

Regional Stakeholder Workshop Summary

Recommendations for a National Levee Safety Program Hosted by the National Committee on Levee Safety Augusta, Georgia

7 December 2010

I. Purpose of Workshop

The National Committee on Levee Safety (NCLS) held a one-day workshop to share information about its recommendations to Congress for a proposed National Levee Safety Program (NLSP). The NCLS invited representatives from local and state agencies and elected officials who are engaged in levee safety issues. In addition, the workshop invited levee owners and operators, planners, emergency managers, local and regional business interests, environmental interests, economic development interests, public health and safety interests. The objectives of the NCLS workshop were to:

- Learn more about the NCLS and their recommendations for a NLSP;
- Discuss the implications of adopting the NCLS recommendations for local and state governments and other stakeholders; and
- Provide feedback to the NCLS on the recommendations.

Congress created the NCLS to develop recommendations for a NLSP, including a strategic plan for implementation of the program. The NCLS adopted the vision of an involved public and reliable levee systems working as part of an integrated approach to protect people and property from floods, and has been working toward this goal since October 2008. The NCLS recommendations for a NLSP are based on three central concepts:

1. Leadership via a National Levee Safety Commission that provides for state programs, national technical standards, risk communication, and coordination of environmental and safety concerns;
2. Strong levee safety programs in all states that, in turn, provides oversight and critical levee safety processes; and
3. A foundation of well-aligned federal agency programs and processes.

II. Opening Presentation

A. Fred Russel, City Administrator, Augusta and Tom Robertson, Cranston Engineering Group

Fred Russel welcomed participants and expressed appreciation for holding the meeting in Augusta. Tom Robertson discussed issues associated with levee compliance determinations and safety evaluations. He provided a brief background on flood control policies and programs over time, including more recent initiatives like Federal Emergency Management Agency (FEMA) flood map modernization and National Flood Insurance Program (NFIP) reform efforts.

Mr. Robertson outlined the Provisionally Accredited Levee (PAL) process, which includes the following steps:

- FEMA sends letter to levee owner outlining documentation requirements
- Levee owner provides documentation indicating that the levee is compliance with 44 CFR 65.10
- FEMA and levee owner enter into a PAL agreement
- The area landward of the levee is mapped as Zone X (shaded)
- The levee owner has two years to provide necessary documentation

Mr. Robertson explained how Augusta approached the PAL process using a well-qualified team of engineers. Mr. Robertson indicated that there is a tremendous amount of data and information that goes into the analysis process and that if this data collection and analysis is done well, the approval process can go quickly, though this is not often the case.

III. Introduction and Update on NCLS Activities – Eric Halpin, Les Harder, and Rod Mayer (NCLS Members)

Members of the NCLS provided an overview of the history of levee development in the United States, including the factors that led to the need for a NLSP, the lack of awareness about the risks that levees pose, the charge and membership of the NCLS, and key points included in the 20 recommendations further described in the report, *Recommendations for a National Levee Safety Program: A Report to Congress from the National Committee on Levee Safety, January 15, 2009*. NCLS members indicated that copies of the report, information papers, presentations from the workshop, and other information about the NCLS can be found on the NCLS website, www.leveesafety.org

Following the brief question and answer session and a networking lunch, participants were asked to choose three out of five topics for a 45-minute, breakout group discussion. These five tables represented clusters of the key recommendations (20 in total) made by the NCLS. NCLS members at each of the five breakout tables provided a brief introduction to the recommended elements of a NLSP and moderated an open-ended conversation with workshop participants, answering questions, soliciting feedback, and providing additional information. Following the conversations, members of the NCLS shared some of the major themes discussed at the tables.

A summary of the comments and discussion are included below. The comments and questions are organized as shown by the below listed categories. The comments are organized by topic regardless of the tabletop session in which the comment was made.

