National Construction Safety Team (NCST)
Advisory Committee (Committee) Meeting
National Institute of Standards and Technology (NIST)
Gaithersburg, Maryland
December 10-11, 2013

Meeting Summary

Advisory Committee Members:

Jeremy Isenberg, Chair	AECOM
Ronny J. Coleman	Fireforceone
Paul A. Croce	FM Global (retired)
Susan L. Cutter*	University of South Carolina
Carlos Fernandez-Pello	University of California, Berkeley
Jeffrey L. Garrett*	CTLGroup
Anne S. Kiremidjian*	Stanford University
R. Shankar Nair	**exp** US Services Inc.
James R. Quiter	Arup
Sarah A. Rice	The Preview Group, Inc.

NIST Representatives and Guests:

Howard Harary	Acting Director, Engineering Laboratory, Designated Federal Officer, NIST
Eric Letvin	Director, Disaster and Failure Studies Program (DFSP), NIST
Jason Averill	Acting Chief, Materials and Structural Systems Division, NIST
Marc Levitan	Lead, National Windstorm Impact Reduction Program (NWIRP) R&D, NIST
Erica Kuligowski	Joplin Task Leader, Engineering Laboratory, NIST
Frank Lombardo	Joplin Task Leader, Engineering Laboratory, NIST
Long Phan	Joplin Task Leader, Engineering Laboratory, NIST
Dave Jorgensen	Joplin Task Leader, National Severe Storms Laboratory, NOAA
Jack Hayes	Director, National Earthquake Hazards Reduction Program (NEHRP), NIST
Stephen Cauffman	NIST
Anthony Hamins	NIST
Nancy McNabb	NIST
Nelson Bryner	NIST
Fahim Sadek	NIST
Michael Newman	NIST
Tina Faecke	Management and Program Analyst, NIST
Sonum Chaudhari	Administrative Assistant, NIST
Vivian Seager	Senior Administrative Associate, WJE
Matt Heymann	Applied Research Associates (ARA)

*Committee members not in attendance.

Summary of Discussions

I. Opening Remarks

Dr. Jeremy Isenberg, Chair of the Committee, opened the first day of the meeting on December 10, 2013 and welcomed the NCSTAC members and the NIST representatives to the meeting.

Dr. Howard Harary, Acting Director of Engineering Laboratory and Designated Federal Officer, read NIST's responses to the committee's recommendations in their 2012 report to Congress (http://www.nist.gov/el/disasterstudies/ncst/upload/NISTresponseToNCSTAC2012Recommendations.pdf).

The Committee asked about the status of H.R.2132, the Natural Hazards Risk Reduction Act of 2013.
NIST reported that the bill had been referred to the Subcommittee on Research and Technology, but no further action had occurred. NIST also described a related bill, H.R. 1786, the National Windstorm Impact Reduction Act Reauthorization of 2013.

The Committee asked about the behavioral/social science staffing within NIST.
NIST reported on the accomplishments of the behavioral science program and the new social science position at NIST to support the Program.

The Committee asked about the wildfire work that NIST has recently completed in Colorado. The Committee brought up the possibility of better coordinating the data to be stored in the repository and the data that is in NFIRS. The Committee then asked how the NIST repository effort is being coordinated with the National Association of State Fire Marshalls (NASFM) and about who controls the data at the International FORUM of Fire Research Directors.

II. Joplin Tornado Report

A. Overview

Dr. Marc Levitan, Lead, National Windstorm Impact Reduction Program (NWIRP) R&D, provided an overview and progress update of the NIST Technical Investigation of the May 22, 2011, Tornado in Joplin,
Missouri(http://www.nist.gov/el/disasterstudies/ncst/upload/NCSTACmtgDec2013LevitanJoplin.pdf).

The draft Joplin tornado report is available for public comment at: http://www.nist.gov/manuscript-publication-search.cfm?pub_id=914787.

