MEETING MINUTES

NATIONAL COMMITTEE ON LEVEE SAFETY (NCLS): National Levee Safety Act, Title IX of the Water Resources Development Act of 2007 (WRDA)

MEETING #1

7 October 2008 – 10 October 2008

National Conference Center
Lansdowne, VA

EXECUTIVE SUMMARY

These minutes cover the proceedings from the first meeting of the National Committee on Levee Safety (NCLS, referred to as "Committee"), which took place from 7 October 2008 – 10 October 2008. The meeting was comprised of the Committee's voting and non-voting members, other support and technical staff from the United States Amy Corps of Engineers (USACE), facilitators from SRA International, Inc., and various presenters.

Voting Members in attendance:

- Mr. Steve Stockton, Committee Chair, USACE
- Mr. Eric Halpin, Committee Vice Chair, USACE
- Mr. Bill Blanton, FEMA (for Doug Bellomo)
- Mr. Don Basham, Private Sector
- Mr. Les Harder, Private Sector
- Ms. Karin Jacoby, Kansas City, MO
- Mr. Dusty Williams, Riverside County Flood Control District, CA
- Mr. John Dorman, State of North Carolina
- Mr. Rod Mayer, State of California
- Mr. Paul Perri, State of Colorado
- Mr. Mike Stankiewicz, State of New York
- Mr. Jon Sweeney, State of Arkansas
- Ms. Marilyn Thomas, Commonwealth of Kentucky
- Mr. Robert Turner, State of Louisiana

Non-voting members in attendance:

- Mr. David Garcia, City of Dallas, Flood Control District
- Ms. Sam Riley Medlock, ASFPM (attending in place of Mr. Larry Larson)
- Mr. Steve Verigin, Private Sector, ASDSO
- Ms. Susan Gilson, NAFSMA

Action Items:

1. Committee Members sign updated PMP (L. Manning)
    a. Provide updated graphic to SRA (S. Spagna)
2. Update contact information for members (M. Tetelman)
3. Revised vision out to group (E. Halpin)
4. Agenda for meeting #2 (L. Manning)
5. Enquire about system for collaborative file sharing (L. Manning and Steve Stockton)
6. Committee members should email shirt sizes to E. Halpin (Committee)
7. Book room at Lansdowne for December 12 Review Team (S. Spagna)
8. Book room at SRA for October 30th Review Team (L. Manning)
9. Workgroup leads – email E. Halpin questions for Congress by 14 October
10. Provide G. Galloway preamble and vision so he can write historic background for strategic plan (SRA)
11. Revised preamble out to group (SRA)
12. Video and white paper from FloodSAFE (R.Mayer)
13. Video from the Mississippi Valley Division (Chocolate Tide) (S. Spagna)
14. Better outline for the Draft (strategic plan) (E. Halpin)
15. Draft outline for Background Section (G. Galloway)
16. Summarize key recommendations from Wye River Summit and Levee Safety Summit (S. Gilson)
17. Summarize key recommendations from 2050 Report and Double-edged Sword Report (S. Riley Medlock)
18. Summarize California Challenge Report and White Paper (R. Mayer)
19. Summarize Galloway Report, Levee Policy Committee Report (SRA)
20. Provide Kansas City Ordinance (K. Jacoby)
21. Provide NAFSMA DVDs as outreach examples (S. Gilson)
22. Provide legislative history of WRDA (S. Gilson)
23. Send Review Team note about review team meetings (S. Spagna)

TUESDAY, 7 OCTOBER 2008

Committee Welcome and Orientation – Eric Halpin, Committee Vice-Chair

The meeting began with an introduction of the U.S. Army Corps of Engineers (USACE) staff, including Kathleen Takach, who is primarily responsible for handling travel logistics. Mr. Halpin then introduced Secretary Woodley and described his broad and varied responsibilities to include: oversight of the Corps Civil Works Program, oversight of Arlington National Cemetery, and serving as Deputy Assistant Undersecretary for Environment. Secretary Woodley has a Ph.D. in Law, is retired Army Reserve and hails from Shreveport, Louisiana.

Opening Comments – Honorable John Paul Woodley, Assistant Secretary of the Army for Civil Works

Secretary Woodley described the Committee's task as "historic" and thanked the Committee members for the dedication and sacrifice it will take to meet the Congressional task and deadline. Mr. Woodley discussed how the Committee was selected with an intent to represent broad-based and diverse levels of expertise and experiences and that Congress understood that there was no

"one size fits all" approach to levee safety, so all parts of the country were represented on the Committee and had the opportunity to make themselves heard. Further, Secretary Woodley explained that Congress conceived of WRDA Title IX as a national program, not one focused on USACE alone. USACE's main role is to coordinate the Committee and provide it with appropriate resources so that it effectively represented the diverse spectrum of national interests.

Secretary Woodley noted that the average levee is beyond its design life and that more and more people are sheltering behind levees. We do not know the number of levees that exist in the U.S. or their condition. The USACE owned and operated levees do not represent a majority of the country's levees. No one is in charge of the national picture. He reiterated the importance of the Committee's role as the "nation's memory and conscience" in ensuring that flood-related disasters would not reoccur due to the current inadequacy of the levee system now or in future generations. He noted that the window of opportunity to make a substantive difference was brief, given that the country had a short attention span, especially when no large floods are occurring. He noted that the Dam Safety Program was also born of catastrophe.

The role of the strategic plan is to provide Congress with the platform needed to act and dedicate significant resources to improve the levee system. He acknowledged the compressed timeframe placed on the Committee by Congress (mid-January to submit the report) and said that while he might be able to ask Congress for a few additional weeks delay on submission, he was anxious to try and submit the plan by mid-January as scheduled.

Secretary Woodley explained that he was instrumental in developing the charter and other organizational and governance parameters relating to the Committee. As such, Secretary Woodley appointed Mr. Steve Stockton, Director of Civil Works, as the Chair, and Mr. Eric Halpin as the Vice Chair of the Committee. These appointments are necessary to ensure that the Committee has adequate support from the USACE to conduct its important deliberations.

Secretary Woodley explained that while the charter allows the Chair (or in his absence the Vice Chair) of the Committee final decision making authority, it is his intention that consensus would always be sought. He hopes that seeking consensus would not result in the "lowest common denominator" and that varying ideas and disagreements are welcome.

Finally, Secretary Woodley noted that some excellent work had been done in dam safety but this is not necessarily directly applicable to levees. There is lack of knowledge about how many levees exist, their location and condition, and Secretary Woodley has explained this status clearly to Congress. While the USACE had a good idea about the number and condition of the levees they manage, the USACE-managed levees do not constitute a majority of the levees, and hence was borne the need for congressional legislation to improve this situation.

<u>Questions and Responses</u>

Q: What will happen after the report is submitted to Congress, including the Committee's role?
R: The Committee's main responsibility is to develop a strategic plan. It is then expected that Congress would develop a subsequent piece of legislation to put the program and funding into

place. It is anticipated that this program will exist in perpetuity, may have a national board. We believe that the National Committee on Levee Safety is a one-time Act.

Introductions of Committee Members – Eric Halpin, USACE
Mr. Halpin introduced the Committee members, discussing their educational background, expertise and experience that makes for a good candidate. He stressed that the selection was highly competitive and based on technical expertise, a diversity of perspectives (e.g. professional disciplines, geographic, federal / state / local, leadership and communications ability). Secretary Woodley explained that he made the final Committee selections and noted with appreciation the high level of national diversity and expertise of the members. He doubted that there had ever been before this level of expertise assembled to understand the national level of levee safety. After Mr. Halpin said a few words about each Committee member, he noted that there were more than 530 years of combined experience in levee safety on the Committee; more than 20 certifications; 35 professional degrees; and more than 100 years of experience in levee safety on Committee staff.

Agenda Review and Role of Facilitator – Linda Manning, SRA International
Ms. Linda Manning reminded the group of the objectives of the first meeting of the National Committee on Levee Safety: 1) to understand group operations (e.g. charter, norms, Project Management Plan); 2) confirm the meeting schedule; and 3) develop a draft vision. She reminded the Committee that her role as facilitator is to design and plan meeting agendas and organize speakers; assist in documenting the discussions, agreements and action items of meetings; and assist with the technical writing.

Because this group is working on a complex task under a tight timeframe, she asked the members to be both organized and flexible. She explained her use of the "parking lot" to keep discussions – if a topic is out of scope or there is not enough information for resolution, she will write it down on a list. At the end of each meeting, the Committee will review the list and decide how to resolve or dismiss the items.

Ms. Manning noted that another main goal of Meeting #1 was to provide a range of background information on levee safety issues so that Committee members could have a common reference / starting point for understanding these issues. She asked the Committee members to identify any omissions to the background material already provided and noted that a website was going to be created (both a public and private site) for the members' use.

***Background Presentation*. How We Got Where We are Today: An Historical Perspective on Levees and Summary of Issues – Dr. Gerry Galloway, University of Maryland**
Dr. Gerry Galloway provided an historical overview of levee policy and construction as well as his opinions for actions that are needed.

Civilizations grow on water infrastructure. Levees can be a source of crisis. Examples of early levees include Indian mounds in the Midwest, levee certificates being sold in New Orleans in the

early 1700s, two-story houses and New Jersey agricultural levees on the Delaware River. Failures of levees to protect settlements led to flood control acts in 1928 and 1936 which established shared responsibilities at various levels of government. In 1986, WRDA established cost-sharing concepts for levee projects. Regardless of legislation, local actors have failed to understand properly their role and responsibility in levee maintenance. He also noted that while levees have often failed, causing loss of life and economic loss, they have also saved billions of dollars and human life (e.g. in 1993, reported savings of $18 billion due to the levee system), so it has been a mixed picture in terms of the costs and benefits of levees.

Dr. Galloway noted that between 1936 and 1965, levees were built with high levels of protection (500 to 1,000 year) as the 1928 Flood Control Act stated that we cannot afford the economic disruption of catastrophes. In 1953 Gilbert White wrote a dissertation that stated we can only control flooding to a certain degree with levees and what is needed is a more comprehensive floodplain management approach. This spurred the development of the National Flood Insurance Program in 1968, designed to lower overall federal costs and tie insurance into actions to reduce damages and control development in the floodplain. The NFIP's 100-year standard for national flood insurance was a good first guess at an appropriate protection level and intended as a staring point. The 100-year flood protection behind levees was grandfathered in levees that had already withstood a 100-year event. There are no inspections under the NFIP. Due to a series of small decisions over many years, the 100-year standard has come to be the defacto standard that people believe is "safe." Dr. Galloway suggests that this happened largely for economic reasons. In the 1970s, interest rates were very high. President Reagan, having won on a fiscally tight economic platform relied more and more on cost sharing. Cost sharing drove the overall cost down to a solution that would just get communities out of having to pay for federal flood insurance; hence the 100-year standard became popular.

Since 1977 the USACE, FEMA and the National Research Council have all expressed concern about the adequacy of the 100-year standard to protect public safety. Subsequent commissions in the 1990s continued to express concern about levee safety, noting there was little knowledge about how many existed or where they were, lack of oversight and knowledge about who is responsible for maintaining which levees, state governments needed to ensure that local governments were properly maintaining levees, and that more funding was needed. Important reports in this area include: *Sharing the Challenge*, 1994; *Living with the Red: Report to the President of the United States and the Prime Minister of Canada*, 2000; and the 1981 National Research Council report. The problem, Dr. Galloway noted, is that there has been little if any action following up on these recommendations.

There have been a few recent actions that are working to shed light on various aspects of this challenge. The recent *Paterno* court case in California called for State responsibility/liability in maintaining federally built structures, and further that local governments bear some responsibility/liability of they allow building in the floodplain. Other studies, *Levees and the NFIP Evaluation* and the *Interagency Levee Policy Review Committee* (FEMA) looked at the relationship between the NFIP and FEMA's map modernization efforts. Reports issued post-Katrina (e.g. IPET) noted problems with levees being built solely based on economic benefit, scarcity of funds in the post-Reagan era, hesitancy by private engineering firms in certifying levees, a need to improve regulatory oversight, need to look at levees as systems, and

identification of residual risk, improved emergency warning/evacuation, updated design standards, and improved risk communication and community education.

Based on these reports, Dr. Galloway made several observations and recommendations about improving levee safety, including:

- Need for FEMA to address climate change and sea level rise in mapping risk behind levee;
- Need to identify and describe risk behind levees;
- Levee sponsors must inspect, report on inspections, recertify every 10 years as condition for the NFIP;
- Do not include structures not designed as levees (e.g. railway embankments);
- Require urban areas with levees to exceed the 100-year protection standard;
- Ensure 21st Century design. More research and development (R&D) should be done to improve levee construction and inspection (e.g. electromagnetic sensors). Fund NOAA to do risk and uncertainty measurements and phase out H&H, plus freeboard;
- Recognize that not all states have equal capacity to locate, inspect and certify their levees;
- Move levees away from rivers;
- Bring in stakeholders from other sectors (e.g. agriculture, energy) in the water policy arena as other sectors drive water resources funding;
- Need to influence new administration that levee infrastructure is a problem; and
- Having good levees is only one part of the program. Need to be a part of comprehensive floodrisk management solution.

Dr. Galloway concluded that significant funds were required to rebuild the levees, at a time when funding was scarce, and that improving levees was only part of the flood risk management solution.

Dr. Galloway's full briefing is available to Committee members.

<u>Questions and Responses</u>

Comment: Since there is little money for new H&H and geotech studies, FEMA bases its mapping information on 35 year old data, in some cases. We need to get people to invest in good data.
Comment: FEMA also needs to take into consideration the increased stochasticity related to climate change and upstream development.
Comment: The Louisiana Coastal Protection Report gives a good sense of the total cost of protection.

Q: How does the USACE balance non-structural mitigation efforts and resources while receiving USACE funds for structural mitigation?
R: If USACE promoted non-structural solutions, they might receive fewer funds for structural protection. Dr. Galloway cited New Orleans as an example where the USACE suggested non-structural protection but there were no funds for it. He further noted with concern that little funding existed to protect the backside of levees and instead only focus on height. Principles and

Guidelines are up for revision – weigh in there. Also, the IPET talks about resilience in many ways, not just levees. The reason there was not armoring on the levees in New Orleans is not because the USACE did not recommend it, but rather there was no funding provided for it.