- A. Create a National Levee Safety Program and state programs
- B. Shared Risk/Shared Responsibility: Requirements for risk-based flood insurance and addressing concerns about liability
- C. Harmonize environmental protection and levee safety
- D. Create a national Levee Rehabilitation, Improvement, and Flood Mitigation Fund

Following the table-top breakout discussions, NCLS members summarized the key themes from each breakout topic and are summarized below:

IV. Comments, Questions and Suggestions Related to the Recommendations for a National Levee Safety Program

A. Create a National Levee Safety Program and State Programs

- Participants noted pros and cons to a single agency having control of a NLSP versus multiple agency forums.
- Participants noted that it is important that all stakeholders have a voice.
- State and local governments are not very concerned with how the program is organized as long as it is effective.
- It was recommended that the National Dam Safety program should not be used as a model for the NLSP.
- Participants noted that federal agencies may be reluctant to participate and contribute to a NLSP and mechanisms to incentivize participation will be needed.
- Development of national standards and providing uniformity is the appropriate role for a national board or commission. One participant was unclear how the proposed NLSP would be different from the programs and activities already in place by FEMA. This comment underscored the need for greater education and awareness.
- When participants were asked what might encourage states to participate in the proposed NLSP, they suggested the following: funding to support positions and activities, lower flood insurance rates for participation in the program, and changing grant and loan cost-sharing criteria. It was noted that states that do not have large populations living behind levees, there may be a lack of support for participating in levee programs. Participants suggested that creating incentives that reach beyond what is immediately behind a levee would be helpful.
- Participants noted that there should be regulatory requirements and national standards.
- When asked if there are opportunities to combine levee and dam safety programs, participants noted that there are similarities and differences; one felt that levee safety program was going to be an unfunded mandate and that duties may overwhelm currently over-worked and under-resourced dam safety programs.
- Participants suggested that the appropriate minimum requirements for a state program should include enabling legislation to regulate levees (especially at the local level) and certification mechanisms.

B. Shared Risk / Shared Responsibility: Requirements for risk-based flood insurance and addressing concerns about liability

- Overall, there are lingering liability concerns, but participants were confident that a court could distinguish between controllable and uncontrollable factors. In general, national standards are deemed favorable as long as regional variables are considered in their development.
- National standards would likely reduce exposure to liability issues.

- It was recommended that mechanisms be in place to allow municipalities to adopt standards in instances where states do not adopt national standards.
- Insurance is viewed as an important mechanism to help raise risk awareness.
- Concern was expressed that paying taxes for levee maintenance and requiring flood insurance may be perceived as double charging the taxpayer; risk communication is critical to clarifying this issue.
- Assessing the risk of unaccredited levees will be challenging.
- Participants expressed concerns about requiring land owners to purchase federal flood insurance in instances where property owners choose to insure their property privately and forgo federal disaster assistance. Participants discussed whether such landowners would be required to have federal flood insurance. The NCLS members explained that the intent is to provide flood insurance for those who need it and to implement a phased approach for complying with this mandate for those who are unable to afford insurance premiums. Some participants suggested that insurance premiums can contribute funds to levee improvement projects.

C. Harmonize Environmental Protection and Levee Safety

- Some participants expressed concern about the development of new levees and increased residential housing and business development behind existing levees.
- Participants acknowledged that while environmental interests may not be as prominent in the Southeast as they are in other parts of the country, there is a focus on aesthetics and public access. Participants raised concerns about environmental justice related to allowing public access to amenities that may have developed on or near the levees.
- Communication with the public needs to be addressed to help clarify that the original intent of levees was for flood protection and that public safety is a critical concern when considering environmental issues.
- Several participants noted Endangered Species Act (ESA) issues that arise from vegetation on levees and that a national program needs to consider impacts related to the construction of levee systems on endangered species and public safety.
- Aligning federal programs and authorities and encouraging more coordination at the state/local level was emphasized by participants.
- Participants thought that the recommendation related to environmental issues was generally favorable, but there was also agreement that work is needed to streamline local processes around environmental decisions.
- Participants suggested that there may be existing lessons learned available from corporate interests that have previously dealt with harmonizing environment and public safety issues (e.g., public utilities).

D. Create a National Levee Rehabilitation, Improvement, and Flood Mitigation Fund

- Public awareness is a critical component of developing a program and a fund.
- Participants suggested several existing programs that could be models for a fund, including the Pre-Disaster Mitigation Competitive grant program, the USACE Dam Safety high hazard dams, Leaking Underground Storage Tanks (LUST) program, and Integrated Hazard Risk Mitigation.
- Life safety should be the primary criteria for funding ranking.
- A split funding arrangement was suggested with a certain amount delivered to each state and the remaining funds delivered to criteria-based project needs.
- It was noted that equity issues are relevant if property values are part of the criteria in prioritization.
- The levee inventory and database need to be completed before analyzing the funding criteria for specific levee needs.
- Including points on levee safety in the Community Rating System (CRS) would incentivize participation from states.
- Liability issues need to be addressed before states will actively participate.
- The NLSP should be available to participating states as well as municipalities, water districts and levee districts.

