no members of the public registered to be part of the meeting today. Reinhold asked if there were any members of the public on the phone, but there were none.

#### **V. Final Comments from Committee Members**

Reinhold asked the Committee members for any final thoughts they wanted to add before he pulls all the comments together into the final draft. Their responses were:

- Ashley said all of his comments had been addressed.
- Edwards thought the document was in good shape.
- Masters thought the draft was comprehensive, and that the Strategic Plan is a great start. He noted that as people look at the Strategic Plan and make decisions it will take on a newer form.
- Mehta said Hurricane Irma has made it clear that electrical infrastructure is an important component that needs attention, and we should add that to the report. Power failures result in huge economic losses, as well as human health risks (e.g. failed water and waste-water treatment plants). Looking down the road 10-15 years, he thinks there needs to be adjustments in the power system so there are smaller, decentralized systems to get power back quickly.

- Reinhold added that one of the trends that we didn't highlight is the distribution of energy production as more people move to solar. On the other hand, if not done properly rooftop solar panels can become dangerous debris harming people.
- Resio said we need to address problems with communication. The total lack of communications after a storm in emergency situations, and the inability to perform any logistical operations adds to the problems. Problems with major critical infrastructure should be mentioned in our report.
- Scott concurred with previous comments that the document reads well, and today's additions are useful. He noted we can always add more, but need to give Reinhold time to get it done.
- Smith concurred the document reads well, and added that it needs a footnote defining "code plus" and that it needs to address the importance of doing field studies after certain events to see how things performed or didn't perform. He suggested we might strengthen that in the document. He offered two additional questions that should be addressed:
  - FEMA has a number of design guides - are they adequate?
  - Did mitigation projects funded by the government do well?
- Finally, he added that the Committee should encourage deployment of teams to see what we can learn from major events.

## **VI. Adjournment.**

Reinhold noted that the Committee has one more meeting next Monday (9/25/17). Reinhold committed to turn around a draft as soon as possible, and that the Committee should work to finalize it on the call next Monday. He added that it will include an executive summary.

Reinhold adjourned the meeting at 11:40 a.m.