Q: Do the Dutch and Japanese have non-structural strategies?
R: Evacuation represented the main non-structural strategy. Mr. Galloway noted that in Japan, citizens were committed to serving on a fire/evacuation brigade but that this was largely an older generation and that, like in America, the younger generation was less interested in providing public service.

Q: How are the Dutch funding their impressive efforts at flood control?
R: The Dutch considered this a national security issue since much of their land lay under sea level so they are funding it at the federal level. Several state governors and mayors are looking to bond financing to improve infrastructure and that ideas of privatizing levee maintenance, like what had occurred with toll roads, was also being discussed as a possibility for funding levee construction and maintenance.

Q: What will happen under the PAL (Provisionally Accredited Levee) system when levees lose their accreditation?
R: A lot will depend on the political will of Secretary Woodley's successor's and his/her ability to call it like it is. Vitality and viability rests with ability to fund it. Participants then noted that decertification of levees was going to become prevalent over the next few years, with little funding to support efforts to get levees up to a level that could make them certified. Sentiments were expressed that communities have essentially had four years warning to get their levees up to a certified level. This response carried over to a subsequent comment about a FEMA mapping exercise in Washington, D.C. where the District government explained that their defense for flood protection on 17th Street was to use sandbags and that when FEMA said this was not adequate, DC obtained more time to get certified.

As the Hurricane Protection Decision Chronology (HPDC) report showed, from 1965-1995 pre-Katrina, politicians and other stakeholders involved with levees did not generally have bad intent but made a long series of small-scale decisions based on political expediency and that was why we are in the situation we are in today.

Q: How can recommendations from this Committee gain traction where recommendations from past commissions and reports did not?
R: To be effective: 1) a strong case for levee protection had to be made – that they reduce risk but they are not the only way to do this; 2) that it is a shared responsibility; and 3) that it is all about getting enough funding and can one demonstrate that this is enough of a national emergency akin to the national water treatment issue of the 1970s. He emphasized then that Congress did not understand the levee safety issue as a national security issue and that the Committee needed to get this message across.

Q: What would you recommend?
R: This Committee needs to make a strong case for the realities of levees. They do not provide protection – they reduce risk. Levee safety is a shared responsibility. It is all about funding.

Comment: We need to keep in mind the impact on the municipal bond market. The Dutch have made this a national security issue; a catastrophe will weaken us as a nation. A similar effect is easy to see in New Orleans when the oil industry was significantly impacted.
Comment: We need to better understand flood fighting and levees. Sometimes sandbagging can help. Sometimes it can cause a collapse or exacerbate a difficult situation or increase risks in other areas (e.g. Bainbridge, MO).
Comment: Governors Schwarzenegger, Rendell and Bloomberg are trying to increase awareness of the need to rebuild American infrastructure.
Comment: There is a 2007 CSIS report on infrastructure that looks at a variety of options including bonding, privatization and requiring levee boards to show they have money for maintenance.

Background Presentation. **FEMA's Programs that Relate to Levees – Mr. Bill Blanton, Chief of Engineering and Management, FEMA**
Mr. Mike Buckley of FEMA provided the opening context for this presentation. He noted that one of the biggest reasons that communities build levees is to remove themselves from having to pay flood insurance under the National Flood Insurance Program. They believe that paying this insurance will destroy the economic base of their community. The belief that a flood insurance requirement is detrimental to a community and its citizens places FEMA and local communities under tremendous political pressure. This pressure is only going to get more intense. We are already seeing legislation on the hill to delay the communication of mapping results, pressure to give communities more time to certify their levees, etc. Mr. Buckley called on the Committee to be bold, be righteous and take the high road in its recommendations to Congress. He mentioned that some priorities included the levee inventory, dealing with policy issues on levee integrity, and good communication to the public.

Questions and Responses

Q: What is the impact on communities if their levees are not accredited?
R: Mr. Buckley said that by the time mapping is completed including appeals and rate changes, communities have about a four year timeframe to be ready if their levees are not certifiable.

Q: How will FEMA handle a situation where levee reconstruction takes 5-8 years?
R: Mr. Buckley acknowledged that there will be political pressure on FEMA not to de-certify levees and require insurance. He noted a congressional sub-provision whereby rates would take into account a level above the 100-year protection requirements, so the rates should not be onerous. Congress is expected to take up this issue again in February.

Q: How will FEMA take into account the massive expected wave of de-accreditation of levees and will they factor in progress communities are making?
R: People need to understand their risk. The Flood Insurance Performance Act is suggesting an insurance requirement for all communities behind levees. Accommodations are being made to ease the burden on communities such as A-99 where flood insurance is required by standards are

relaxed, New Orleans is getting more time, etc. Would not be surprised to see more legislation on this topic.

Q: Can actuarially-based zones be administered or require legislation?
R: It is FEMA's responsibility to set rates with some legislative limits on amounts. The Preferred Risk Policy has the lowest rate, if you buy before the new mapping. After mapping adjustments will be more minor.

Mr. Bill Blanton's presentation discussed that one of the major goals in FEMA's mapping efforts is to help the public and lenders make informed decisions. He described types of available insurance (residential, commercial); discussed the flood map modernization project; described how a risk map was comprised; discussed why flood risk communication was so important (e.g. that levees do not cover all risks); and discussed risk mitigation.

Mr. Blanton discussed FEMA's roles and responsibilities in terms of mapping procedures (including coordinating with local levee owners); noted that FEMA does not fund levee improvements but focuses on issuing guidance and reviewing findings; and defining certification. Participants noted the importance of certification in terms of the 65.10 standard; expressed concern that the private sector would not want to issue certifications for fear of liability; noted that the potential loss of certification might be one of the best incentive tools available to get localities to comply; and that the Committee should think about setting standards for safety and certifications.

Mr. Blanton then discussed other topics such as the 65.10 accreditation standard; de-accredited levee systems; three categories of levees; process for completing the inventory; the need to use existing outreach materials better; and the efficacy of the Community Rating System (CRS), a voluntary community program that exceeds the minimum requirements of the National Flood Insurance Program (NFIP) that can help communities lower their rates.

Mr. Blanton's full briefing is available to Committee members.

<u>Questions and Responses</u>

Q: How does the presence of a levee that meets 100 year protection affect the CRS?
R: You do not have to buy flood insurance. If you do buy it, you get a discount. If your levee gives you lesser protection, you still get some credit.

Comment: Committee members expressed concern that local levee owners are not being consulted in FEMA's mapping process and that the coordination should take place with them, not just the local community government.
R: Mr. Blanton responded that at the beginning of the Map Modernization process FEMA often did not know who the levee owners were, but that now they have a database and much clearer understanding of the owners.

Q: You seem to indicate that maps are constantly changing, yet you have a fairly stable system.

R: We hope to address some of that dynamic nature through our move to RiskMAP which integrates all components of the Risk Analysis Division.

Q: How long does certification last under the 65.10?
R: FEMA does not have a particular timeframe in its regulations.

Q: How is FEMA dealing with design criteria on mapping and regulations?
R: Mr. Blanton said he needs to confirm his belief that there is nothing active on updating regulations and design criteria.

Q: What are the issues involved in the accuracy of the technical evaluation?
R: If the USACE says the levee is certified, FEMA will accept this. If a private company certifies a levee, FEMA requires back-up documentation. They have technical experts on contract to review these documents.

Q: Can predisaster funds be used for levees?
R: No

Comment: Local governments will buy into the idea of buying down their risk only when they see this as not just an economic protection is, but a public safety issue as well.
Comment: FEMA should widen its focus beyond overtopping as the main risk in levee failure.
Comment: Committee members should better understand what the scope of their task is in terms of risk analysis and recommendations on that issue.
Comment: Certification is key driver for action at the local level. It should be part of the incentives conversation.

Background Presentation. **Learning from Katrina: Actions for Change and Implementing the IPET Recommendations – Mr. Gary House, Actions for Change Program Manager, USACE**

Mr. House first outlined the Hurricane Protection Decision Chronology (HPDC) and Interagency Performance Evaluation Task Force (IPET) reports post-Katrina. He noted several key findings of IPET including the fact that there was no systems design or built-in infrastructure resiliency/redundancy; outdated storm strength indicators; need to improve the impact of wetlands and other barriers; the need to consider evolution into design; policy failings (such as the lack of understanding of what constituted 'acceptable' versus 'tolerable' and attention paid to non-structural alternatives); and the need for funds for more research. Concerning the HDPC findings, Mr. House reiterated the observations that decision-makers were not necessarily acting out of bad intent but that a series of small decisions made over a long period of time led to the problem.

Mr. House then discussed the *Actions for Change* initiative at the USACE, which was born out of the findings from the IPET and HPDC. It includes twelve strategic actions that revolve around trying to change the culture within the USACE and were comprised of four key themes: 1) a comprehensive systems approach (e.g. policy change and need to focus on big systems); 2) risk-informed decision-making (e.g. new risk for H&H models, development of tolerable risk

policies, a life cycle risk analysis framework); 3) risk communication and public perception (e.g. encouraging greater public involvement e.g. via public meetings); and 4) professional and technical expertise (e.g. improving review processes, increasing staff competency).

Mr. House's full briefing is available to Committee members.

Questions and Responses

Q: Is putting in place these principles and guidelines (P&G) in relation to *Actions for Change* a bit like putting the cart before the horse?
R: Mr. House acknowledged that the P&G will probably need to be adjusted again, and that the *Actions for Change* did not represent some new approach but was responding to the recommendations of IPET and HPDC. Eric Halpin added that it was clear that post-Katrina; the USACE had more authority than they had realized over levees and the P&G have to catch up with that.

Q: Scour protection was an important issue identified post-Katrina for levees and even though the USACE had previously thought that was a higher level of protection than authorized, it subsequently retrofitted the walls. Is this an example of a policy issue that the USACE is wrestling with?
R: Mr. House answered that IPET had identified a set of problems, but there is a lack of funding to cover all of them. *Actions for Change* is trying to give impetus to these needed changes.

Q: Public safety seems to be an important issue, but in terms of P&G, it seems more in the background. How does this get balanced?
R: We are not where we want to be yet. The USACE is not the only agency responsible for the P&G and is trying to strike a balance between the four themes.

Q: At the District level attorneys seem to be the ones making the decisions on engineering issues, where a locality will come up with a good solution but the legal department will say that cannot be done, usually for fear of liability.
R: Mr. House responded that attorneys and exposure limits the USACE more than the engineers would like.

***Background Presentation*. USACE Levee Safety Program – Ms. Tammy Conforti, Levee Safety Program Manager, USACE**
Ms. Conforti outlined the background of and rationale for the USACE Levee Safety Program (Program), noting it was started before and separate from the Levee Safety Act. The USACE is in the process of transitioning from an inspection program to a more comprehensive program. USACE currently rates levees based on segment/ownership, but realizes it must go to a systems approach.

Some of the new program hallmarks are: 1) developing a community of practice to improve levee knowledge; 2) building a more robust database at the district and field level as well as headquarters; 3) creating a national set of teams (based on technical qualifications); 4) creating

an automated/standardized inspection tool; and 5) developing a new levee owners manual. She noted the wide range of levees, including those that the USACE does not know about or have jurisdiction over, though WRDA provides the USACE with increased authority over levees that are not in the USACE/FEMA nexus.

Ms. Conforti discussed a new inspection program using a tiered approach; discussed how the USACE is going to provide new certification guidance policies (including risk analysis and the use of a complete systems approach); the roll-out of a levee screening tool to enable rapid assessment (currently in beta phase).

Ms. Conforti concluded by noting some key challenges such as: coordination with many stakeholders and the need to understand shared responsibilities; the need to focus not just on engineering; the importance of clarity and transparency; and the need to stand up to pressure to change technical specifications to enable easier implementation.

Ms. Conforti's full briefing is available to Committee members.

Question and Response

Q: Are the USACE policies and procedures being formulated with outside input (e.g. levee owners)?
R: The guidance will be done internally with FEMA first and then go outside to Districts for review, who are free to share with levee owners.

Q: Given funding challenges and the 10 year limit, it is likely the USACE is not doing certifications, so private engineers are doing them. Could the USACE take funds from state agencies to do reviews of private sector certifications?
R: Yes, USACE's Floodplain Services Management Services Program enables the receipt of voluntary contributions, and the District can take that data to give advice on process. It is possible that Congress could allow the USACE to receive funds from local stakeholders, and Secretary Woodley could waive the Thomas Amendment.

Q: As result of inspections and assessments of federal levees, if the USACE does not have authority but an A&E firm did the certification, how does one handle this?
R: In cases where the USACE did the inspection, its duty is to relate deficiencies. When an A&E firm did certification, the USACE will inform FEMA. The USACE will not make a blanket statement that this particular levee should be decertified if did not do the certification.

Q: Are there a large number of other federal agencies who own levees?
R: The Bureau of Reclamation owns 8,000 miles of levees.

Q: Are there international guidelines?
R: The USACE has a strong collaboration with the Dutch and the UK.

Q: After inspection, the results will be given to a state representative – who will that be?

R: The results will be given to a local sponsor; the NFIP office will get a copy as well as local sponsor and FEMA.

Q: Why is the USACE not doing certifications for the NFIP?
R: Because it is not related to safety. This is a local responsibility; localities gain benefits from being exempt from insurance. It's also more an agency policy not to do certifications, not a funding issue.

Q: The USACE 10-year risk assessment – how robust is this going to be?
R: When one goes into risk assessment on levees, cannot borrow methodology from dams like previously thought. The USACE wants to make sure the screening tool is fully reviewed first before getting into higher order. Ms. Conforti added that risk assessment is done on existing data, which we do not have for many levees, so need to get the data first.