Appendix A: Augusta Georgia Regional Stakeholder Workshop Attendees

Ken Beckman, Fort Bend Flood Management Association

Jeff Beriswill, BCI Engineers & Scientists, Inc.

Larry Boshell, City of Northport, Alabama

Keith Braswell, Engineering Department Bib County, GA

Ayana Brown, USDA, Natural Resources Conservation Service (SC)

Frank Carl, Savannah Riverkeeper

Bill Causey, City of Macon, GA

Don Chamblee, Richland County Department of Public Works

Dr. Maureen Corcoran, U.S. Army Engineer Research and Development Center

Sam Crampton, Dewberry

Jim Daly, Golder Associates Inc.

Perry Dukes, S&ME, Inc.

Mike Eckmann, Eckmann Enterprises, LLC

Trent Ferguson, U.S. Army Corps of Engineers, South Atlantic Division

Ben Foreman, U.S. Army Corps of Engineers, Savannah District

Alan Giles, Georgia Department of Natural Resources, Floodplain Management Unit

Bob Goehring, ECS Southeast, LLC

Katy Goolsby-Brown, FEMA Region 4, Mitigation Division

Fred Halterman, URS Corporation

Erik Hammarlund, W. R. Toole Engineers, Inc.

Marty Hawkins, City of Chattanooga, TN Engineering Division

Bob Howard, South Florida Water Management District

Cliff Howard, Engineering Department Bib County, GA

Powell Hughes, U.S. Army Corps of Engineers, Wilmington (NC) District

Bryan Kamm, Coastal Caisson Corp.

George Kelley, Structural Concepts

Marvin Land, Engineering Department Bib County, GA

Bob Laura, Michael Baker Corporation

Brad Loar, Mitigation Div - FEMA Region 4

Hameed Malik, City of Augusta, GA

Kirk Milam, City of Rome, GA Department of Public Services

Albert Neumann, Layne GeoConstruction

Stephen Partney, South Florida Water Management District

George Patty, Augusta-Richmond County Planning Commission

Jeffery Powers, Florence & Hutcheson, Inc.

Randy Rabb, U.S. Army Corps of Engineers, Jacksonville District

Tom Robertson, Cranston Engineering Group, PC

Helen Rucker, Tennessee Valley Authority

Fred Russell, City of Augusta, GA

Ban Saman, Atlantic Energy and Engineering

Bob Scott, Georgia Department of Natural Resources, Floodplain Management Unit

Art Sengupta, South Florida Water Management District

Dayton Sherrouse, Augusta Canal National Heritage Area

Tom Shillock, Georgia Department of Natural Resources, Floodplain Management Unit

Phil Smith, U.S. Army Corps of Engineers,
Savannah District
Steve Stine
Dennis Stroud, City of Augusta Public
Services Department
Michael Taylor, AECOM
Terri Turner, City of Augusta, GA; ASFPM
Region 4 Chair
Garrett Weiss, City of Augusta, Engineering
Department

Eldridge Whitehurst, Cranston Engineering
Group, P.C.
Scott Williams, Cranston Engineering Group,
PC
Paul White, URS Corporation
Chief Howard Willis, City of Augusta, GA
Division of Emergency Management
Yongqing Yu, Georgia Department of
Natural Resources, Floodplain
Management Unit

Members of the National Committee on Levee Safety

Eric Halpin, NCLS Vice Chair, USACE
Sam Riley Medlock, Private Sector
Representative
Mike Stankiewicz, State Representative

Dusty Williams, Local/Regional
Representative
Carol Sanders, NCLS (Support)
Liz Rettenmaier, Council Oak (Support)
Nick Brubaker, Council Oak (Support)

Appendix B: Breakout Group Summaries

The following summarizes the discussions among the breakout tables. The breakout session served as an opportunity for the NCLS to solicit feedback from participants on the Report's recommendations, answer meeting participants' questions, and clarify recommendations for a NLSP.