The Committee asked if NIST had an estimate of how many comments that they expect to receive on the Joplin tornado technical investigation.
NIST responded that it does not have an estimate, but expects a fair number of comments given the strength of the recommendations NIST made in the draft report.

The Committee asked what else NIST can do to help implement the recommendations.
NIST responded that it can provide technical guidance, submit code changes, and partner with other agencies/organizations. Additionally, Dr. Jorgensen informed the Committee of activities related to the implementation of some of the recommendations within NOAA (National Oceanic and Atmospheric Administration), and that NOAA had released a statement supporting the NIST Joplin tornado effort.

B. Tornado Hazard Characteristics

Dr. Frank Lombardo, Joplin Task Leader, presented a summary of the tornado hazard characteristics associated with the May 22, 2011 Joplin tornado (http://www.nist.gov/el/disasterstudies/ncst/upload/NCSTACmtgDec2013LombardoJoplin.pdf).

The Committee asked how NIST established a region with respect to the spatially-based approach to tornado risk estimation.
NIST responded that there is concern that tornado risks to a community are underestimated when using the point-based probabilistic analysis methods. The spatially-based probabilistic analysis method presented in Chapter 2 of the draft report considers the area of a community (e.g., the City of Joplin) in relation to the tornado climatology of the surrounding region.

The Committee stressed the need for a risk-based map for tornado design of buildings and asked how NIST determined the sequence of structural failure for certain buildings during the tornado and whether the effects of aging infrastructure/buildings were considered in the structural performance evaluation.
NIST responded that the sequence of building failure was determined based on observations made during on-site inspection of failed buildings shortly after the tornado, interviews of building occupants, review of security camera video that contained information related to the failure sequence at some building, as well as structural analysis of the failed buildings (NIST obtained building plans and compute estimated failure loads and corresponding wind speeds for some buildings, which were used to confirm and/or refine the failure hypotheses). The NIST study did not consider the effects of aging on building performance.

A Committee member commented that structures are generally assumed not to weaken with age, although corrosion and deterioration can reduce strength. Thus it's reasonable that NIST did not consider the effects of aging in evaluating the performance of buildings in the Joplin tornado.

In the discussion that pertains to NIST recommendation 1 regarding wind speed measurement, a Committee Member stated that NIST probably wants to collect vertical profiles of wind velocities, not just at 10 m height. The recommendation should be rewritten to be more generic and not precise to a specific height. The Committee suggests changing the wording of the recommendation to "including near-surface".

A Committee Member expressed concern that they did not see mention of retrofitting older buildings in tornado areas in addition to the information on new construction in the report.

C. Performance of Buildings, Designated Safe Areas and Lifelines

Dr. Long Phan, Joplin Task Leader, presented on the performance of buildings, designated safe areas, and lifelines (http://www.nist.gov/el/disasterstudies/ncst/upload/NCSTACmtgDec2013PhanJoplin.pdf). He discussed the response of residential, commercial, and critical buildings, including performance of designated safe areas and the performance of lifelines as it relates to the continuity of operation of the buildings.

The Committee asked if the takeaway from Finding 11 is that the tornado hazard map is inadequate?
NIST responded that Finding 11 relates to the performance of structures with box-type construction such as those used in large retail buildings or school gymnasiums. Tornados are not considered in current building codes and standards for design of such structures. The code-level design wind speed is 115 or 120 mph for these types of structures in Joplin, which represents wind hazards from thunderstorms and other windstorms, but not including tornadoes. Wind speeds at the locations of the building failures referred to were likely greater than 115-120 mph. Structural failure collapses began with failed roof

systems that provided lateral bracing for the walls. There was no redundancy to keep the rest of the building from collapsing when the roof was lost. We cannot rely on the roof connection to protect the occupants from tornadoes.

A Committee Member commented on how they thought that more attention to design and retrofitting is needed for tornado resistance in buildings.

A Committee Member also commented on how it is problematic that there is no mandate on resisting uplift loads in building design as the buildings were not able to withstand the uplift forces due to the tornado.