Q: Envisioning cost share effort – how will that happen with local sponsor?
R: Risk screening tool will require buy-in from local sponsor, and question whether need another streamlined process. It will also be difficult if local sponsor does not want the study completed so does not fund its share. Hopefully screening tool will point out the need for more in-depth studies.

Q: Is the USACE aspiring to do periodic assessments and how does this relate to certification assessments for the NFIP – do not want to duplicate effort.
R: The USACE is not going to duplicate efforts; but cannot treat certification as totally separate. One has to prevent duplication of effort, and she is worried seeing states doing certification as well.

Q: Could we have a levee hazard rating system like dam system rating program including risk thresholds?
R: Mr. Halpin pointed out that a system can be risk based or classification-based.

Q: Seeing the way the USACE is going, gathering information from other entities – are there other searches and sources to help inform us in this arena?
R: California has model state safety program which we will hear about.

Comment: We hope that whatever we learn collectively on this Committee for levee safety will also inform dam safety programs.
Comment: A lot of what the USACE has done will need to be part of our recommendations. Has anyone searched other entities for similar programs?

Background Presentation. **National Dam Safety Program Act (NDSPA) Lessons Learned – Mr. Brian Long, State Dam Safety Representative, National Dam Safety Review Board, State of West Virginia, and Mr. Ken Smith, State of Indiana**
Both Mr. Long and Mr. Smith are State dam safety officials and current members of the National Dam Safety Review Board (NDSRB). They are both Past Presidents of the Association of State Dam Safety Officials (ASDSO).

You are about to receive the collective ramblings of two old friends attempting to answer the age old question - what could we have done better? To use Secretary Woodley's phrase: we are not speaking in our roles as anyone's employees. We are trying to speak to the "collective consciousness" of the nation.

We are going to give some background and then following Secretary Woodley's charge to make the most of the opportunity, we will talk about what has worked for the national dam safety initiative and what we would do differently to recreate the national dam safety initiative if we could turn the clock back 20 years with the hindsight we have now

As many state dam safety programs are additionally charged with levee safety, we look forward to seeing the work of this group and pledge our efforts and those of ASDSO in providing assistance to this group.

Levees and dams share many aspects of design, construction, inspection, maintenance, hazard potential, emergency action planning, and security. As a result, dam safety programs may appear to be logical houses for levee programs.

By resolution, ASDSO's voting membership has supported the establishment of a National Levee Safety Program that will enhance the efforts of the states and federal agencies to improve the condition of levees that protect lives and property, provided that any resources dedicated to the safety of levees does not come from existing limited state and federal resources already dedicated to the safety of dams, and provided that the system used to classify the hazard potential of a levee is similar to the current system used to classify the hazard potential of a dam.

From our canvass of fellow states we learned:

- about half of the states have levee statutes in some form, but many states have little resources to inspect or pursue enforcement and funding opportunities for levee improvements are limited;
- existing state dam safety programs are generally unable to administer levee safety programs without additional resources
- there is not yet consistent political will and priority across the country necessary for expansion of levee safety programs at a state level;
- that urban and agricultural levees present totally different challenges due to design, construction, ownership, and funding issues; and
- developers are utilizing historically agricultural levees to create the illusion of protection for new development.

We are hopeful that this national levee program will establish a compelling incentive program (and perhaps some dedicated funding concepts) to encourage states to step up their efforts and administer levee regulatory programs that are consistent with a future national model.

Development of the National Dam Safety Program—as many of you know, the eyes of the nation were focused on dam safety in the 1970s when several dramatic dam failures occurred, resulting in catastrophic consequences (e.g., Buffalo Creek, Teton, Kelly Barnes). President Carter

realized that federal programs were needed to address the dam safety issue. Based on his administration's groundwork, the federal government started an inventory and accomplished a one-time inspection of many dams nationwide. The USACE Phase I inspection program resembles the point where the national legislated levee program is today. Following the inspection program, the national dam safety initiative languished for many years because the national spotlight had moved on.
Despite dam safety accomplishments to date, the lesson to learn is, if we could turn back the clock, a stronger federal program, perhaps a federal primacy program such as the surface mining and water quality programs, may have accomplished much more. As such:

- Dam failures continue to occur regularly. To name just a few, recent dam failures have occurred in Hawaii, Missouri, New York, Michigan, and Indiana; plus heavily publicized near failures in Massachusetts, that have again brought tragic focus to the potential consequences of deteriorating and unsafe (deficient) dams;
- Recent extreme rainfalls in the Midwest and the Northeast over the last few years have brought further attention to the vulnerability of dams (and in many states this summer to the vulnerability of levees); and
- Failures like these are a constant reminder of the potential consequences associated with dams and levees and the obligation to assure that dams and levees are properly constructed, operated, maintained, and understood by stakeholders.

While Federal agencies own and regulate many dams, State dam safety programs regulate 95% percent of the +/- 80,000 dams in the United States. Of these state regulated dams, 60-70 percent is privately owned. Lesson Learned—it is critical to the program design to inventory and understand who are the majority of owners of levees, and this committee will not have that information between now and Jan 15.

The National Dam Safety Program exists today because twenty years after the failures of the 1970's, the National Dam Safety Program Act was signed into law on October 12, 1996 as part of the Water Resources Development Act of 1996 (PL 104-303). The law has a small vision and reach. It was amended by the Dam Safety and Security Act of 2002 to last through 2006 (PL 107-310). It is administered through the Department of Homeland Security, Federal Emergency Management Agency (now part of the Emergency Preparedness and Response Directorate). The Dam Safety Act of 2006 extended the Act through 2011.

Operation of the current National Dam Safety program—a very small, yet critical program that provides much needed assistance to the state dam safety to improve safety and security around dams. We stress we do not wish to throw out the baby with the bath water. The current program has accomplished great things that would not have happened without it through:

- Providing assistance grants that may be utilized to best suit the individual state's needs, so as to assist them in improving their regulatory programs;

- Funding research to identify more effective methods of evaluating the safety of dams and more efficient techniques to repair dams. And now, these research funds can be used to develop better methods to assess and improve the security of dams;

- Establishing training programs for dam safety engineers;

- Creating a National Inventory of Dams; and
- Facilitating the exchange of technical information between federal dam safety partners and the states.

Additionally, the act calls for FEMA to provide education to the public, to dam owners and others about the need for strong dam safety programs, nationally and locally, and to coordinate partnerships among all players within the dam safety community to enhance dam safety. Organization of the current National Dam Safety Program—the Act establishes FEMA as the lead federal dam safety agency. It is a small program within a very large agency. Lesson Learned—with the gigantic, pressing issues incumbent upon Department of Homeland Security, it is difficult for DHS to prioritize the dam safety program.

Another lesson learned—the National Inventory of Dams (NID) maintained by US Army Corps of Engineers. It is a good but not great database, which is never current, is only updated every year or two by cumbersome downloads from +/- 50 state and federal data bases used for day to day transactions, and which struggles with every update over repeated data migration and clean up issues.

The Act established the *Interagency Committee on Dam Safety (ICODS)* to encourage the establishment and maintenance of effective Federal programs, policies, and guidelines to enhance dam safety for the protection of human life and property. FEMA chairs ICODS.

The Act established the *National Dam Safety Review Board (NDSRB)* to monitor the safety of dams in the United States, to monitor State implementation, and to advise the Director on national dam safety policy. Lesson learned—there appears to be duplication of effort between ICODS and the NDSRB. The levee group should think about how to best coordinate state and federal efforts.

Lesson learned—the natural management style of the chair and the changing culture of the organization may greatly affect:

- the tone and openness of discussion;
- accomplishments of board and program;
- the ability of the board to have a voice that is heard up the chain of command;
- independence to speak to controversial issues and program needs; and
- the ability of staff to offer constructive recommendations.

Developing a levee program using the facilitated and open process you are using, gives us hope for a positive and effective result.

Despite appropriations significantly less than authorized, the NDSP has developed into a small but effective program to encourage dam safety nationwide. After 12 years of operation, state dam safety programs and other stakeholders have expressed the following opinions to us:

- Do not underestimate the true impact of training opportunities the NDSP provides to the state programs. Sitting in this facility and talking with others who are here it strikes us

how truly dedicated the Federal government is to training their staff. There is no similar commitment in many state organizations. State official training is a hugely significant and positive accomplishment;

- The training subcommittee provides coordinated technical training to dam safety programs and ties well to recently funded research efforts;
- Without the many training initiatives from the NDSP, many state dam safety programs would accomplish little staff training. New levee program should have a significant training component;
- State Assistance Grants. Funds provided to state dam safety programs allow flexibility in support of program activities;
- Recent direction by the Board and FEMA, however, now requires security and EAP components to the grants, limiting State's ability to use the funds as they see most useful to their program. Levee program should provide significant and flexible financial assistance to states;
- Startup programs may require more focused funding. Existing state programs will require more flexibility;
- NDSRB promotes cooperation, coordination, and understanding among state and federal dam safety programs. We understand each other, but cooperation and coordination could be improved.
- Levee program should explore options to increase cooperation and coordination such as those seen in regulatory primacy programs;
- State assistance grants only average $30,000 to $40,000 per state program which is inadequate to accomplish the state or federal program objectives of the Act. Unfortunately, the state assistance program grants are insufficient to truly drive state legislative change towards consistency with NDS Program vision. Adequate funding of state program grants should be provided;
- Number of legacy state and federal programs, definitions, and standards make it difficult to promote consistency across agencies. This lack of consistency has prevented accurate performance measuring or consistent application of design and construction requirements. As already mentioned, levee program should deal with the extremes in existing state programs.
- The dam safety program within FEMA is very small relative to other programs and suffers from lack of priority and dedicated funding. Program budget should be an agency priority with support for program management and components. Levee program should identify a dedicated source of program funds;
- Inspection, education, and awareness alone will not make all dams safer. There is a great need to find rehab funding. The National program act specifically prohibits funding of construction activities. Needed rehabilitations to these aging pieces of infrastructure can easily cost from a quarter of a million dollars to several million dollars, highlighting the necessity for the currently proposed rehab program.
- While it is commonly acknowledged that many of the dams are no longer needed or wanted, even decommissioning or removals can be very expensive. There is not funding for a national dam removal initiative. Committee should consider a levee removal funding mechanism.

- Legislative advocacy has been a significant component needed in the dam safety initiative over the years. For levees it will be necessary to develop Congressional staff contacts to promote the program. Possibly the Committee should invite Senate and Representative staffers to attend / participate in Committee meetings, so they can buy in and take ownership of the final initiative proposal;
- Bill Gates said that when dedicated intelligent people are involved in a creative process, things are bound to be a little messy—it is just part of the process. It has been said of the National Dam Safety Board of Review meetings that things have been a little messy among the many stakeholders. We need to recognize and not take personally this messy creative process. There are a lot of highly dedicated, committed, and very intelligent individuals working to improve and grow the dam safety program, if things do not get a little messy we probably are not doing a good job. Time is short. We expect the levee Committee will be messy within the bounds of the facilitator, if you are not we fear you will not lead meaningful change.

***Background Presentation*. Status of the National Levee Database – Mr. Tim Pangburn, Chief of Remote Sensing/GIS and Water Resources Branch ERDC-CRREL, USACE**

Mr. Pangburn gave an overview of the status of the National Levee Database. The database was started before hurricane Katrina including the development of a spatial data standard and all its core attributes. The database includes mandatory 17 features that are reported up to the national level including: physical attributes; inspections; failures; ownership, segment (based on ownership); and physical entity of levee. The inspection tool has a photo manager, data manager and ability to do and print standard reports immediately. Geospatial queries can also be done. These features help ensure standardization and also immediate access to data/reports by state and local officials. After input into the inspection format, the information goes through engineering review, signature by the Levee Safety Officer then upload to the national site.

Each USACE District is responsible for reporting back their levee footprint.

The database is currently in Oracle to make it easy to share. There will be flexible access with some information available to states, locals and other federal partners.

In FY06 USACE received $24 million. We developed a questionnaire to the Districts to get an assessment of the miles of levees and populations protected behind them. In FY07 we started a survey together with FEMA in pilot Districts. In FY08 the laptop-based Levee Inspection Software was finalized. The USACE is continuing work in FY09 including full funding for New Orleans and phasing the rollout to the Districts.

Mr. Pangburn's full briefing is available to Committee members.

<u>Questions and Responses</u>

Comment: If we could populate the inventory, the information could be given to states.

Q: USGS does real time inundation mapping. Could we bring this together to inform evacuation?
R: Yes, USACE is working with NOAA, State of NC, USGS and others to bring this all together. Glenn Austin at the Institute for Water Resources is coordinating this effort to share responsibilities and integrate technologies.

Q: What is the time schedule for the unknown levees?
R: We are developing a Phase I survey, points of contact in states to provide data. One problem that we have is that agricultural levees are not in the model program.

Q: What about population of geospatial layers?
R: We are looking at standard GPS, but realize that if some states have lines digitized on a topo sheet we will include the metadata. It is better than nothing.

WEDNESDAY, 8 OCTOBER 2008

Opening Comments – Mr. Steve Stockton, Committee Chairman
Mr. Stockton discussed the background behind the Committee including the 180-day timeframe that began in July when the USACE got the technical correction to WRDA Title IX. Twelve years ago, the dam safety process took place and he hoped similar work could take place here. He stressed that while there was pressure for the USACE to do the recommendations for the levee safety work, it was important to have a 'light federal' footprint and get buy-in from state and local entities.

Mr. Stockton is looking for the 80% solution and noted this is a two-step process: get a strategic plan with recommendations to Congress and then Congress will establish the legislation to develop the program. Mr. Stockton emphasized the need for thought leadership, informality, openness and transparency, and the need to get this plan to Congress by January 15, 2009 while Secretary Woodley can help usher it through.

The scope should be narrow, where the levee safety program is only one subset of the overall Flood Risk Management plan, so other issues like evacuation should be put in the parking lot, as they will still want to be retained for the strategic plan.

There is a strong need for good risk communications strategies, noting it was something the flood protection community does not do well.

Mr. Stockton noted that levees include embankments on irrigation canals, Bureau of Reclamation levees, etc so that these are also in the Committee's purview.