The suggestions and ideas received during other regional stakeholder workshops will be used to inform NCLS member staff as they shape their implementation strategy for establishing a NLSP.

Create a National Levee Safety Program and State Programs

Participants noted the following:

- There are pros and cons to single agency maintaining control of a NLSP as compared to having multiple agencies sharing control.
- If the NLSP is managed under a single agency, there should be a single point of contact for program stakeholders.
- The organization of the NLSP is less important than clarity of function.
- It was recommended that the National Dam Safety Program not be the model for a NLSP; there have been difficulties in the past in aligning federal agencies in collaboration on a specific set of issues.
- Regarding federal alignment, the Tennessee Valley Authority (TVA) Section 26 relating to obstruction to drainage should be considered.
- National standards should be developed for design, construction, operations and maintenance, and safety.
- Some participants indicated that they were unclear how the proposed NLSP would differ from FEMA's current mandate.
- In order to incentivize state participation, a national program should provide funding for positions and activities of a state program.
- Lower flood insurance rates for approved programs may serve as an incentive.
- Changing grant/loan criteria and/or adjusting cost-sharing arrangements would incentivize participation from states.
- In Georgia, there are not large urban populations living behind levees so generating the political will to support a state program may be challenging.
- If there are instances where a state program does not exist, there should be a mechanism that allows communities access to levee safety funding from the program.
- Participants discussed what minimum requirements for state programs may include and agreed on several including the following: (a) enabling legislation to regulate, (b) certification mechanism (e.g. similar to water quality certification). Several participants commented that levee safety regulatory authority should originate at the local level.
- Participants noted there are similarities but also many differences between levee safety and dam safety, and therefore combining the programs may not be ideal.

- Concern was raised that if levee and dam safety programs were combined, that the new levee safety duties would be given to overworked and under-resourced state dam safety staff.

Shared Risk / Shared Responsibility: Requirements for risk-based flood insurance and addressing concerns about liability

Participants noted the following:

- Liability issues related to levee accreditation needs to be resolved.
- Levee owners who share data with others will need assurances that sharing of information will not impact their liability. National standards for the construction and operation and maintenance of levee systems will help reduce exposure to liability issues for private engineers.
- There needs to be clear processes standards for risk-based flood insurance. Actuaries and engineers should participate in the development of those standards.
- The impacts of national standards must be acknowledged. For example, states that do not adopt the standards may face liability and may be ineligible for federal funding.
- There should be a mechanism for municipalities to adopt standards and in states that do not choose to adopt standards. If states do not have programs or do not adopt standards there should be a way for municipalities to come into compliance.
- In developing standards, regional variables must be considered, as conditions in the Everglades are different from conditions in Sacramento, etc.
- In states such as Florida where laws explicitly hold public safety as paramount, the granting of a permit by the state would establish possible future liability by the state. Public understanding of risk is a critical aspect to levee safety.
- The NCLS recommended the development of engineering standards for levees though these recommendations do not address many other related standards such as development or construction behind levees.
- The scope of the NLSP should be broadened beyond levees to include the entire floodplain which would be evaluated as one interrelated system. Participants suggested a broader program name such as 'National Floodplain Management Program' may be prudent.
- Risk-based insurance has merit but variability must be acknowledged; for example, a corn-field is substantively different from a residential home.
- Awareness is important; for example, there is always a possibility that a levee will fail.
- Given that non-accredited levees are currently shown on FEMA maps, participants questioned whether it would be worth the cost and labor required to conduct that analysis in order to potentially reduce insurance premiums.
- There are drawbacks to group flood insurance policies, including instances where low-risk taxpayers are paying for some high-risk taxpayers.
- Without a phased-approach, rising insurance premiums could dramatically impact the poor.
- Instituting taxes to pay for levee accreditation and requiring insurance for landowners who live behind the levee is perceived as double tax burden by the public and underscores the importance of public awareness and education to understand the risk to the public.