The Committee asked how NIST determined what failed first in the building.
NIST responded that it was based on calculations from obtained building plans, field observations by NIST, interviews with people who were in the buildings, and in a few instances, information from surveillance videos.

The Committee asked why there was a loss of water pressure after the event.
NIST responded that there were thousands of leaks in the system after the event due to damage or destruction of homes and buildings that left water flowing from broken pipes in buildings, and uprooted trees that tore underground water lines. Broken gas lines presented a safety issue for the first responders.

The Committee asked about the communication system and how many cell towers were damaged.
NIST responded that twenty-one cell towers were damaged. Mobile cellular towers were brought in very quickly. This is an issue for first responders because many fire departments across the United States are using wireless devices for communication.

D. Emergency Communications and Public Response and Tornado Deaths and Injuries

Dr. Erica Kuligowski, Joplin Task Leader, presented on emergency communications, public response, and tornado deaths and injuries (http://www.nist.gov/el/disasterstudies/ncst/upload/NCSTACmtgDec2013KuligowskiJoplin.pdf). She reported on how NIST determined the pattern, location, and cause of fatalities and injuries, and associated emergency communications systems and public response.

The Committee asked why death certificates were issued by different states.
NIST responded that the state where the person died issues the death certificate. Some of the people injured during the Joplin tornado were taken to hospitals in Kansas and Oklahoma, where they subsequently perished.

The Committee asked what constitutes a false alarm. A discussion followed regarding how it is problematic that the public's perspective is that false warnings/alarms happen all the time and how that leads to an increased chance of them not taking heed of alarms in a real emergency.
NIST responded that the definition of a false alarm is when a tornado warning is issued and no tornado is verified by direct observation, and then explained the process that the National Weather Service (NWS) uses to issue a warning. When there is a false alarm, a tornado may have occurred, but there was no observer present or verification of the tornado.

The Committee asked if citizens of Joplin received the alerts via mobile or social media-based technologies.
NIST responded that at the time of the Joplin tornado, citizens of the area had to opt-in for alerts. Since the event, a new nation-wide system has been developed allowing users of cellular phones within a certain area surrounding the event to receive alerts automatically.

The Committee asked how the people died at the St. John's Regional Medical Center.
NIST responded that the cause of death was likely due to blunt force trauma caused by tornado debris/impact.

The Committee stated that Finding 45 is not specific to tornadoes. The Committee asked how many people over 60 years of age perished. The Committee stated that it takes a lot of effort to understand the text and suggests rewriting to clarify. The Committee asked about the cause of higher fatality rates among the elderly.
NIST responded that it was likely that people over 60 were not able to withstand their injuries and had a poor warning and/or support network.

E. Joplin Tornado Report Recommendations

Dr. Erica Kuligowski then presented the sixteen recommendations NIST made in Joplin Tornado Report (http://www.nist.gov/el/disasterstudies/ncst/upload/NCSTACmtgDec2013JoplinTeamRecommendations.pdf).

Recommendation #1
The Committee asked how this recommendation can be implemented.
NIST Response: Dr. Jorgensen explained the strategy within NOAA to implement this recommendation by placing numerous small radars on cell phone towers to provide more complete radar coverage.

The Committee thought the recommendation should be more definitive. They stressed the importance of identifying an agency to implement this and that it needs to be developed to the point that it is affordable so that it gets picked up.

Recommendation #2
The Committee asked how this recommendation relates to the repository.
NIST Response: The repository will house data for the small number of tornadoes that NIST investigates. Recommendation #2 is intended to expand data collection and archival for all of the tornadoes occurring annually in the US (over 1,200 per year on average).

Discussion followed that focused on the types of data that NOAA collects and how that is different than the building/infrastructure data that NIST wants to place in the repository. NOAA has the capability to implement this recommendation and needs to implement it.

Recommendation #3
The Committee agreed that the engineering design of buildings should be based on a spatially-based estimate of tornado hazards. The Committee stated that the area used for normalization of the spatially-based estimates of tornado hazards should be consistent (e.g., the estimate for Chicago does not currently use the same area as the estimate for Joplin). A Committee member remarked that if this recommendation is implemented, that it would lead to new code requirements for new construction.