Mr. Stockton discussed the need for a public meeting to discuss the Committee's preliminary findings towards the end of the plenary meetings.

Mr. Stockton discussed the responsibilities of Chair / Vice Chair per the Charter. He does not want to have a requirement for 100% consensus on all issues for fear of getting bogged down in

a short timeframe. If the group does not reach consensus on a topic, the Chair will come up with a solution that will be as mutually agreeable as possible.

Self Introductions and Opening Statements – Linda Manning, Facilitator
During this session, each Committee member introduced themselves, identified what they considered some of the biggest national challenges the country faced in terms of levee safety and then the biggest challenges Committee members faced in terms of their job.

The biggest national challenges identified included: budget constraints; inadequate risk communication – which relates to other frequently identified problem that most people do not properly understand risk and have a short attention span; decision-makers not understanding the consequences of their actions (e.g. land use policies); a focus on environmental protection v. levee protection; taking a one-size-fits-all approach; coordination at all levels of government; political pressures not to reflect risk; changing terminology; development-based wealth outpacing risk; apathy; competition with other priorities; challenge of defining risk; lack of consistent and rigorous standards; creating a program that can be implemented and 'sold' to Congress; how to create and 'sell' a national program that gets implemented at a local level; and the unwillingness of people to make sacrifices (e.g. people want to live in levee-protected areas but do not want to take action to reduce those risks).

The biggest challenges Committee members identified in terms of their own jobs included the challenges of maintaining visibility and support; budget constraints; ignorance by engineers of the consequences of other infrastructure projects on levees; time commitment for doing the Committee work; the decertification process; human resources (a small number of people tackling a huge issue); desire to manage waterways for multiple purposes and shared responsibilities are not well defined; doing projects both with and without the USACE; and a lack of understanding of risk.

Background Presentation. **Levee Safety Act, Title IX Overview – Mr. Eric Halpin, Special Assistant for Dam and Levee Safety, USACE**
Mr. Halpin first compared the National Dam Safety Act with the Levee Safety Act noting that one major difference was that dams had much more of a federal government presence and much more data provided to it ahead of making its recommendations. In the case of this Committee the inventory is being conducted at the same time, so recommendations will have to be made without the benefit of that data. Mr. Halpin stressed that the goal of the Committee was to develop a strategic plan framed around the nine goals in the Levee Safety Act. He noted that one challenge consisted of defining "levee" for the purposes of discussion and bounding.

Katrina was a catalyst for this act. Versions of the Levee Safety Act were in both the senate and house. Many folks including some in this room commented on its development. USACE was supportive of its development, but did not initiate it. ASFPM and NAFSMA wanted a program, but not one dictated by the federal government, so suggested the development of this Committee. The vision was to create a roll for all interested parties and develop a program that complements floodplain management.

Mr. Halpin proceeded to discuss the Levee Safety Act legislation relating to the Committee's composition and membership approach, per Section 9003. It was noted that the more stakeholders that could review the Committee's work, the better. The USACE developed a Review Team, largely chosen by well-qualified applicants not chosen for the Committee. Mr. Halpin explained that the Committee had been divided into four groups as a way to organize nine goals set forth in the Act. He acknowledged that goals 1 and 4 seemed difficult to untangle and needed to be defined.

Mr. Halpin discussed LSA Section 9004, covering the inventory and inspection of levees. He noted challenges in defining and specifying inspection criteria and requested the Committee to assist the USACE in figuring out this part of the Act. Discussion arose around such issues as cost-sharing (e.g. federal responsibility versus other stakeholders), and whether this activity should go in parallel with the strategic plan. Several Committee members also asked whether a formal board would be constituted to carry on the Committee's work after the strategic plan was concluded, and it was agreed that the Committee should recommend whether a board should be constituted.

Following the break, several more questions arose concerning the LSA, including what would be the responsibility of non-participating levee owners per the 1941 Act (Section 5 of 33 USC 701(n), commonly known as PL84.99) relating to cost share. It was discussed that the Committee could clarify about cost-share. Another Committee member reinforced the need to provide a clear and agreed-upon definition of a levee (e.g. could it include 'embankment', 'roadway', 'railway'?), and LM stressed that the Committee should look at different ways levees should be defined and return with recommendations.

Mr. Halpin's full briefing is available to Committee members.

<u>Questions and Response</u>

Comment: The Committee agreed that the Working Group named State Implementation should be renamed to simply be Implementation, since it is not apparent that a delegated program would be limited to the states.
Comment: Committee members at this point asked a wide range of questions and made several suggestions including asking about the origin of WRDA, what types of high-level outcomes were expected from the Committee, and what is the scope of the Committee's responsibilities. Another Committee member noted that it was important to get people to develop and use one common inventory, and not duplicate efforts. Mr. Halpin responded that the USACE now had the authority to have non-federal levees also included in the inventory.
Comment: 33 U.S.C. 701(n) noted in the act refers to PL 84.99.

Review of the Committee Charter – Mr. Eric Halpin, Committee Vice-Chair
Eric Halpin led the presentation and began with the mission of the Committee. Considerable debate arose about such questions as whether the recommendations should be written like legislation; whether the strategic plan should be folded into the recommendations given that

some Committee members believed that was how the LSA was written; the fact that the goals were already in the WRDA and could be the framework for the recommendations; etc.

The following agreements were reached regarding the scope/charter:

- Mr. Stockton emphasized that the Committee should produce one written product, the strategic plan and that plan should incorporate the recommendations, goals and objectives.
- Secretary Woodley would decide about OMB review but that due to timeframes it was likely to have a simultaneous submission with Congress.
- The Vice Chair has authority to act in the Chair's absence.
- Nonvoting members are allowed to send a guest if they cannot attend with the permission of the Chair.
- The appointment of the Committee is for two years, but more than 75 percent of the work is anticipated in the first 3-4 months.
- The Project Management Plan (PMP) and Charter will serve as the official documents describing roles and responsibilities, working groups, meeting schedules, communications, group norms, etc.
- It is the expectation of the Chair that Committee members will be available to assist with briefings to Congress and "selling" the plan externally.

Review of Project Management Plan – Mr. Eric Halpin, Vice Chair

The Committee spent a good deal of time discussing a draft preamble that was written for the strategic plan, where the preamble was intended to serve as a context for the strategic plan and emphasize that the levee safety program was only one part of flood risk management efforts (an effort to keep the Committee scope narrowly defined). Committee members suggested various ways to revise part one of the preamble and a second draft was being prepared for the next meeting (see Appendix A).

Committee members then discussed the second part of the preamble, which covered how to develop recommendations to deal with how the NLS should be distinguished from the broader issues of Flood Risk Management. Committee members queried whether, per the WRDA objectives, the preamble should cover issues not directly part of levee structural safety issues per se (such as flood risk insurance), and Steve Stockton reiterated that the Committee's task was not to solve all the problems posed by flood risk. One member suggested that it would be good to show the Committee was considering the related issues and that the Committee would seek to 'do no harm' in posing recommendations that ventured into areas outside their scope (such as the NFIP). The Committee agreed that more conversation was needed regarding the sideboards of this Congressional task.

Following a discussion of the preamble, the four Working Groups were formed, including USACE personnel. The Committee members reviewed the detailed discussion of six suggested steps that the Working Groups needed to follow until mid-January to help ensure that they provided the requisite work product for a good strategic plan as efficiently as possible. In order to help the Working Groups move forward:

- USACE has assigned a staff member to each group;

- USACE will provide logistical assistance to get meeting space and conference calls for Working Group deliberations;
- USACE will be setting up a website with pertinent information and file sharing abilities; and
- Updated Working Group membership is reflected in the updated PMP.

A public meeting is scheduled for early January. The group decided that this meeting should be in workshop style as it would not be possible to have a final document completed 30 days prior.

There was concern about the schedule of six Committee meetings with Working Group meetings between. Many Working Groups decided that rather than meet face to face on the off weeks, they would add a day to either end of the plenary meetings or work in the evenings.

The group discussed the utilization of the Review Team as a quality control / quality assurance mechanism and confirmed the two meetings on the schedule. It was also decided that the Review Team should abide by the same confidentiality agreement as the Committee members and not share drafts of materials, but that they were free to ask colleagues for their input and advice on particular topics.

The Committee discussed in more detail how the Working Groups should relate to each other. This included the importance of clarifying terms that pertained to several of the Working Groups (e.g. "governance", "funding") and how the plenary meetings would serve as points of information exchange. Mr. Stockton stressed that WRDA contained only nine goals and not to make too many recommendations, as this could make the task more complex. Another Committee member suggested framing the recommendations around the WRDA goals and that if the Committee wanted to add more goals, then they could – this idea seemed agreeable.

The Committee discussed the scope of their mandate, particularly the relation of their work with broader flood risk management issues. Mr. Stockton emphasized the importance of taking an 'hour-glass' approach, where one would start with the preamble and context, focus on levees specifically, then broadening the recommendations out if necessary to touch on other related issues, to demonstrate that the Committee had considered the totality of the issue. Stockton stressed the need for a close nexus between the Levee Safety Act and the recommendations, perhaps touching upon the important connections in the National Flood Insurance Program, but not to focus on a complete rewrite.

A discussion emerged about how WRDA Goal #1 related to Goal #3, particularly concerning the meaning of the word "program" that appeared in both goals. Some Committee members stressed that goal #1 was a broad vision statement and that the other eight goals were components of that broad goal; another Committee member strongly believed that goal #1 should be addressed directly along with the other goals. The Committee then discussed the meaning of the word 'national' and differentiated it from 'federal'. One Committee member noted that if a levee program was not delegated to a particular state or federal agency, it had to be made clear who held responsibility.

Mr. Halpin's full briefing is available to Committee members.

Development of Committee Norms – Linda Manning, Facilitator
The group developed a set of Committee Norms that are included below and in the PMP.

1. Seek to understand first; persuade second.
2. Focus on the topics and issues, not the person.
3. Police your own desire to explore a tangent.
    i. Ask yourself, "Is this question or comment relevant to the task at hand?"
    ii. Always keep the end in mind.
4. Come prepared to participate at meetings. Read materials. Do homework.
5. If you cannot attend a meeting, ensure you are up to speed on the decisions and progress at the last meeting.
6. Committee should benefit from your "local" experience and perspectives, but keep your focus national.
7. Do not share the deliberations of this Committee. Materials that may be shared include: WRDA IX, charter, membership, documents on website (group will decide when to post). Any press inquiries should be directed to Eric Halpin, Vice Chair of the Committee.

Thought Piece. **Levee Policy Summits: Outcomes and Summary – Dusty Williams and Susan Gilson, National Association of Flood and Stormwater Management Agencies (NAFSMA)**
NAFSMA, ASFPM the USACE and FEMA met in August just weeks before Katrina hit to discuss better coordination between USACE and FEMA. This led to the creation of the Interagency Flood Risk Management Committee (IFRMC) that meets quarterly at high levels in FEMA and the USACE to coordinate some of these issues. The IFRMC has organized and sponsored two national level summits. In December of 2006 the Wye River Summit brought together about 90 federal, state and nonprofit individuals. In February of 2008 in St. Louis a larger Levee Safety Summit was attended by nearly 500 people.

The full recommendations from both of these summits are available to the Committee.

THURSDAY, 9 OCTOBER 2008

Plenary Meeting Discussion Regarding Deadline and Schedule of Committee
The discussion from the day prior resumed, with Committee members expressing concern about what many of them viewed as an intense and compressed schedule that would affect their other professional and personal responsibilities. Steve Stockton re-emphasized the importance of meeting the mid-January deadline, avoiding a "learning curve" for new Administration officials on levee safety issues. He added that the strategic plan did not need to solve all the conceivable issues related to levee safety, just that it needed to contain solid guidelines for levee system and provide a good platform for drafting future legislation. He believes it is better to have an 80% completed plan on schedule than delay the process. While Secretary Woodley mentioned he could ask Congress for an extension, he was talking about weeks, not months.

***Background Presentation*. Keeping the Strategic in Your Strategic Plan – Philip Rizzi, Business Program Manager, Human Capital Account, SRA International**
Phillip Rizzi of SRA International led the Committee members through a discussion of what constitutes a good strategic plan, focusing particularly on helping the members develop vision and mission statements. Mr. Rizzi showed examples of what were considered effective corporate vision and mission statements and ones that were less effective and noted that vision statements, such as Microsoft's, change over time. The Committee confirmed they were developing a vision for a Levee Safety Program, not the Committee.

Mr. Rizzi's full briefing is available to Committee members.

Development of a Vision for Levee Safety in the Nation – Linda Manning, Facilitator
Each Working Group spent about 45 minutes developing their notions of a vision statement, followed by a plenary discussion where each Working Group shared their vision statements and the important elements that each of them believed should underpin the vision statement. The full set of notes of each Working Groups' Vision Statement exercise is contained as Appendix C.

Mr. Stockton organized and reiterated some main themes such as:

- reliable and resilient levees;
- levees as part of a comprehensive, systems-based flood risk management strategy;
- reduction of flood risks and damages to communities;
- risks are managed collaboratively across all levels of government and public at large;
- need for good understanding of risk (government and public);
- importance of levee maintenance over its life cycle (planned, designed, O&M over time); and
- levees that are environmentally sustainable (leave room for the river).

A Committee member then shared the following Vision Statement that seemed to resonate well with the Committee as a whole:

> "Reliable and resilient levees functioning as part of a comprehensive flood risk management system to improve public safety."

The Committee Members noted that issues such as protecting property (economic benefits) should also be mentioned (though one observer commented that promising property protection could be problematic), that the Statement might need to be shifted to put the issue of a safe public up front, and that the Statement might need to be rewritten somewhat to be more understandable to the general public. Mr. Stockton noted that the next step was to take this draft statement and provide it to writers with expertise in crafting vision statements.

The Committee concluded this discussion by noting that there was need for further discussion on what is a good definition for "safe"; how levels of protection are related to consequences; integrated levee and hazard mitigation; that "tolerable risk" is a policy question; and how to determine what constitutes a "ready public."