- Requiring insurance would likely require legislation at the state or federal level.
- Risk-based insurance would greatly contribute to awareness and education.
- To illustrate risk to the public, it would be helpful to outline scenarios for risk and insurance premiums with levees at different protection levels and without a levee.
- Texas places an additional tax on each flood insurance policy to support a state flood risk reduction program. Participants discussed whether flood insurance premiums may be used to improve levees.
- Community-based insurance programs would be difficult for small communities to administer.
- Currently, insurance requirements are only enforceable for landowners who have federally backed mortgages such that if someone owns their home and property free of any loan, they cannot be forced to purchase flood insurance.
- The insurance market needs to be expanded to create greater competition.
- Flood insurance premiums should be based on actual flood risk so that there would be a clear disincentive for developing and owning property in flood-prone areas which are deemed a higher public safety risk.
- A move toward risk-based insurance needs to be phased in and must include mitigation benefits (e.g. NFIP CRS incentives).
- Participants agreed that the federal government is involved in flood insurance because the risk is too high for private companies to provide coverage.

Harmonize Environmental Protection and Levee Safety

Question: Loss of habitat and ecosystem damage often results from levee construction. Is there a movement to slow the development of new levees and address the environmental impacts associated with levee systems?

NCLS Response: It was noted that new levees are not part of the current scope of the NCLS, but NCLS members indicated that new levees may need to be incorporated into future NCLS considerations. Participants noted that government agencies are generally focused on addressing current levee deficiencies and are not as concerned with building new levee systems, which are expensive. Decommissioning levees may be key to lowering risk.

Comment: Participants noted that the Dutch government has a *Room for Rivers* program that is focused on moving people out of the floodplain to allow for natural riverine processes such as meander to continue unabated by infrastructure development. Participants noted that the Room for Rivers program is a \$3 billion program. Participants noted that the United States government system is different than others in that it does not have a role in land development. That is delegated to states, and states delegate it to locals.

Question: What about federal programs that impact local land use decisions?

NCLS Response: Yes, some federal program policies do. The NCLS is reviewing these programs and policies to ensure that, where possible, federal programs encourage better land use decisions.

Question: Have you encountered local nature groups that do a lot of nature watching along the levees? Vegetation removal results in a clash between levee managers and environmental groups. Is there something in the recommendations about that?

NCLS Response: An important aspect of this relationship is ensuring that the public understands the purpose and function of the levee system; when flood events are seldom experienced, people view the levee within the context of the natural resources in and around it rather than the function that the levee itself is intended. If a community expended federal funds to create a park that is located on or near a levee, removal of vegetation would likely require mitigation. Levees are not intended to be multi-purpose. In Augusta, the levee was built for flood protection, but is currently used as greenspace 'Riverwalk'.

Comment: The NCLS needs to be aware of the environmental justice impacts of requiring flood insurance among low income populations.

Question: In terms of environmental protection, is the NCLS considering what mitigation may be required as a result of constructing levees?

NCLS Response: That is what the recommendations are focused on – getting the right people together to determine what the right solutions are (including mitigation). The NCLS is looking at what, from a national level, we can agree on and incorporate into a national program.

Comment: Building codes need to be revised so they don't allow people to build slab on grade or to the 100-year level behind levees. Houses that survived Katrina were on stilts. It cost them more initially, but the house was still standing. We need to look at what we're going to build behind the levees and look at codes so that everything that is behind the levee isn't destroyed if it fails.

NCLS Response: Building codes are referenced in the regulations. It's a state or local issue. We do see industry looking at what happened in New Orleans and they are taking steps to adjust standards. We want to stand up the capacity in the states by giving them incentives to do the right things, including developing appropriate building codes.

Comment: There is some economic benefit to communities having features like a tree-lined river walk along a levee. In some cases, trees that were planted along the walks were planted to recover endangered and/or threatened species. Communities might lose this economic benefit if the trees are removed along the river walk, and there may be impacts to endangered species.

NCLS Response: Any of these types of changes have to be considered under the National Environmental Policy Act (NEPA).

Question: Has the United States Fish and Wildlife Service (USFWS) been participating in NCLS activities?

NCLS Response: They have been part of the review group. Part of the intent behind the recommendations is getting the right people to the table when needed.

Comment: A participant indicated that several eagles had been observed nesting in mature trees located on levees. Removal of these trees to increase the structural stability of the levee but may also compromise environmental interests.