Recommendation #4
The Committee asked if the American National Standards Institute (ANSI) would develop a standard for the Enhanced Fujita (EF) Scale and if the government would maintain it. The Committee also asked what the Plan B is for NIST if the American Society of Civil Engineers (ASCE) process doesn't move forward.
NIST Response: NIST described a proposal that has recently been submitted to ASCE to develop an ANSI/ASCE standard for estimation of extreme wind speeds in tornadoes, including improvements to the EF scale and potential incorporation of other methods (e.g., analysis of tree fall patterns). If ASCE doesn't accept the proposal, another standards developing organization (SDO) would be approached. The standard would not be maintained by the government, but rather by the SDO that developed it.

A member added that if this goes to the private sector to develop and a consensus process is used, that NIST may not get all that it intends to with this recommendation. Another committee member remarked that implementation of this recommendation would help improve the scientific basis for the EF scale.

Recommendation #5
The Committee suggested that this recommendation on development and adoption of standards for tornado-resistant design covered a broad range of topics and that NIST should consider breaking it into separate recommendations to facilitate ease of implementation. The Committee suggested separating into three areas - lifelines, residential construction and nonresidential construction. The Committee felt NIST would have a better chance of having the recommendations adopted if it did this.

Recommendation #6
The Committee suggested that NIST replace "risk-consistent" with "risk-balanced". The Committee also suggested that NIST replace the term "to ensure" here and in the other recommendations where it appears, because we cannot guarantee safety. One suggestion was to replace it with "such that".

Recommendation #7
The Committee asked why the recommendation does not include hospitals.
NIST Response: This recommendation may not apply to hospitals because if recommendation #5 was implemented, hospitals would already be required to remain operational during and after an event.

The Committee asked that NIST look at Recommendations #5 and #7 again and ensure that there is consistency throughout the recommendations section.

Recommendation #8
The committee suggested that NIST take out the comma after 'planning for'.

Recommendation #9
The Committee asked why NIST does not take this recommendation out and focus on just Recommendations 5 and 7 instead. They asked what the benefit of this recommendation is and warned that it could be controversial. The Committee also stated that NIST needs to clarify what it means by 'risk assessments'. A member raised concern of the possibility of lawsuits if wind refuge areas were designated in design drawings and then in a tornado event people die in the designated shelter area. Another member added that some facilities may get around t by designating a "best available refuge area" as opposed to taking the responsibility of a designed shelter area.
NIST Response: Recommendations 5 and 7 will require changes to construction and will take years to fully implement, particularly for existing buildings. Recommendation #9, to identify the best available refuge areas in buildings, can provide at least some benefits at very little cost in a much shorter time frame, until measures fully consistent with recommendations 5 and 7 are implemented.

Recommendation #10
The Committee questioned the need for this recommendation to if it is considering all of the other recommendations, particularly Recommendation #5. The Committee felt that NIST will likely receive a lot of resistance to this potential code change and recommends that the word "prohibited" not be used.
NIST Response: Roof aggregate contributed to the windborne debris field that caused damage to building envelopes.

Recommendation #11
There were no comments to NIST on this recommendation.

Recommendation #12
There was significant discussion on what constitutes a 'tornado-prone' area and the Committee stated that this may need to be clarified in the final report.

Recommendation #13
The Committee asked the following: (1) Does this recommendation mean more warnings? (2) Does this propagate the false alarm issue? (3) What does NIST mean by 'timely response'? and (4) Will this recommendation that is aimed at better messages in a timely manner have unintended consequences? Significant discussion followed regarding clear, consistent, and accurate emergency communications. In the Joplin event, there was confusion with the sounding of the second siren as some misunderstood it to be an "all clear". Concern was expressed with how the public associates the sounding of the siren with testing. Voice warnings were considered to be much more effective than alarms or sirens. The Committee stated that the word 'recognizable' should be added and a different phrase for "false alarm" should be coined as that phrase is already defined and understood differently by people in the fire field.
NIST Response: While false alarm has one meaning in the fire area, it is also an accepted term in meteorology, albeit with a somewhat different meaning. A false alarm for a tornado warning means that a warning was issued by the National Weather Service but it was not followed by a verified tornado. False alarm rates for tornado warnings are one of the performance metrics NOAA is required to report to Congress.

