

U.S. Army Corp of Engineers

PL 84-99 Levee Inspections and Levee Certification

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Rock Island District

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US Army Corps of Engineers
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U.S. Army Corps of Engineers Flood Damage Reduction Services

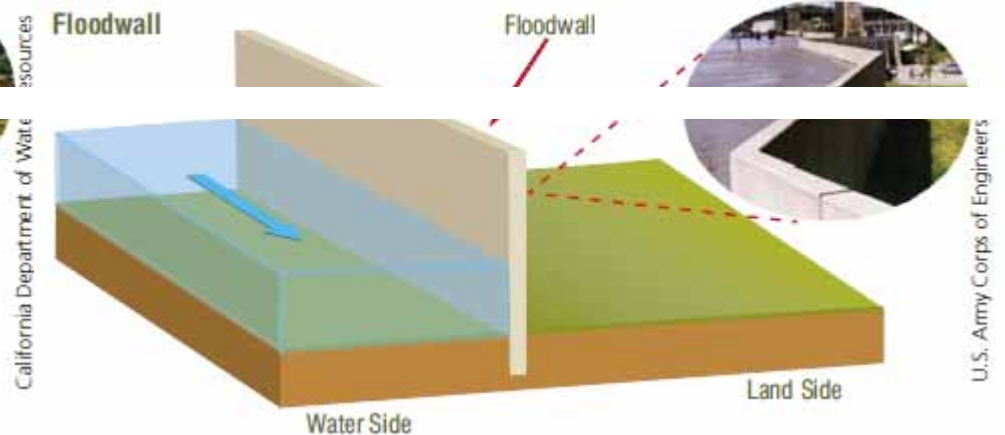
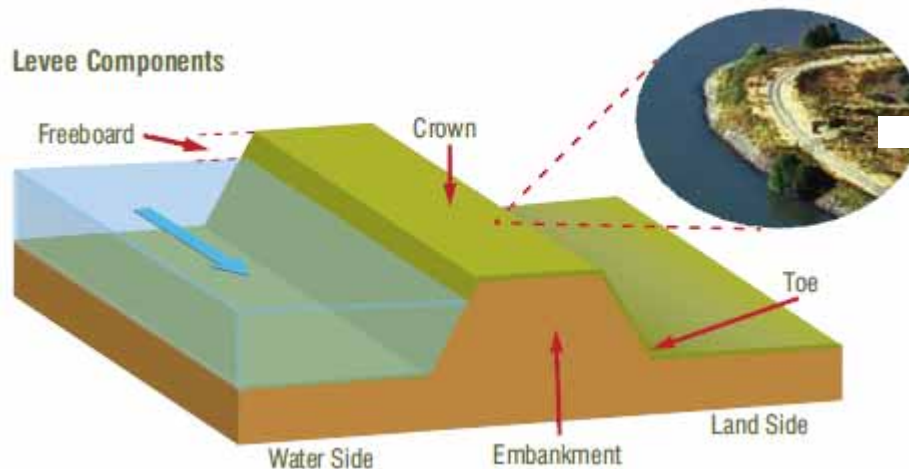
- **Levee Rehabilitation and Inspection Program**
- Flood Damage Reduction Project Construction
- Emergency Response
- **Levee Certification**
- Flood Risk Management and Coordination
- Flood Risk Communication