***Thought Piece*. Double Edged Sword – Chad Berginnis, Association of State Floodplain Mangers (ASFPM)**
Chad Berginnis discussed such issues as Ohio's levee protection system, problems of people not understanding risk, and suggested areas for evaluation as per the ASFPM's 2007 White Paper. These areas included defining levees, creating a levee inventory, improving design standards, levee certification and inspection, management of residual risk, and mitigation of adverse impacts. CB then mentioned a seminal paper done by Gilbert White in the 1960s on floodplain management (House Document 465, available on ASFPM's website at www.floods.org).

A Committee member noted the incentives and disincentives for states to invest in flood management and how cost-share could be calculated. Another Committee member emphasized the problem that only the specific structure of a levee is examined, and yet the whole system surrounding levees needs to be considered (e.g. interior drainage systems). This led one Committee member to emphasize that the term levee as defined in WRDA might need to be revised by the Committee if necessary.

Mr. Berginnis' full briefing is available to Committee members.

***Thought Piece.* ASFPM Foundation Report Levees 2050 – Sam Riley Medlock, Association of State Floodplain Managers (ASFPM)**
Ms. Sam Riley Medlock provided background on the ASFPM and discussed findings from ASFPM Foundation's recent Flood Policy Forum. Ms. Medlock presented the historic human adjustments to floods as developed by Gilbert White, as well as key drivers of change that could be expected by 2050 as identified in the Forum, including demographic changes; governance (e.g. devolution of responsibility from federal to state and local levels); and economic / environmental / technology drivers. As an additional adjustment, public awareness presents unique challenges to encourage informed and responsible decisionmaking at all levels. It was discussed that Tracy Meehan, former Assistant Administrator for Water at EPA, was an expert who should be utilized.

Ms. Medlock noted that the Forum's findings and recommendations could help inform, not supersede the NCLS' work. Finally, Ms. Medlock announced the upcoming 2009 ASFPM Foundation symposia on defining and communicating risk, and the 2010 Forum.

Ms. Medock's full briefing is available to Committee members.

FRIDAY, 10 OCTOBER 2008

Review of Draft Strategic Plan Outline Discussion
Committee members discussed the important elements of what comprised a strategic plan and the process for doing so. This included a recommendation to develop the content first and then organize it into a compelling 'story'. The Committee made several suggestions to the outline provided; decided it would need further discussion, but agreed that all the big pieces were there.

The Committee is primarily responsible for the recommendations and reviewing and commenting on the other sections. Mr. Halpin said he would take the input and revise the outline including who would be doing what sections.

Confirmation of Project Management Plan and Vision

The Committee members reviewed and made real-time edits to the PMP, including reflecting agreed-upon meeting date changes, clarifying certain language, adding signature lines for non-voting members, and editing members' names and titles. It was agreed that Sam Riley Medlock could serve as the ASFPM representative on the Committee in place of Larry Larson. Mr. Stockton confirmed this change.

Each Working Group then conducted a detailed briefing of what they had discussed the night previously, such as initial assumptions, preliminary/initial objectives and recommendations, questions that they needed to solve, and information needs. Appendix D contains the report-back sheets from the Working Groups.

Based on these briefings, the group discussed such issues as speakers that they might want for briefings, how to clarify roles and responsibilities for policy-making, and how to incorporate other federal agency (e.g. FEMA) guidelines. These speakers, topics and the scores are found in Appendix E

APPENDIX A

Revised "Preamble" for the Performance Management Plan
or
Edgy, Bold Statements to Guide Our Deliberations
and be Included in the Context of This Report

(1) We hold certain levee truths to be self evident:

- There is currently no National policy relating to the safety of levees.
- The number and location of all the levees in the U.S. is currently unknown.
- Levees are now abundant and integral to economic development in many communities in the United States
- Floodrisk management involves a plethora of strategies, techniques and tools. However, in many instances, levees have been the primary tool.
- Although proven beneficial in investment and function, levees have inadvertently increased flood risks in the country by attracting development in the flood plain
- Levees only reduce the risk to individuals and structures behind them. They do not eliminate the risk.
- Government officials and the general public often have only a limited understanding of levees and the risks associated with them
- Many levees were originally constructed without the benefit of modern engineering techniques and provide only limited protection to communities.
- Many levees originally constructed to protect agricultural fields now protect large urban communities
- Many urban areas protected by levees, particularly those in deep floodplains, have an unacceptably low level of flood protection and an unacceptably high risk. Failure of such levees can result in high loss of life, property damage, and economic losses. This is a national security issue.
- The reliability of levees is not commonly known, even to those entities that operate and maintain them.

- Safety programs can and should provide improved public safety through the close scrutiny of levee conditions and risks posed, and the communication of those findings to decision makers and affected populations

(2) In developing our strategic plan and recommendations for a National Levee Safety Program, we must focus our work on those foundational elements defined in the Levee Safety Act that distinguish the broader issues of Flood Risk Management from those issues specific to Levee Safety, namely:

- Sound technical practices to levee design, construction, operation, assessment, security, and maintenance

- Effective public education and awareness of risks involving levees

- Competent safety programs for existing levees that emphasize the protection of human life

- Feasible governance solutions at all levels of government that encourage and sustain effective safety programs

(3) In order to achieve our stated purposes, the above four aspects of Levee Safety must be the Committees' primary focus. Although we may identify other goals and connectivity with related flood risk management elements such as insurance, floodplain management, evacuation, and building codes, such elements are too broad and complex to be answered within the scope of a Levee Safety Program.

APPENDIX B

NCLS Draft Vision Statement Inputs

- Vision
    - Increase public safety
    - Minimize public expenditures and economic losses
    - An effective levee safety program implemented in conjunction with other non-structural risk reduction measures will increase public safety and minimize public expenditures and economic loss
    - A nation safely reducing flood risk
    - A nation with reduced flood risk through levees
    - A nation where development and flood protection are complimentary
    - A nation more resilient to flood risk
    - A nation with no unanticipated consequences of flooding
    - A nation aware of its flood and levee risks
    - Informed and responsible levee operators/owners, publics and government
    - Every levee is a safe levee, performing reliably, protecting lives and property, and managing actions to match risk
    - Losses due to failures almost eliminated
    - Levees are well maintained, reliable
    - Levees (new) only used where, when, how appropriate
    - No Development in high risk zones
    - Educated and aware governments and public on risks
    - Better informed decision-making at all levels

- Improvements and Problems Solved = Public is Safer
    - Inventory of levees
        - Assessment of reliability
        - Identification of areas protected
        - Widespread levee improvements
        - O&M
        - Inspections / assessments
        - Systems well understood

    - Reliable levees
    - Nationally accepted engineering standards
    - Increased awareness of risk including residual risk
    - Discussion of tolerable risk
    - Accountability / responsibility/shared responsibility (insurance, emergency evacuation)
    - Higher priority: funding
    - Improved land use policies (zoning, building standards)
    - Creation of national levee safety policies
    - National program with implementation at state level
    - Acknowledgement of safety issues

- Leadership to work together at all levels to reduce risks -- collaboration
- Individuals learn to understand risk (stop avoidance) and their role in dealing with it -- personal and shared responsibility
- Integrate land use decisions with public safety
- Discontinue practice of inhabiting / developing high hazard, unsustainable areas
- Re-establishing and re-inhabiting areas where floods have wrought destruction
- More funding / resources spent at all levels up front that leads to overall smaller expenditures (loss/recovery) over time
- Well-maintained and operated levee systems
- Informed, responsible society
- Better floodplain management
- No unanticipated consequences of floods within levee system
- Properly designed and constructed levee systems appropriate to risk
- Seamless communication and cooperation between all partners and leveraging
- All systems inventoried and evaluated
- Stable and reliable funding source
- Levee systems integrated with innovative non-structural flood risk reduction solutions
- Uniform application of levee safety program in all states
- Public safety is the highest priority
- Contained floodwaters
- Prepared/planned flood response
- Less people / critical infrastructure in harm's way
- Plan formulation process
- National perspective in decision-making and a national appreciate for their importance
- Public awareness / education
- Technical assistance
- Authorizations / permitting
- Personal and organizational responsibility realized -- behavior matches risk
- Incentives and disincentives are robust and effective
- Public-private actions aligned to support / guide decisions
- Effective understanding of residual risks
- Levees are managed in a systems approach complimentary to floodrisk management

APPENDIX C

Version of the PMP Committee Members Signed on October 10, 2008

Project Management Plan

For The National Levee Safety Act of 2007, Committee on Levee Safety
October 7, 2008

Document History:

	Date	Description & Location within PMP of Revision	date Approved	Approved by
Original PMP				
Revision # ___				

PMP ACCEPTANCE SHEET

I have reviewed this document and certify that it contains accurate content and is sufficient to guide project execution.

_____ _____
Steve Stockton, P.E., Committee Chair Date
Government Representative

_____ _____
Douglas Bellomo, P.E., Committee Member Date
Government Representative

_____ _____
Donald Basham, P.E., Committee Member Date
Private Sector Representative

_____ _____
Leslie F. Harder, Jr., Ph.D., P.E., G.E., Committee Member Date
Private Sector Representative

_____ _____
Karin M. Jacoby, P.E., J.D., Committee Member Date
Local/Regional Agency Representative

_____ _____
Dusty Williams, P.E., Committee Member Date
Local/Regional Agency Representative

_____ _ _____
John Dorman, Committee Member Date
State Agency Representative

_____ _____
Edwin Matsuda, P.E., C.F.M., Committee Member Date
State Agency Representative

_____ _____
Rodney G. Mayer, P.E., G.E., Committee Member Date
State Agency Representative

_____ _____
P. Paul Perri, P.E., Committee Member Date
State Agency Representative

_____ _____
Michael Stankiewicz, P.E., Committee Member Date
State Agency Representative

_____ _____

Jon Sweeney, P.E., Committee Member Date
State Agency Representative

_____ _____

Marilyn Thomas, P.E., C.F.M., Committee Member Date
State Agency Representative

_____ _____

Robert Turner, Jr., P.E., Committee Member Date
State Agency Representative

_____ _____

David Lewis, Ph.D., Committee Member Date
Indian Tribe Representative

_____ _____

Vacant, Committee Member Date
Indian Tribe Representative

_____ _____

Susan Gilson, Non Voting Committee Member Date
National Association of Flood and Stormwater
Management Agencies

_____ _____

David F. Garcia, P.E., Non Voting Committee Member Date
City of Dallas Flood Control District

_____ _____

Steve Verigin, P.E., G.E., Non Voting Committee Member Date
Association of State Dam Safety Officials

_____ _____

Sam Riley Medlock, C.F.M., J.D., Non Voting Committee Date
Member, Association of State Floodplain Managers

Table of Contents

PROJECT MANAGEMENT PLAN..... 32

PMP ACCEPTANCE SHEET 32
1.0 SCOPE OF WORK:..... 36
1.1 Project Requirements Statement:..... 36
1.2. Scope Management Plan:..... 36
2.0 VOTING COMMITTEE MEMBER ROLES AND CONTACT INFORMATION .. 36
2.1 Committee Chair – Secretary's designee..... 37
2.2 Administrator of FEMA's designee..... 37
2.3 State agency representatives..... 37
2.4 Private sector representatives..... 38
2.5 Local/regional governmental agency representatives. 38
2.6 Indian tribe representatives..... 38
2.7 Proxy for Committee Chairman..... 38
3.0 NON VOTING COMMITTEE MEMBERS ROLES AND CONTACT INFORMATION..... 38
4.0 NON VOTING MEMBERS SUPPORTING THE COMMITTEE 38
5.0 COMMITTEE MEMBER RESPONSIBILITIES 39
6.0 COMMITTEE OPERATING PRINCIPLES..... 40
7.0 COMMITTEE WORKGROUPS 40
7.1 Proposed Technical Assistance Workgroup..... 40
7.2 Proposed Public Awareness Workgroup..... 40
7.3 Proposed Levee Safety Program Development Workgroup..... 40
7.4 Proposed State Implementation Workgroup..... 41
7.5 Workgroup Tasks and Products.....11
7.6 Support from USACE to Workgroups.....11
8.0 MEETING OBJECTIVES:..... 42
8.1 Milestones/Meeting Schedule: 42
9.0 COMMITTEE QUALITY CONTROL OBJECTIVES: 45
10.0 RISK ANALYSIS 45
11.0 SAFETY AND OCCUPATIONAL HEALTH PLAN..... 45
12.0 CHANGE MANAGEMENT: 45
13.0 COMMUNICATIONS:..... 46
14.0 CLOSEOUT PLAN.....15

The Project Management Plan

The content of the PMP is dictated by the five tasks key to the success of a project. Those five key tasks for project success are:

- obtaining agreement on project goals and expectations;
- developing a plan for acquiring and delivering a project that meets customer expectations, objectives, and needs;
- establishing a good internal and external communications strategy;
- defining and controlling the scope of the project; and
- defining the resources necessary for project success.

1.0 SCOPE OF WORK

1.0 SCOPE OF WORK

The Committee shall submit to the Secretary, the Committee on Transportation and Infrastructure of the House of Representatives, and the Committee on Environment and Public Works of the Senate the implementation strategy to accomplish the requirements of Title IX, Sections 9001-9006, National Levee Safety Act of the Water Resources Development Act of 2007 for approval. The purpose of the committee is to develop recommendations for a national levee safety program, including the strategic plan for implementation. Recommendations shall address the nine program goals named in the Act.

1.1 Project Requirements Statement

Approval is required to start the implementation strategy and provide direction on how to obtain required resources.

1.2. Scope Management Plan

This process will require the committee chair to oversee and provide direction to committee members to ensure the focus of the committee embraces the nine goals of Title IX, Sections 9001-9006, National Levee Safety Act of the Water Resources Development Act of 2007. Senior leadership will be updated weekly on the progress of the committee.

