Flood Risk Management Program-
Results of Workshop on Research for
Woody Vegetation on Levees

As you log in online, please use the Chat feature to
identify yourself or your group. Example – ERDC EL
– Julie Marcy or ERDC EL – 6 attendees
Discussion Guide

• Please identify yourself/group via Chat if not apparent in the Participants list to include the number of participants.
• We are recording the meeting so a written transcript may be prepared.
• Identify yourself every time you speak.
• One person talks at a time, take turns.
• Use Chat feature to begin question session.
• Limit acronyms (define first time used).
• Use mute button when not speaking (quiet surroundings, cell phones on silent).
Agenda

• Introduction/Review discussion guide

20 Minutes:

• Welcome – Dr. Beth Fleming, Director, Environmental Lab, U.S. Army Engineer Research & Development Center (ERDC)

• Flood Risk Management – Mr. Pete Rabbon, Special Assistant to the Director, National Flood Risk Management Program

• Results of Research and Development (R&D) Workshop – Dr. Maureen K. Corcoran, Associate Technical Director, Water Resources Infrastructure, ERDC

40 Minutes:

• Questions and Discussion with Subject Matter Experts

• Next Steps
Flood Risk Management: Corporate Goal for Levees

In a collaborative and shared manner with resource agencies and levee sponsors, transition existing levees to Corps standards while maintaining Public Law 84-99 eligibility and adhering to the Endangered Species Act and other federal environmental laws.
Options

**System-Wide Improvement Framework (SWIF)**
- Worst-first
- Interim Progress Milestones
- Long-term Plan
- Regional Solutioneering Teams

**ETL 1110-2-571 Standards**
- Set-back Levees
- Planting Berms
- National Solutioneering Team
- Can be part of SWIF

**Vegetation Variance Process (PGL)**
- Environmental Considerations
- Technical Review
- Vegetation Management Plan
- Can be included in the SWIF
System-Wide Improvement Framework

- Sponsors maintain eligibility for rehabilitation assistance while improving levee systems.
- Incorporates "worst first" to optimize risk reduction.
- Encourages intergovernmental collaboration.
- Provides time to address both levee safety and environmental and Tribal considerations.
- Recognizes regional differences.
- Two phase process – Letter of Intent followed by SWIF.
Policy Guidance Letter (PGL) Vegetation Variance Request

- Levee vegetation standards provide for reliable access (for inspections, operation and maintenance, and flood fighting) and reduce potential direct impacts from roots.
- Permanent vegetation variance may be requested to meet unique, regional situations to preserve, protect, and/or enhance natural resources and/or protect rights of Tribal Nations.
- Safety, structural integrity, and functionality of the levee, and accessibility for inspection and flood fighting must be retained.
Next Steps for Achieving Corporate Goal

• Widely distributed SWIF policy last quarter CY2011.
• Post draft vegetation variance policy in Federal Register for public comment first quarter CY2012.
• Finalize vegetation variance policy after comment review.
• Support future research on woody vegetation in CY2012.
• Continue supporting regional collaborative efforts, such as in Washington and California.
Results of the Research and Development Workshop
Sacramento, CA
13-14 Dec 2011
Purpose of Workshop

• **Intent:** The intent of the workshop was to promote a national scientific discussion on the direction of future research to improve decision-making about existing, non-compliant vegetation on levee performance.

• **Objectives:**
  - Promote interaction between scientists.
  - Share key highlights of levee vegetation research.
  - Share suggested high priority research areas.
  - Identify and prioritize topics for future research of woody vegetation on levees.
  - Initiate a development plan for the research topics discussed at the workshop.
Workshop Participants

- 30 Participants
- Organizations
  - Biedenharn Group
  - HDR, Inc.
  - King County, WA
  - Sacramento Area Flood Control Agency
  - Univ of CA
    - Berkeley
    - Davis
  - Univ of Georgia
  - Federal Emergency Management Agency
  - National Oceanic & Atmospheric Administration
  - USACE
    - ERDC
    - HQ
    - Institute for Water Resources
    - Albuquerque District
    - Sacramento District
    - Seattle District
    - South Pacific Division
- US Fish & Wildlife
Workshop Principles

• USACE is moving toward risk assessment for levees; vegetation is one element of the broader risk assessment approach.

• Focus research needs on methods and tools to improve decision-making (short-term and long-term) about existing levees with non-compliant vegetation.

• Keep research topics and research questions narrowly focused and descriptive as opposed to listing general topics.

• Seek creative solutions and recognize regional considerations.
Breakout Sessions

• Documentation of Case Histories
• Analytical Tools and Methods for Levee Vegetation Condition Assessment to Support Levee Vegetation Variance Process
• Characterization of Non-Compliant Vegetation on Levees
• Risk Assessments
Case Histories

• Short-term
• Documentation of on the ground impacts
• Provide information for other areas – tools and risk assessments; development of interim guidelines for access; and creates a consolidated resource.

• Next Steps –
  • Scope of Work, 2-3 year effort
  • Peer Review of SOW
Analytical Tools and Methods

• Short-term to Mid-Term
• Support the variance process
• Scour/erosion model, improving geotechnical analysis methods when there is vegetation present; and field applications.

• Next Steps –
  • Scope of work for scour model within H&H Community of Practice
  • Further develop more detailed potential proposals
Characterization of Vegetation

- Mid-term to Long-term
- Not going to be able to analyze every tree
- Analyze representative situations by reach, including performance
- Consider statistical based relationships
- Information for risk assessments
- Next Steps –
  - Further develop potential proposal
Risk Assessments

- Long-term
- Identify vegetation impacts to failure-modes
- Look into expanding existing risk assessment tools
- Document consequences of removal
- Continue modeling work initiated on slope stability

Next Steps –
- Further develop proposal
- Coordinate with the USACE Risk Management Center

Depth = 1.25m
General Points of Discussion

• Vegetation remains complicated.
• Decisions on vegetation should be addressed in a risk context (includes negative or positive impacts).
• Develop SOWs for research approach then submit SOWs for both internal and external peer review.
Summary of USACE Actions

• Continue coordination with workshop participants for input of SOWs for scour/erosion analysis and case history studies.
• Submit SOWs for both internal and external peer review.
• Finalize SOWs and begin FY12 funded research.
Research & Development Contact

Note: Research is not constrained by topics discussed at workshop.

To submit input on R&D, please contact:

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