Recommendation #14
The Committee asked NIST to review the use of the terms 'widely' and 'maximize' as they may not be the best words to use. The Committee stated that the most important thing is that the emergency communication is deployed and effective.

Recommendation #15
The Committee stated that this research should not be just limited to tornadic events because people act the same way with different types of disaster events. The Committee suggested changing the wording to place an emphasis on the factors and not the research. A member suggested having a "tornado day" as an educational event similar to the Great California ShakeOut that is used to raise public awareness for earthquake preparedness.

Recommendation #16
The Committee suggests that the recommendation be rewritten more strongly to make it a 'true' recommendation. One possible change would be to simply put a period after "… real-time basis." and end the recommendation there. There needs to be more discussion on the term 'false alarm'. A member stressed the importance of educating emergency managers on how to assess and communicate the level of risk so that the public has an accurate perception of the risk and reacts appropriately in an emergency situation.

III. Disaster and Failure Studies Program Updates

On December 11, Mr. Eric Letvin provided an update on the work of the Disaster and Failure Studies Program over the last year (http://www.nist.gov/el/disasterstudies/ncst/upload/NCSTACmtgDec2013Letvin_DFS-Overview.pdf). He reported that NIST had updated its decision criteria that provided a rational basis for evaluating whether NIST should conduct a study under NCST authority. The revisions in part reflected previous discussions with the National Construction Team Advisory Committee. The updates specifically broaden consideration for, and give greater weight to, damage that causes loss in building functionality. This loss of functionality directly affects the resilience of the community. Eric Letvin reviewed the six questions addressing general principles that will be used to aid in this process.

A Committee member asked if these questions are meant to cover wildland urban-interface (WUI) fire-related incidents and Letvin responded that the decision criteria covers all types of hazards including WUI fires. The Committee members were especially interested in the question "Do we have sufficient resources (people and funding) to support a study?" and the costs for conducting such studies. NIST officials noted that resources were always an issue in considering whether or not to undertake a study and they reviewed the variety of options when the availability of sufficient funding was a problem. These could include making a request for additional funding as part of a larger supplemental disaster assistance proposal that might be made by the Administration. Other options include identifying funding that might be available at the Engineering Laboratory or NIST level. Costs of studies were reported to vary greatly, and included staff expenses as well as contractors if needed; even information technology and graphics expenses could be very large for studies undertaken by NIST.

Eric Letvin noted that advances in technology including reporting mechanisms such as social media (notably Twitter feeds) and Wikipedia as well as the reports coming from traditional news media are an increasingly valuable tool in helping NIST to answer questions about what new information was likely to be gained if the agency were to undertake a study. Those media channels also were enormously helpful in conducting NIST's investigations, as demonstrated in the Joplin study.

Eric Letvin provided scoring for nine disasters during 2013 and reviewed NIST's decisions based on that scoring. The Committee was especially interested in NIST's decision not to study the Yarnell Hill Wildfire (in Arizona on6/13). NIST officials explained that this event's outcome was determined to be tied closely to firefighter tactics in combating wildland fires, an area in which the agency lacked enough relevant expertise to make a major contribution. A brief discussion followed about NIST's past involvement in incidents involving firefighter-related tactics and deaths. Another discussion point addressed a recent proposal by the National Fire Protection Association (NFPA) and the International Association of Fire Chiefs (IAFC) for a blue ribbon panel to address Wildland-Urban Interface (WUI) challenges, and the degree to which NIST might become more active in filling the gaps in WUI knowledge if additional resources were available.