NCLS Response: People need to understand the potential consequences for not addressing the structural integrity of a levee. Breaches are not good for the environment either and may be more impactful than removing some trees.

Question: Our flood risks are controlled largely by a dam upstream. Why is our river a concern?

NCLS Response: The Thurman dam's ability to handle storm events is limited. It could overwhelm the system. There is also 20 miles of basin between here and the dam that is unregulated.

Comment: One of the environmental issues we're hearing about more is environmental justice in terms of access. If public funds are paying for something, everyone should have access to the amenity that it provides. People are getting more vocal about demanding access.

Comment: Relic Trillium is an endangered species and slopes of levee are ideal environment. It is very small and deer love it. How do you control other species without harming that plant? Participants' noted difficulties associated with the removal of gopher tortoises.

Question: Don't trees provide some environmental benefits? Among other things, they can provide habitat for birds that may prey on burrowing animals.

NCLS Response: This issue has been challenging. Our recommendations are to bring biologists to the table so they are involved in and can support the development of an appropriate solution.

Comment: Sometimes the public's assertions about endangered species mask their real concerns about having something done in their neighborhood.

Question: Have there been any discussions about levees as historical structures?

NCLS Response: We have heard from the archeologists, but not the public. Usually, we have to avoid historic areas if purely for recreational purposes. State Historic Preservation Offices (SHPOs) have not latched onto this.

Comment: Some people in Augusta want to remove levees to improve their view of the river.

NCLS Response: Removal of a federally constructed levee system would require an act of Congress.

Comment: TVA representatives explained that the agency administers federal funds to cities to assist cities in complying with federal statutes such as National Environmental Policy Act (NEPA) and inquired whether there are opportunities to streamline the administrative and legal processes necessary to adhere to federal requirements to avoid having to compile full NEPA documents.

Question: Has the NCLS examined how other federal entities such as the Federal Highway Commission handle issues that the NCLS is currently exploring?

NCLS Response: The NCLS Review Committee comprised 16 agencies; the NCLS received interesting reactions by other federal agencies when the NCLS notified them explaining that a portion of their infrastructure include levees. The Federal Highway Administration stated that their roads are not considered flood defense.

Comment: A participant inquired as to whether the NCLS has involved public utilities in the work of the NCLS and indicated that public utilities have served a role in assessing river impacts and recommended that the NCLS examine the seismic retrofit program in the West.

Comment: A participant inquired as to who among the NCLS is examining upstream and downstream environmental impacts associated with levees and noted that this type of assessment can't be done at a programmatic scale and would have to be achieved at the project level.

Question: What about Federal Energy Regulatory Commission (FERC)?

NCLS Response: FERC was on review committee but not on the NCLS.

Comment: In Georgia, state enacted legislation known as the 'River Protection Act' requires a 100-foot buffer within which you can't disturb vegetation for rivers whose average discharge is 400 cubic feet per minute (CFM). However, this presents a conflict if the trees are compromising the integrity of the levee. The 100-foot buffer requirement has no variance procedure. There are other buffers for storm-water protection that do have variance procedures.

Comment: Levees were constructed from the soil material available at the site at the time of construction, so the levees may contain culturally significant artifacts that have been buried.

Comment: Operation and maintenance (O&M) activities on a levee are the primary driver of environmental issues though flooding may cause larger environmental and economic issues than maintaining the levees.

Question: Do you define a levee by hydraulic load?

NCLS Response: Definition of levee is critical for a national program. The NCLS encourages everyone to read it and provide feedback. A lot of levees are wet all the time and some dams are dry all the time, so hydraulic load can't be used in definition.

Question: Is the USACE trying to redefine levees infrastructure they protect (e.g., rate of return) as opposed to the storm year?

NCLS Response: We have found our flood infrastructure pays back at a rate of 6 to 1 or 20 to 1, depending on the reference used. Investing in infrastructure programs makes sense, but it just isn't very sexy. We haven't talked about it very well. The Dutch looked at their programs again after Katrina and are now implementing changes.

Question: Georgia has few levees, so why should most people care about them? Levees may be a bigger concern in Louisiana.

NCLS Response: We understand that bringing people in to a new program is tough if all you talk about is regulation. So the NCLS suggested building capacity in states. We need to attract states to participate through a complex set of incentives to promote good behavior and disincentives to discourage bad behavior.