2.0 VOTING COMMITTEE MEMBER ROLES AND CONTACT INFORMATION

The committee consists of sixteen voting team members comprised of the Secretary's designee, the administrator of FEMA's designee, and fourteen members appointed by the Secretary. The fourteen members are composed of eight representatives of State levee safety agencies, one from each of the eight civil works divisions of the Corps of Engineers, two representatives from the

private sector who have expertise in levee safety, two representatives of local and regional governmental agencies who have expertise in levee safety, and two representatives of Indian tribes who have expertise in levee safety.

2.1 Committee Chair – Secretary's designee

Mr. Steve Stockton, Federal Government Representative, U.S. Army Corps of Engineers

Committee Chair Responsibilities

- Head the committee through inspired leadership, support, and motivation.
- Address/remove organizational "barriers" to success.
- Communicate progress with the senior leadership.
- Support team progress and organizational focus.
- Ultimate decider on disputes.
- Establish Vice-Chair Position within USACE to carry out day to day activities and voting proxy.

2.2 Administrator of FEMA's designee

Mr. Doug Bellomo, Federal Government Representative, Federal Emergency Management Agency

Administrator of FEMA Responsibilities

- Provide guidance pertaining to the National Flood Insurance Program (NFIP), including flood hazard mapping, mitigation programs, community rating system, levee certification, and other FEMA initiatives.
- Assist in formulation of the program objectives and recommendations.

2.3 State agency representatives

Mr. John Dorman, North Carolina Department of Crime Control and Public Safety

Mr. Edwin Matsuda, Hawaii Department of Land and Natural Resources

Mr. Rod Mayer, California Department of Water Resources

Mr. Paul Perri, Colorado Safety of Dams Program

Mr. Mike Stankiewicz, New York Department of Environmental Conservation

Mr. Jon Sweeney, State of Arkansas

Ms. Marilyn Thomas, Kentucky Division of Water

Mr. Robert Turner, Southeast Louisiana Flood Protection Authority-East

2.4 Private sector representatives

Mr. Les Harder

Mr. Donald Basham

2.5 Local/regional governmental agency representatives

Ms. Karin Jacoby, Water Services Department, City of Kansas City, Missouri

Mr. Dusty Williams, Riverside County Flood Control and Water Conservation District

2.6 Indian tribe representatives

Mr. David Lewis, Confederate Tribes of Grand Ronde

2.7 Proxy for Committee Chairman

Mr. Eric Halpin, Special Assistant for Dam and Levee Safety, U.S. Army Corps of Engineers

3.0 NON VOTING COMMITTEE MEMBERS ROLES AND CONTACT INFORMATION

In addition to the sixteen voting team members persons nominated who bring significant skills to the committee will participate as a non-voting member. Non-voting member participation is critical and the member responsibility is the same as voting members. Non-voting team members have been identified as:

Mr. David Garcia, City of Dallas Flood Control District

Ms. Sam Riley Medlock, Association of State Floodplain Managers, Inc.

Mr. Steve Verigin, GEI Consultants, Inc.

Ms. Susan Gilson, National Association for Flood and Stormwater Management Agencies

4.0 NON VOTING MEMBERS SUPPORTING THE COMMITTEE

In addition to the sixteen voting members and four non voting members additional non-voting members will be supporting the committee. These members include:

Ms. Tammy Conforti, Levee Safety Program Manager

Mr. Steven Spagna, Committee Project Manager, U.S. Army Corps of Engineers

Carol Sanders, HQ Public Affairs Officer, U.S. Army Corps of Engineers

Levee Policy & Procedure Team Member TBD

National Levee Database Member (ERDC-CRREL).

5.0 COMMITTEE MEMBER RESPONSIBILITIES

- Provide guidance pertaining to breadth of experience working with levee safety.

- Utilize professional experience, technical background, and leadership and communication skills to develop recommendations for the National Levee Safety Program. Recommendations shall include a strategic plan for implementation of the program and shall address the nine program goals named in the Act.

- Committee members will be required to commit their time for a two year span, with no financial compensation, except for travel. It is estimated committee members' time commitment will be 75% in year one and 15% in year two.

- Committee members will be required to attend the meetings listed in the meeting schedule.

- Committee members have agreed on the following norms for conducting their workgroup and full Committee meetings:

    1. Seek to understand first; persuade second.
    2. Focus on the topics and issues, not the person.
    3. Police your own desire to explore a tangent.
        i. Ask yourself, "Is this question or comment relevant to the task at hand?"
        ii. Always keep the end in mind.
    4. Come prepared to participate at meetings. Read materials. Do homework.
    5. If you cannot attend a meeting, ensure you are up to speed on the decisions and progress at the last meeting.
    6. Committee should benefit from your "local" experience and perspectives, but keep your focus national.
    7. Do not share the deliberations of this Committee. Materials that may be shared include: WRDA IX, charter, membership, documents on website (group will decide when to post). Any press inquiries should be directed to Eric Halpin, Vice Chair of the Committee.

6.0 COMMITTEE OPERATING PRINCIPLES

- The committee is a working committee, centrally led and de-centrally executed.
- The committee chairperson is the ultimate decider.
- Committee consensus or simple majority.

7.0 COMMITTEE WORKGROUPS

Committee members will be divided into four work focus groups identified as strategic plan objectives. Committee Workgroups will integrate a USACE member with each group. Groups will be led by voting committee members with supplemental technical team members added as needed. The four workgroups are listed below. The Secretary's designee will appoint the leader of each work group.

Workgroup 1: Technical Assistance (Objectives 2, 7, 8, 9)
Workgroup 2: Public Awareness (Objectives 5, 6)
Workgroup 3: Levee Safety Program Development (Objectives 1, 4)
Workgroup 4: Implementation (Objective 3 and linking all other objectives)

7.1 Proposed Technical Assistance Workgroup

Group Lead: Mr. Les Harder

Group Members: Mr. Donald Basham, Mr. Dusty Williams, and Mr. Steve Verigin.

USACE staff support: TBD

7.2 Proposed Public Awareness Workgroup

Group Lead: Mr. Robert Turner

Group members: Mr. David Lewis, Mr. Doug Bellomo, Mrs. Marilyn Thomas and Mr. John Dorman

USACE staff support: Ms. Carol Sanders

7.3 Proposed Levee Safety Program Development Workgroup

Group Lead: Ms. Karin Jacoby

Group Members: Mr. Paul Perri, Ms. Susan Gilson, and Mr. Rod Mayer

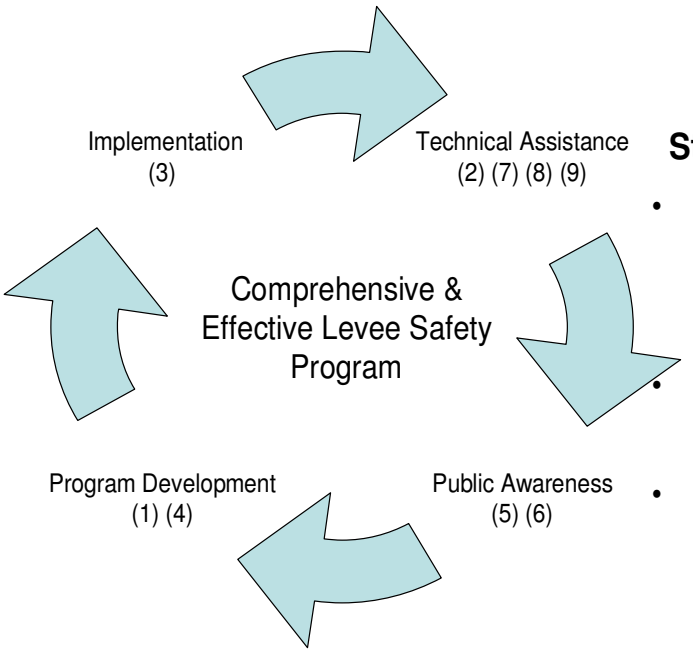
USACE staff support: Mr. Steven Spagna

7.4 Proposed State Implementation Workgroup

Group Lead: Mr. Mike Stankiewicz

Group Members: Mr. David Garcia, Ms. Sam Riley Medlock, Mr. Edwin Matsuda and Mr. Jon Sweeney

USACE staff support: Mr. Eric Halpin



Strategic Plan Objectives

- Technical Assistance
  - (2) Policies and procedures
  - (7) Materials
  - (8) Assistance methods
  - (9) Physical Integrity (Security)
- Public Awareness
  - (5) Public Education
  - (6) Residual Risk
- Program Development
  - (1) Technologically, economically, socially, and environmentally feasible programs & procedures
  - (4) Inspection & Inventory (O&M)
- Implementation
  - (3) Effective program that can be delegated with incentives & disincentives

7.5 Workgroup Tasks and Products

Step One: Ask clarifying questions on goals within workgroup purview. Suggest any additional goals.

Step Two: Present questions and suggested additions to full Committee.

Step Three: Formulate questions that would need to be answered to make recommendations for goals within workgroup purview. Identify data, input, advice needed for formulation of recommendations.

Step Four: Present logic map/diagram with key questions and needed data to plenary for discussion.

Step Five: Work with Committee staff (chair and facilitator) to get data and inputs needed. Decide which inputs whole committee needs to understand.

Step Six: Analyze information, answer questions, formulate recommendations. Recommendations for each goal should include:

- Main steps of implementation
- Rationale
- Timing
- Funding
- Governance
- Authorities
- Leverage and impacts on other programs
- Metrics

7.6 Support from USACE to Workgroups

- Logistics for meeting space, conference call number
- 1 staff person to assist with organizing, deliberations, and documentation
- Reach back to identify experts, get reports, some analysis

8.0 MEETING OBJECTIVES:

First 3 months—Between now and January 15th, meet in full Committee six times.

Next 21 months—meet sporadically as needed.

8.1 Milestones/Meeting Schedule:

Initial committee meeting	6 Oct – 10 Oct 08
2nd Committee Meeting	20 Oct – 24 Oct 08
3rd Committee Meeting	4 Nov – 8 Nov 08
4th Committee Meeting	17 Nov – 21 Nov 08

5th Committee Meeting	8 Dec – 12 Dec 08
6th Committee Meeting	5 Jan – 9 Jan 09
Submit Report	15 Jan 09

To ensure progress, individual workgroups will need to meet regularly at the discretion and organization of workgroup leaders. These meetings have been scheduled in between committee meetings. Workgroup meeting dates are scheduled for the weeks of October 13th, November 10th, December 1st, December 15th, and December 29th. Additional review and agency notice/coordination will occur January 12-14, with the completed report submitted on January 15, 2009. Refer to the attached calendar for additional information.

High-Level Meeting Plan for Committee Meetings 1-3

#1 Developing A Common Foundation and Operating Norms	Working Group Product: map key questions and data needed to goals in workgroup, present possible new goals and clarifying questions. Identify initial data needed (steps 1-5)	#2 Identifying Key Questions and Mapping Them to the Acts Goals	REVIEW TEAM: OCTOBER 30TH (confirm key questions as related to goals)	Working Group Product: presentation at plenary for recommendations by goal (steps 5 & 6)	#3 Building the Report One Goal at a Time, Analysis & Recommendations Generation	Working Group Product: presentation at plenary for recommendations by goal (steps 5 & 6)
Date: October 6-10, Landsdowne, VA		**Date**: October 20-24, Grapevine, TX			**Date**: November 4-8, New Orleans, LA	
Objectives: • Charter • Project Mgmt Plan • Establish Working Groups • Confirm Schedule • Develop Vision		**Objectives:** • Develop key questions that need to be answered • Articulate data and information needs • Confirm workgroup specific : plans and report outs			**Objectives:** • Incorporate Review Team comments on goals and questions • Identify new data • Review drafts of initial sections of the strategic plan	
Tasks: • Background presentations • Vision discussion • Develop Operating Norms • Organize Working Groups		**Tasks:** • Review questions generated by workgroups and agree on final set of questions and goals • Resolve any questions of clarification about scope • Develop draft goals outline for the Review Team			**Tasks:** • Review and comment on recommendations and their rationale from working groups • Agree on interim recommendations for some goals • Review and comment on background sections of plan	

High-Level Meeting Plan for Committee Meetings 4-6

#4 Building the Report One Goal at a Time, Analysis & Recommendations Generation	Working Group Product: revised recommendations and comments on other working group recommendations	REVIEW TEAM: DECEMBER 12TH (review of draft recommendations)	#5 Incorporating Feedback from Draft Plan	Working Group Product: revised recommendations and comments on other working group recommendations	PUBLIC WORKSHOP : JANUARY 6TH OR 7TH	#6 Finalizing Decisions, Describing Consensus
Date: November 17-21, Deerfield Beach, FL			**Date**: December 8-12, Landsdowne, VA			**Date**: January 5-9, Landsdowne, VA
Objectives: • Incorporate Review Team comments on goals and questions • Identify new data • Review drafts of initial sections of the strategic plan			**Objectives:** • Complete first cut of complete plan • Identify any gaps that need to be filled before final meeting • Identify any areas where consensus has not yet been reached • Agree on principals and main tasks of roll out plan			**Objectives:** • Develop final draft of plan • Describe any areas where consensus could not be reached • Finalize rollout plan. • Confirm initial legislative language
Tasks: • Review and comment on recommendations and their rationale from working groups • Agree on interim recommendations for some goals • Review and comment on background sections of plan • Complete guts of recommendation session			**Tasks:** • Review first draft of complete strategic plan • Review draft roll out plan • Describe needs for legislative language and assign authors			**Tasks:** • Attend public meeting. • Review comments and feedback from public meeting. • Discuss implementation and participation in rollout plan.

9.0 COMMITTEE QUALITY CONTROL OBJECTIVES

It's anticipated that successful completion of this project will provide USACE senior leadership with the implementation strategy to accomplish the requirements of Title IX, Sections 9001-9006, National Levee Safety Program of the Water Resources Development Act of 2007 for approval.

- Project quality control will be maintained and monitored by the committee workgroups. Oversight of the quality control process will be the responsibility of the committee chair.