Eric Letvin also informed the Committee that an Engineering Laboratory Management Memo providing internal guidance regarding the Disaster and Failure Studies Program was revised, replacing the 1999 version. This memo, and an accompanying draft SOP document, will help to ensure clear processes for making decisions regarding initiating, planning, and executing disaster and failure-related studies and activities.

The Committee was provided with an update on NIST's activities following Hurricane Sandy. In early FY 2013, NIST assigned a staff member (Dr. Therese McAllister) to participate in the Federal Emergency Management Agency (FEMA) Mitigation Assessment Team (MAT) study to examine the storm surge

and flood effects from Hurricane Sandy (October 2012) on critical facilities in the affected area (New York and New Jersey). The MAT report was released on November 27, 2013, and includes findings contributed by the NIST staff member. Committee members had several questions about the scope of work and the findings. Letvin described NIST's work with the MAT as a good example of the decision criteria being applied to disasters. In this case, NIST contributed specific expertise to a study that was much broader and larger than would have been appropriate for NIST to undertake on its own. Beyond contributing expertise to the MAT, Letvin said that the findings will provide additional value as a case study for NIST research on community resilience.

Eric Letvin reported on one recent significant code change activity based on the NCST-based World Trade Center investigation. A new ASCE/SEI Standards Committee ("Disproportionate Collapse Mitigation Standard") has been established as a result of NIST's recommendation regarding progressive collapse. That committee plans to have a standard drafted within three years.

Eric Letvin and staff also informed the Committee that based on recommendations from NIST's Charleston Sofa Super Fire (a non-NCST) study, several code changes were moving through ICC's Code Technology Committee. One proposal that would require risk-based periodic fire safety inspection was withdrawn by the relevant ICC committee; this issue is likely to be pursued by others, the Committee was told. A Committee member suggested that this proposal might more appropriately be embraced by state legislatures rather than by the ICC.

Letvin updated the Committee on NIST's progress in developing a Disaster and Failure Events Data Repository that will be an archival database of significant hazard events (http://www.nist.gov/el/disasterstudies/ncst/upload/NCSTACmtgDec2013LetvinRepository.pdf). The repository, which is accessible on NIST's website, also will help ensure that this valuable information is organized and maintained to enable study and analysis of, and comparison with, subsequent severe disaster events. The repository will contain information gathered during NCST investigations as well as other NIST led studies. It may also hold information from non-NIST events.

The data repository is being established in three phases:

Phase 1 (launched August 2011) includes data from NIST's six-year investigation of the collapses of three buildings at New York City's World Trade Center (WTC 1, 2 and 7) as a result of the terrorist attacks on Sept. 11, 2001.

Phase 2 made significant progress in FY 2013, including major development work on database software from Purdue that will offer enhanced features and enable easy and appropriate accessibility. The data repository also will support the National Earthquake Hazards Reduction Program (NEHRP). The repository next will be populated with datasets from the 2010 earthquake in Chile and the 2011 Joplin, MO, tornado investigation that will serve as a pilot for this new software. NIST plans an initial release of the Chile and Joplin datasets on the NIST website in FY 2014.

Phase 3 includes the implementation plan for the repository. This includes:

1. Finalizing user requirements and the creation of a system design document;
2. Developing standard data collection systems for different kinds of events;
3. Selecting the operating platform based on user requirements;
4. Populating the repository with selected high-impact data from historical and future events;
5. Developing a plan to maintain, update, operate and improve accessibility of the repository; and,
6. Establishing a process for stakeholder outreach.

In addition to providing high-value information for researchers and the building community, the repository will speed NIST's response to public requests for information, Letvin told the Committee. He also described NIST's staffing plans to support the repository.

Mr. Nelson Bryner described and demonstrated NIST's iPhone and tablet-based applications for collecting WUI data and explained how this information would be integrated within the repository's structure. The Committee asked multiple questions about the relationship of the WUI application to data formats required by the National Fire Incident Reporting System (NFIRS).