Question: Does environmental include aesthetics?

NCLS Response: There isn't a law to mandate compliance with aesthetics versus endangered species, although under NEPA, you have to consider impacts. This ties back to national standards on how levees are maintained. You could have different technical standards for levees that look or function differently. It could be a way to address some of the conflict between environment and safety. Tree species are also different and have different impacts. Cottonwoods and pine trees have very different root structures. Soil types also have an impact.

Question: In terms of environmental issues, are you talking about just maintenance O&M or new levees?

NCLS Response: The recommendations are focused on maintenance, but almost all stakeholders have brought up rethinking how we address new levees. There is other legislation involved in looking at future actions (e.g., the Principles and Guidelines). New levees move slower than the engineering issues associated with existing levees.

Comment: Some environmental issues are impediments to proper levee maintenance: fixing leaks can require mitigation of wetlands if seepage has occurred. The public is not supportive of instances where a large percentage of projects budget is going toward environmental restoration.

Question: Are trees on levees a concern for our part of the country?

NCLS Response: There is limited research on vegetation and more is needed. Environmental issues comprise much more than trees; burrowing animals are also a problem.

Question: How does the State's water resource law that requires buffers (100-feet or 25-foot) on some waterways relate to federal laws?

NCLS Response: It is unclear if there is any relationship between this law and federal laws. This is really a state law issue.

Question: One of the NCLS recommendations is focused on increased cooperation with FEMA. Doesn't there need to be better coordination with other federal agencies as well?

NCLS Response: Yes, all federal coordination needs to be improved; the proposed NLSP would require that all agencies work together more closely. There also needs to be better coordination at the state level. The NCLS recommendation states that levee programs should have liaisons with the environmental departments within the state. Most states currently do not have levee safety programs, let alone a liaison between their program and the environmental department.

Question: What are the implications if a levee has to be raised?

NCLS Response: Raising a levee requires an act of Congress. Prior to Congressional action, the effects of raising the levee on the entire system would have to be assessed.

Question: What is the status of the National Levee Database (NLD)?

NCLS Response: The USACE is currently validating about 15,000 miles of levees. The USACE only has the authority to collect information from other federal agencies, so the first recommendation the NCLS made was to fund a full assessment of all levees and do initial inspections.

Question: What role does FEMA play in the inventory of levees?

NCLS Response: FEMA has its own inventory related to the NFIP. The NCLS has incorporated their data, but they are concerned with a much smaller subset of levees than the NCLS is.

Create a National Levee Rehabilitation, Improvement, and Flood Mitigation Fund

- The NLSP should be consistent and flexible enough to accommodate regional differences.
- Life safety should be the primary criteria for funding ranking.

- If population impacts and property values are used as criteria for prioritization, there will be equity issues for poorer communities.
- A split funding arrangement was suggested, with a certain amount delivered to each state and the remaining funds delivered to criteria-based project needs.
- Some participants noted that agencies or municipalities should not be excluded from the fund if the state chooses not to participate.
- Participants noted several existing programs that could be used as models for criteria based funding, including:
 - The Pre-Disaster Mitigation Competitive (PDMC) Grant Program.
 - The USACE Dam Safety high hazard dams in imminent danger of failing.
 - The Leaking Underground Storage Tank (LUST) program.
 - Integrated Hazard Risk Mitigation.
- Initially the program could use self-reporting followed by inspections (e.g. the Coal Combustible Residuals program).
- Some funding could be designated for small communities to conduct levee ratings.
- The fund should be a combination of cost-shared grants and low-interest loans.
- The fund could be administered through the Hazard Mitigation Grant Program or the Pre-Disaster Mitigation Competitive Grant Program.
- Non-structural solutions must be a key part of funded solutions.
- The levee inventory and database needs to be completed before analyzing the funding criteria for specific levee needs.
- An analysis of disaster relief costs to levee based flood events should be compiled.
- Public awareness and education is a significant need.
- The importance of levee safety varies by region.
- Including points on levee safety in the Community Rating System (CRS) would incentivize participation from states.
- Liability issues need to be addressed before states will actively participate.
- The program should not just be available to participating states, but municipalities as well as water districts and levee districts and others should have the ability to participate.