- Quality assurance will be ensured through external peer and public review of products developed by the committee work groups. Review team members will include Mr. Godfrey Garza, Ms. Geneva Grille, Mr. Ray Hart, Mr. David Miller, Mr. Subhas Shah, Mr. Matt Sherer, Mr. George Sills, Mr. Rob Vining, Mr. Mitchell Cyprus, Mr. Ben Carter, ACEC, APWA, AWRA, CVFPB, DOT, FERC, FHWA, HCDD, IBHS, MRC, ASA CW & HQ USACE staff, FEMA, USBR, BIA, NEMA, NPS, NWS, NOS, SAFCA, SBA, TVA, USBR, DOI, EPA, USFWS, USFS, USGS, HUD, USSD, NRCS, IBWC, ASCE, ASDSO, NAFSMA, ASFPM, ACEC, T&I and E&PW Committee Staffers, and National Academies.

10.0 RISK ANALYSIS

The following risks have been identified with this project. Each risk will be managed to limit impacts on productivity and the workforce as they are encountered.

- Committee member availability / commitment.
- Lack of participation
- Comment resolution
- Schedule

11.0 SAFETY AND OCCUPATIONAL HEALTH PLAN

Meetings will be held at the National Conference Center in Lansdowne, VA. Local safety instructions will be followed.

12.0 CHANGE MANAGEMENT

It is expected that the scope and schedule outlined in this document will be adhered to and accomplished. Major changes to this plan will be approved by the Secretary and/or his designee, and the PMP will be revised and approved by the original approvers of this document.

13.0 COMMUNICATIONS

The members of each workgroup are responsible for communicating to their respective counterparts and developing the necessary recommendations to provide USACE senior leadership with the implementation strategy to accomplish the requirements of Title IX, Sections 9001-9006, National Levee Safety Program of the Water Resources Development Act of 2007 for approval.

Committee members will communicate through facilitated meetings, email, conference calls, shared folders and/or a website. Effective communication is critical to the success of the committee. Group leads will provide weekly updates to the vice chair, LSPM, and PM on workgroup progress. The committee will determine meeting frequency and formats.

14.0 CLOSEOUT PLAN

After the committee achieves acceptance from the senior leadership committee recommendations will be submitted for approval and implementation.

CHANGE REQUESTS

Request No.	Date Approved/Rejected	Subject

APPENDIX D

Working Group Report-Back Briefings: 10 October 2008

Working Group #1 (Technical Assistance)
Les Harder, Donald Basham, Dusty Williams, Steve Verigin.

I. Purpose

Develop recommendations for a national levee safety program, including a strategic plan for implementation of the program

II. Group 1 Goals

(2) Encouraging use of the best available engineering policies and procedures for levee site investigation, design, construction, operation and maintenance, and emergency preparedness.

(7) Developing technical assistance materials for State and national levee safety programs.

(8) Developing methods to provide technical assistance relating to levee safety to non-federal entities.

(9) Developing technical assistance materials, seminars, and guidelines relating to the physical integrity of levees in the United States.

III. Assumptions

1. Assume that Group 1 Work Group will prepare recommendations regarding technical procedures and guidance for the inspection of levees while Work Group 3 will address policies and implementation of inspections under Goal 4.

2. Assume that engineering policies, procedures, and technical assistance will include the following:
   - Levee investigations
   - Geotechnical explorations and site characterization
   - Geotechnical evaluations and analyses
   - Hydrologic and hydraulic analyses
   - Structural analyses
   - Seismic evaluations
   - Levee Penetrations (e.g. pipelines)
   - Construction administration and inspection

- Operations and Maintenance (including vegetation management)
- Encroachments
- Security
- Risk Analysis, including levee fragility evaluations
- Performance Instrumentation
- Emergency Preparedness and Response, including Emergency Action Plans
- Evacuation
- Mapping

3. Assume that we will recommend Levee Definitions/Classifications be established involving:
   - Areas protecting urban, urbanizing, and non-urban
   - Levees vs. canals
   - Potential depth of flooding
   - Duration of water retention
   - Height of embankment

4. Assume that Group 1 will recommend that different procedures/criteria should be developed based on Levee definition/classification.

IV. Preliminary/Initial Objectives

1. Development of engineering policies, procedures, and criteria that will be uniformly accepted and adopted for use at all federal, state, and local levels.

2. Technical assistance programs will be funded at the federal and state levels to provide practical guidance for State, regional, and local agencies.

V. Preliminary/Initial Recommendations

1. Recommend that Corps begin using developed Levee definitions/classifications for levee inventory/inspections – will lead the way for States and others to follow.

2. Recommend that engineering policies, procedures, and criteria will be developed as follows:
   - Corps will take the lead
   - State, local, and private sector will be involved in development
   - Independent Peer Review/Consulting Boards will provide recommendations
   - Additional review by National Academy of Sciences
   - Available for State, regional, local, and private sector use
   - Scheduled for periodic review and upgrade

3. Assume that revised engineering criteria will be required by FEMA for certification.

4. Recommend that canal embankments treated very differently than levees with regard to policies and engineering criteria - very different types of structures, ownership, consequences, and responsibilities.

5. Recommend extensive Peer Review Programs.

6. Recommend that a Levee Performance Database be established at the federal level managed by the Corps with input from all levels of public and private organizations.

7. Recommend that a Research and Development (R&D) program be funded at the federal level, with contributions from States.

8. Recommend that State-federal partnerships be developed to establish training programs for levee design, maintenance, and inspection.

9. Recommend that a Levee Professional Certification Program be established.

10. Recommend that an Annual National Levee Safety Conference be sponsored jointly by the Corps and FEMA (and USBR?).

VI. Issues/Questions to Resolve

1. Should Committee on Levee Safety provide recommendation for initial Levee definitions/classifications?

2. Policy impacts of improved engineering criteria/policies – who has to use it and consequences of not using it?

3. How to fund development of engineering procedures/criteria etc… by Corps and other partners?

4. How to obtain acceptance of engineering procedures/criteria etc…extensive involvement by parties other than the Corps?

5. How to fund/ensure future upgrades and maintenance of criteria?

6. How to require FEMA certification to use improved criteria – legislation?

7. Schedule for development/implementation?

8. What to use in the interim?

9. Policies for changes in criteria – projects grandfathered?

VII. Information Needed

1. Legislative history for National Levee Safety Act

2. Legislative history for National Dam Safety Act

3. Briefing on how National Dam Safety Program Act currently operates and performs, and how it should have been implemented differently – lessons learned.

4. Briefing on delegated programs: NPDES, Surface Mining, Clean Water Act, etc…

5. Briefing by Corps on what would it take for the Corps to administer "pass-through" programs.

6. Briefing and summary documents (in English) on Dutch practice for Levee design, maintenance, inspection, etc…

7. Copies of Corps design, construction, maintenance, inspection, instrumentation, etc… technical manuals, guidance etc…

8. Copies of California (and other relevant State) design, construction, maintenance, inspection, instrumentation, etc… technical manuals, guidance etc…

9. Briefing on Corps plans and schedule for upgrading levee technical manuals and tool boxes, and policies associated with them

10. Briefing by FEMA on plans to adopt Corps R&U and other approaches for use in levee certification.

Working Group 2 (Public Assistance)
Robert Turner, Marilyn Thomas, Doug Bellomo, Bill Blanton, John Dorman, Pete Pierce, Carol Sanders, David Lewis, Edwin Matsuda

Questions and Information Needs
10/8/2008

(5) Developing and supporting public education and awareness projects to increase public acceptance and support of State and National Levee Safety Programs.

Questions:

- Who will be the target audience?
- How do you define public acceptance and support?
- How can the program be funded?

- Who within the national levee safety program should develop public education and awareness projects (subcommittee of National Levee Safety Board)?
- Who can best administer – (what level of government)?
- What's the most effective way to disseminate information to target audience?
- What existing successful public awareness programs might be leveraged to assist or complement this effort (FEMA, USACE, States, NGO's)?
- What means can be used to measure success?

(6) Building public awareness of the residual risks associated with living in levee protected areas.

Questions:

- What is the definition of residual risk (in terms that a layman can understand)?
- Who will determine the residual risk for people living within a particular levee system?
- Who can best deliver the information regarding residual risk to those at risk - (what level of government)?
- How can the program be funded?
- Is awareness enough – (what about actions)?
- What means can be used to measure success?

Consider modifying goal (6) to include residual risks associated with living **and working** in levee protected areas."

Information Needs:

- IPET Risk Analysis
- HPDC Report
- Info on FEMA public education programs and risk communication (development, structure and administration)
- Structure of public awareness programs administered through National Dam Safety Program
- Info from ASDSO (outreach and guidance documents)
- POC's for experts in development of public awareness programs and risk communication
- Info on Ad Council (w/POC)

Working Group #3 (PDT)
Karin Jacoby, Paul Perri, Susan Gibson, Rod Mayer, Steve Spagna

Goals

1) Ensuring the protection of human life and property by levees through the development of technologically, economically, socially, and environmentally feasible programs and procedures for hazard reduction and mitigation relating to levees.

4) Ensuring that the levees are operated and maintained in accordance with appropriate and protective standards by conducting an inventory and inspection of levees.

Governance?

Existing Components
Federal
FEMA – Risk Map, DFIRMS, Risk Communication, Public Awareness

USACE – Inventory, Inspecting, Guidance

Possible Components of National Program
(Other Programs/Procedures)

Technical Assistance Incentive Programs
Public Awareness/Education
Training
Funding
Inspection
Eng. Design Standards/Criteria/Procedures
Permitting
Program Evaluation/Performance
Operations & Maintenance
Environmental
Risk Assessment/Analysis
Regulatory
Policy
Inventory
Risk Mitigation Program
Rehabilitation/Improvement
Security
Research & Development
Peer Review
Levee Professional Certification

Informational Needs

Is there a decision-making board comprised of federal and non-federal members that we should consider as a potential model?
Could such an entity make funding decisions with federally-appropriated funds?
How do they operate?

How large is the NFIP funding, program reach, premiums, how are rates set, how often are they adjusted? Where do insurance premiums go (to Treasury)? How many structures/people behind levees?

Ideas/Actions

Planning meeting in Denver October 27 & 28 to solicit input from state, local, regional subject matter experts:

Jack Byers - Former Deputy State Engineer
Kevin Houck - Colorado Water Resources Board
Urban Drainage & Flood Control District - TBD
Western Governors Association - Sean McGrath
Wyoming State Engineers Office - Sue Lowry
Natural Hazards Center - TBD

Monday, October 27, 2008 – 10:30 – 3:00 p.m.
Tuesday, October 28, 2008 – 8-10:30 p.m.

Questions/Considerations

How much money would it take to fund a robust program?

What rules, public-decision making procedures would be needed?

Could CRS be amended to review communities (by discounting premiums) in states with delegated authority? Could just the premiums in levees potential areas be adjusted? Pros & Cons?

Working Group #3 also developed a diagram relating to governance issues as attached below:

Working Group #4

Questions and Info Needs
10/10/2008

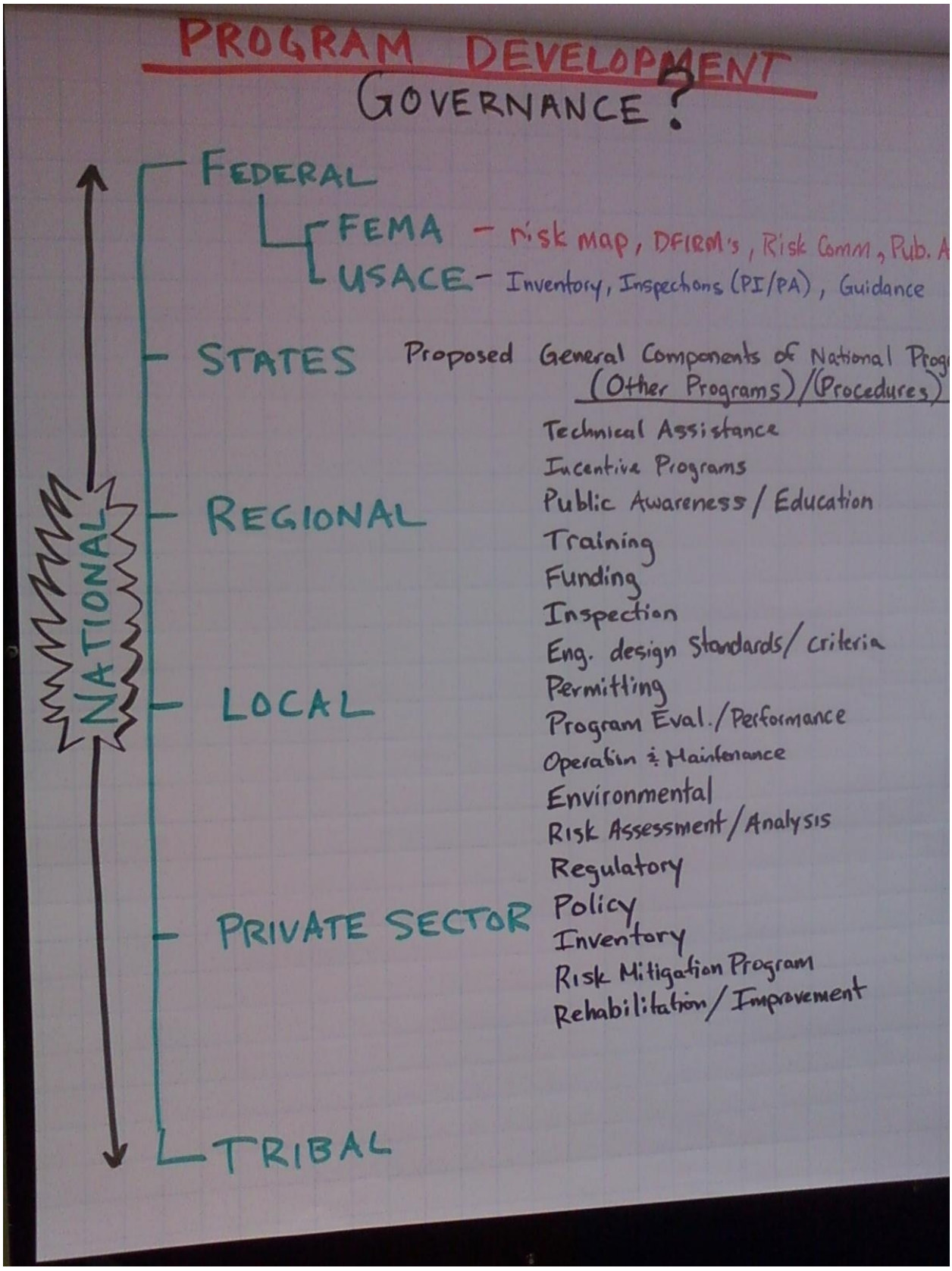
I. Attempt to answer clarifying questions about goal 3:
A. Establish national program, or only delegation aspects?
B. What functions can be delegated?
C. Can Feds delegate to local gov.?
D. Can delegated state further delegate to local gov., quasi-gov or private?
E. Could federal levees be regulated under delegated programs?
F. Qualified states – what qualifications?
G. What does "may be delegated" mean?