Several Committee members asked about NIST's overarching strategy for the repository, and expressed concern that the inclusion of data from non-NIST studies might overpopulate the repository and actually cause it to be less, rather than more, useful. The discussion on this topic included detailed questions about how the repository would be managed, suggestions that NIST provide clear guidance to those seeking to provide data in terms of requirements, and a verbal recommendation that NIST should have a clear strategy going forward for how inclusive this database would be. Eric Letvin said that the discussion and ideas were helpful and told the Committee that these issues would be addressed in Phase 3 of the program.

IV. NCSTAC Discussion

The Chair asked Committee Members Ronny Coleman and Carlos Fernandez-Pello to draft bullet points on the wildland urban-interface (WUI) and Shankar Nair to draft a statement to Tina Faecke (NIST) before Christmas.

The Committee Members asked NIST to provide input to ASCE7 and to develop a tornado hazard map. The Chair endorsed the idea of NIST developing a tornado hazard map and suggested that NOAA would be a good and appropriate partner for them.

The Committee Members discussed the protocol for the alert systems and how to get the right information into the hands of the decision makers. There needs to be a standard nationwide protocol and use of new technologies such as reverse 911 and improvement of systems for getting people to safety quickly with timely alerts and few false alarms. They agreed on the need to educate the public and the need for standards and protocols to be in place and discussed how to teach a standard response plan.

A Committee Member commented on how the NIST Recommendation # 16 read more like a request for funding instead of a plan.

A Committee Member raised concern about the data repository and how maintaining it will become increasingly cumbersome. They suggested that it be used for comprehensive events data collection with links to data sets instead of all data being individually tagged, which in their opinion, would make it more manageable and use fewer resources. They noted that FM Global uses an event based system successfully.
NIST Response: NIST plans to meet with the National Science Foundation (NSF) in 2014 to learn how they handle their data management and to see if they have any recommendations for effective data management for NIST.

The Chair asked NIST about who makes the decisions regarding the data repository.
NIST Response: Letvin responded that as the Director of the Disaster and Failure Studies Program, he makes the final decisions, but others contribute to the decision making process. NIST initially tried to

hire one person to assist with the data repository, but it was too broad a task for one person. NIST plans to hire three people, each having as part of their duties to assist with the data repository in the future.

The Chair asked how NIST is designing the NIST website with IT Personnel so that it will also be intuitive and user friendly for architects and engineers to use.
NIST Response: Letvin acknowledged that it is a challenge to balance having the NIST website developed with IT Personnel and make it user friendly to architects and engineers. They are working with Purdue and it is a give and take process and involves much collaboration. They tested this with the Chile data set and had good feedback. Marc Levitan (NIST) is the lead for the Joplin data set.

A Committee member commented that Eric Letvin was managing the data repository well and that they understand the challenge behind trying to please everyone with a task this huge. They suggested that NIST take advantage of data sets that are collected from other agencies/groups, but another Committee Member disagreed as they thought this would be a shift away from what was agreed upon. Another Committee Member suggested using only NIST data as that would limit the events and make it more manageable.

A Committee Member suggested linking the NIST website with another entity such as NSF. Another Committee Member responded by saying if NIST did that, they would have to post a disclaimer on their website.

The Chairman asked if NIST envisions publishing a set of data collection standards and if they did, would they post it in the NIST repository.
NIST Response: Letvin said yes, but they would have to do this for flood, wind, fire and earthquakes. Right now they have just completed the event data repository for WUI. He added that for the repository to be successful, this needs to be done for all disaster types, which is part of Phase 3.

A Committee Member mentioned that there were six recommendations last year and that lifelines remained an important recommendation this year.

Eric Letvin asked how the Committee Members planned to submit their comments on the Joplin tornado investigation draft report. The Chair asked the Members to submit their comments individually.

The Chair thanked the Committee members for their assistance in arranging this meeting and stated that they were very impressed with the progress that NIST has made. The Chair asked if another meeting was scheduled before this time next year and the Committee stated their preference in meeting in the Fall instead of December.