II. Identify questions to answer in order to make recommendations for goal 3:
A. What is meaning of ownership? (Who owns the levees?)
B. What are possible incentives and disincentives, and how could they be used?

III. Identify information needed to answer questions in "II", above:
A. Legislative history for Levee Safety Act (of interest to full committee)

B. Levee inventory data, O&M responsibility and ownership profile
C. Ownership of projects built by COE & local sponsor and turned over for O&M
D. History and operation of National Dam Safety Program (of interest to full committee)
E. Info on other delegated programs e.g. NPDES, Burec Surface Mining, Clean Air Act - Full Committee
F. Options and examples of regulatory program structures - Full Committee
G. Funding alternatives, examples in use for public safety programs - Full Committee

Notes:
Information item III.A is general and relates to both questions II.A &B.
Information items III.B & C relate to question II.B.
Information items III.D, E, F & G relate to question II.A.


PROGRAM DEVELOPMENT
GOVERNANCE?
FEDERAL
FEMA - Risk Map, DFIRM's, Risk Comm, Pub. A
USACE - Inventory, Inspections (PI/PA), Guidance
STATES
Proposed General Components of National Prog
(Other Programs)/(Procedures)
Technical Assistance
Incentive Programs
Public Awareness / Education
Training
Funding
Inspection
Eng. design Standards/ criteria
Permitting
Program Eval./Performance
Operation & Maintenance
Environmental
Risk Assessment/Analysis
Regulatory
Policy
Inventory
Risk Mitigation Program
Rehabilitation/Improvement
REGIONAL
LOCAL
PRIVATE SECTOR
TRIBAL
NATIONAL

Appendix E
Compilation of Desired Speaker and Briefing Information
By Whole Committee and Working Groups

WHOLE COMMITTEE

BRIEFING	OVERALL SCORE	RANKING High (H) Medium (M) Low (L)
Funding and Overall Governance • Tracy Meehan, former EPA AA for Water	37	H – 11 M – 2 L – 0
R &D as related to levees • Dr. Michael Sharp (USACE) compilation of ideas	15	H – 0 *M – 5* *L – 5*
Levee Security • Dr. Enrique Mathieu (DHS)	15	H – 1 *M – 4* *L – 4*
Risk and Informed Decision Making • Dr. David Moser (USACE lead for Actions for Change in this area)	32	H – 8 M – 4 L – 0
Risk Communication and Behavior Change • Peter Mitchell (Marketing for Change)	24	H – 4 M – 5 L – 2
Tolerable Risk • Dr. David Moser (USACE lead for Actions for Change in this area)	38	H – 12 M – 1 L – 0
Other Program Examples (delegation) • Mine Safety	20	H – 2 M – 6 L – 2
Other Program Examples (delegation) • Clean Water Act – NPDES	27	H – 5 M – 5 L – 2
Funding Ideas • Trust Fund/State Revolving Loan Fund	25	H – 4 M – 6 L – 1
Funding Ideas • Stormwater fees	21	H – 2 M – 6 L – 3
Funding Ideas • Municipal Bonds	21	H – 2 M – 6 L – 3

Interim Risk Reduction Measures	19	H – 4 M – 3 L – 1
Non-structural options • Larry Buss (USACE)	16	H – 2 M – 2 L – 6
Climate Change and Levees • Dr. Kate White (USACE)	18	H – 1 M – 5 L – 5
Flood Fighting and Emergency Management	15	H – 3 M – 1 L – 4
How to Develop Good Performance Metrics	28	H – 8 M – 1 L – 2
How to Develop Good Governance Structures	24	H – 5 M – 3 L – 3

WORKING GROUP 1

BRIEFING	**RANKING** **High (H)** **Medium (M)** **Low (L)**	
Funding and Overall Governance • Tracy Meehan, former EPA AA for Water	H – 0 M – 0 L – 1	1
R &D as related to levees • Dr. Michael Sharp (USACE) compilation of ideas	H – 2 M – 1 L – 0	8
Levee Security • Dr. Enrique Mathieu (DHS)	H – 0 M – 3 L – 1	7
Risk and Informed Decision Making • Dr. David Moser (USACE lead for Actions for Change in this area)	H – 1 M – 0 L – 0	3
Risk Communication and Behavior Change • Peter Mitchell (Marketing for Change)	H – 2 M – 1 L – 0	7
Tolerable Risk • Dr. David Moser (USACE lead for Actions for	H – 1 M – 0	3

Change in this area)	L – 0	
Other Program Examples (delegation) • Mine Safety	H – 0 M – 1 L – 1	3
Other Program Examples (delegation) • Clean Water Act – NPDES	H – 0 M – 0 L – 1	1
Funding Ideas • Trust Fund/State Revolving Loan Fund	H – 0 M – 1 L – 1	3
Funding Ideas • Stormwater fees	H – 1 M – 0 L – 1	4
Funding Ideas • Municipal Bonds	H – 1 M – 0 L – 1	4
Interim Risk Reduction Measures	H – 2 M – 0 L – 0	6
Non-structural options • Larry Buss (USACE)	H – 0 M – 1 L – 2	4
Climate Change and Levees • Dr. Kate White (USACE)	H – 0 M – 2 L – 1	5
Flood Fighting and Emergency Management	H – 0 M – 2 L – 2	6
How to Develop Good Performance Metrics	H – 0 M – 0 L – 1	1
How to Develop Good Governance Structures	H – 0 M – 0 L – 1	1

Additional information and briefings identified subsequent to the above voting:

- Legislative history for National Levee Safety Act
- Legislative history for National Dam Safety Act
- Briefing on how National Dam Safety Program Act currently operates and performs, and how it should have been implemented differently – lessons learned.
- Briefing on delegated programs: NPDES, Surface Mining, Clean Water Act, etc…
- Briefing by Corps on what would it take for the Corps to administer "pass-through" programs.
- Briefing and summary documents (in English) on Dutch practice for Levee design, maintenance, inspection, etc…

- Copies of Corps design, construction, maintenance, inspection, instrumentation, etc… technical manuals, guidance etc…
- Copies of California (and other relevant State) design, construction, maintenance, inspection, instrumentation, etc… technical manuals, guidance etc…
- Briefing on Corps plans and schedule for upgrading levee technical manuals and tool boxes, and policies associated with them
- Briefing by FEMA on plans to adopt Corps R&U and other approaches for use in levee certification.

WORKING GROUP 2

BRIEFING	**RANKING** **High (H)** **Medium (M)** **Low (L)**	
Funding and Overall Governance • Tracy Meehan, former EPA AA for Water	H – 2 M – 1 L – 0	8
R &D as related to levees • Dr. Michael Sharp (USACE) compilation of ideas	H – 0 M – 1 L – 2	6
Levee Security • Dr. Enrique Mathieu (DHS)	H – 0 M – 1 L – 2	4
Risk and Informed Decision Making • Dr. David Moser (USACE lead for Actions for Change in this area)	H – 3 M – 0 L – 0	9
Risk Communication and Behavior Change • Peter Mitchell (Marketing for Change)	H – 3 M – 0 L – 0	9
Tolerable Risk • Dr. David Moser (USACE lead for Actions for Change in this area)	H – 2 M – 1 L – 0	8
Other Program Examples (delegation) • Mine Safety	H – 2 M – 1 L – 0	8
Other Program Examples (delegation) • Clean Water Act – NPDES	H – 1 M – 2 L – 0	7
Funding Ideas • Trust Fund/State Revolving Loan Fund	H – 0 M – 3	6

	L – 0	
Funding Ideas • Stormwater fees	H – 0 M – 3 L – 0	6
Funding Ideas • Municipal Bonds	H – 0 M – 3 L – 0	6
Interim Risk Reduction Measures	H – 2 M – 1 L – 0	8
Non-structural options • Larry Buss (USACE)	H – 1 M – 0 L – 2	5
Climate Change and Levees • Dr. Kate White (USACE)	H – 0 M – 1 L – 2	4
Flood Fighting and Emergency Management	H – 1 M – 0 L – 2	5
How to Develop Good Performance Metrics	H – 3 M – 0 L – 0	9
How to Develop Good Governance Structures	H – 3 M – 0 L – 0	9

WORKING GROUP 3

BRIEFING	**RANKING** **High (H)** **Medium (M)** **Low (L)**	
Funding and Overall Governance • Tracy Meehan, former EPA AA for Water	H – 3 M – 0 L – 0	9
R &D as related to levees • Dr. Michael Sharp (USACE) compilation of ideas	H – 0 M – 0 L – 3	3
Levee Security • Dr. Enrique Mathieu (DHS)	H – 0 M – 1 L – 2	4
Risk and Informed Decision Making	H – 1	7

• Dr. David Moser (USACE lead for Actions for Change in this area)	M – 2 L – 0	
Risk Communication and Behavior Change • Peter Mitchell (Marketing for Change)	H – 1 M – 0 L – 2	5
Tolerable Risk • Dr. David Moser (USACE lead for Actions for Change in this area)	H – 1 M – 1 L – 1	6
Other Program Examples (delegation) • Mine Safety	H – 1 M – 0 L – 2	5
Other Program Examples (delegation) • Clean Water Act – NPDES	H – 2 M – 0 L – 1	7
Funding Ideas • Trust Fund/State Revolving Loan Fund	H – 3 M – 0 L – 0	9
Funding Ideas • Stormwater fees	H – 1 M – 2 L – 0	7
Funding Ideas • Municipal Bonds	H – 2 M – 0 L – 0	6
Interim Risk Reduction Measures	H – 1 M – 0 L – 0	3
Non-structural options • Larry Buss (USACE)	H – 0 M – 0 L – 2	2
Climate Change and Levees • Dr. Kate White (USACE)	H – 0 M – 1 L – 1	3
Flood Fighting and Emergency Management	H – 1 M – 0 L – 1	4
How to Develop Good Performance Metrics	H – 1 M – 0 L – 0	3
How to Develop Good Governance Structures	H – 2 M – 0 L – 0	6

Additional information and briefings identified subsequent to the above voting:

- IPET Risk Analysis
- HPDC Report

- Info on FEMA public education programs and risk communication (development, structure and administration)
- Structure of public awareness programs administered through National Dam Safety Program
- Info from ASDSO (outreach and guidance documents)
- POC's for experts in development of public awareness programs and risk communication
- Info on Ad Council (w/POC)

WORKING GROUP 4

BRIEFING	**RANKING** **High (H)** **Medium (M)** **Low (L)**	
Funding and Overall Governance • Tracy Meehan, former EPA AA for Water	H – 2 M – 0 L – 1	7
R &D as related to levees • Dr. Michael Sharp (USACE) compilation of ideas	H – 0 M – 0 L – 3	3
Levee Security • Dr. Enrique Mathieu (DHS)	H – 0 M – 0 L – 3	3
Risk and Informed Decision Making • Dr. David Moser (USACE lead for Actions for Change in this area)	H – 1 M – 1 L –1	6
Risk Communication and Behavior Change • Peter Mitchell (Marketing for Change) • Dr. Covello (Center for Risk Communication) • Fulton Communications (USACE training)	H – 1 M – 0 L – 1	4
Tolerable Risk • Dr. David Moser (USACE lead for Actions for Change in this area) • Greg Beacher from U of Maryland	H – 2 M – 0 L – 1	7
Other Program Examples (delegation) • Mine Safety	H – 2 M – 0 L – 1	7
Other Program Examples (delegation) • Clean Water Act – NPDES	H – 2 M – 0 L – 1	7
Funding Ideas • Trust Fund/State Revolving Loan Fund	H – 2 M – 0	7

	L – 1	
Funding Ideas • Stormwater fees	H – 2 M – 0 L – 1	7
Funding Ideas • Municipal Bonds	H – 2 M – 0 L – 1	7
Interim Risk Reduction Measures	H – 0 M – 0 L – 2	2
Non-structural options • Larry Buss (USACE)	H – 1 M – 0 L – 1	4
Climate Change and Levees • Dr. Kate White (USACE)	H – 1 M – 0 L – 1	4
Flood Fighting and Emergency Management	H – 0 M – 0 L – 2	2
How to Develop Good Performance Metrics	H – 0 M – 0 L – 1	1
How to Develop Good Governance Structures	H – 0 M – 0 L – 1	1

Reports, Papers, Presentations Recommended

- Copies of Presentations from Committee Meeting #1 – to be put up on website (S. Spagna)
- House Document 465 done by Gilbert White about strategic plan done on floodplain management – SRA
- ASFPM papers on legal liability – SRA
- Tracy Meehan's briefing at 2050 Forum
- Water Resources Gap Analysis – research on infrastructure funding – SRA
- Dutch briefings and MOA – T. Conforti
- Galloway Report – SRA
- Galloway's suggestions about funding and financial analyses – SRA
- Ken Smith and Brian Long speaking notes – SRA
- IPET – SRA to provide link to the Committee
- HCDC, including Peer Review – SRA
- LA Coastal Protection Report – SRA
- Legislative history of the Lower Mississippi – S. Spagna
- Profile of Levee Owners and what is in the USACE program – T. Pangburn

- Levee Safety Guidance – E. Halpin
- ASDSO survey of all states – E. Halpin
- USACE Guidance Update Management Program – E. Halpin