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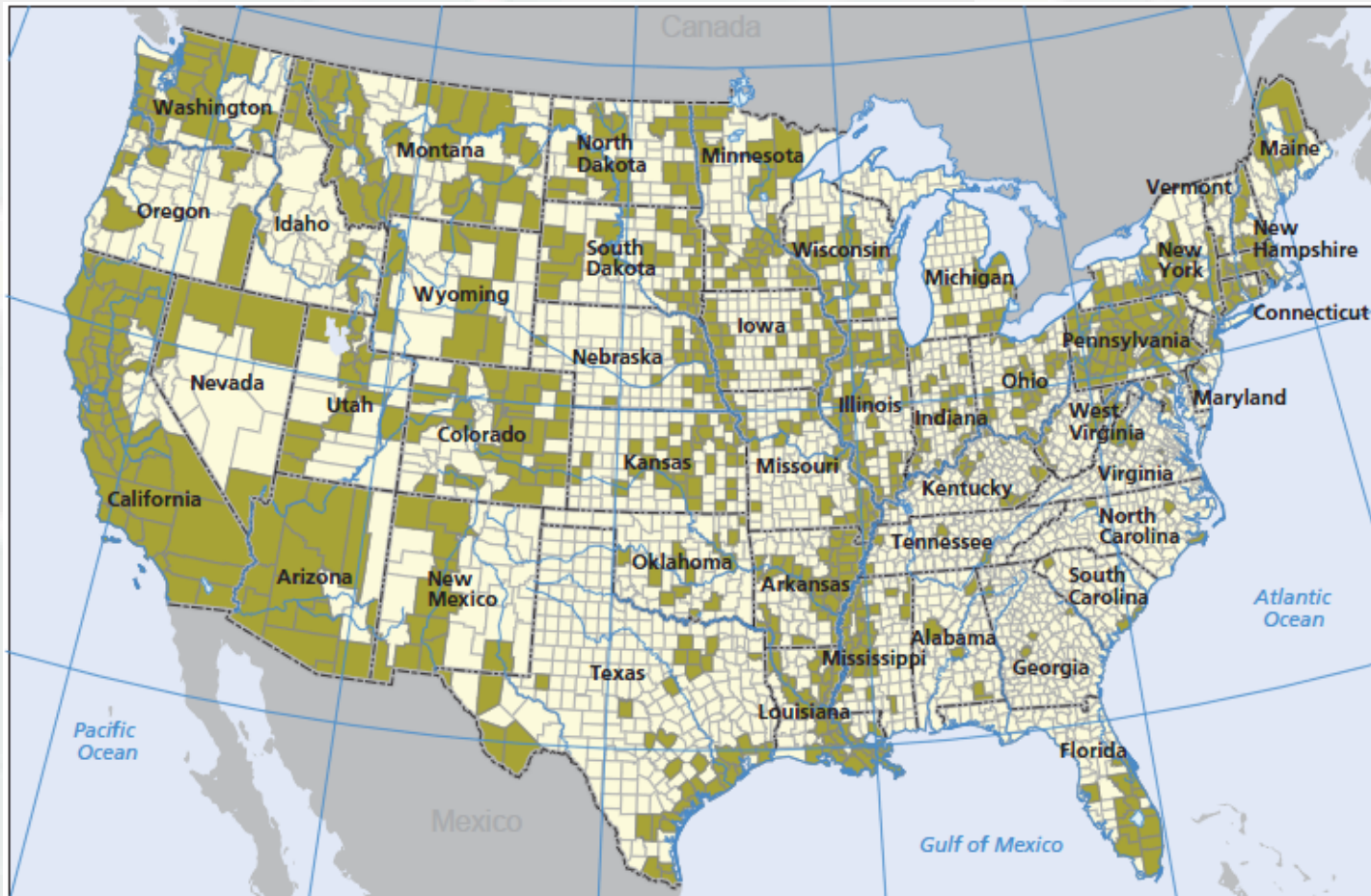
What is a levee?

- A man-made structure engineered to contain, control, or divert the flow of flood water



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Where are levees located?



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Where are levees located?

- Most originally built to protect farmland
- With development, migrated to protecting homes
- 100,000 miles of levees nation-wide
- Most locally owned and many near large rivers
- 43% of U.S. population live in leveed counties



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USACE PL 84-99 Program

Levee Inspection and Rehabilitation

- Annual and Periodic Levee Inspections
- Emergency Response and Flood Fight Support
- Levee Repair of Major Damages (> \$15k)
- Non-structural Alternatives, Reducing risk



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PL 84-99 Levee Program

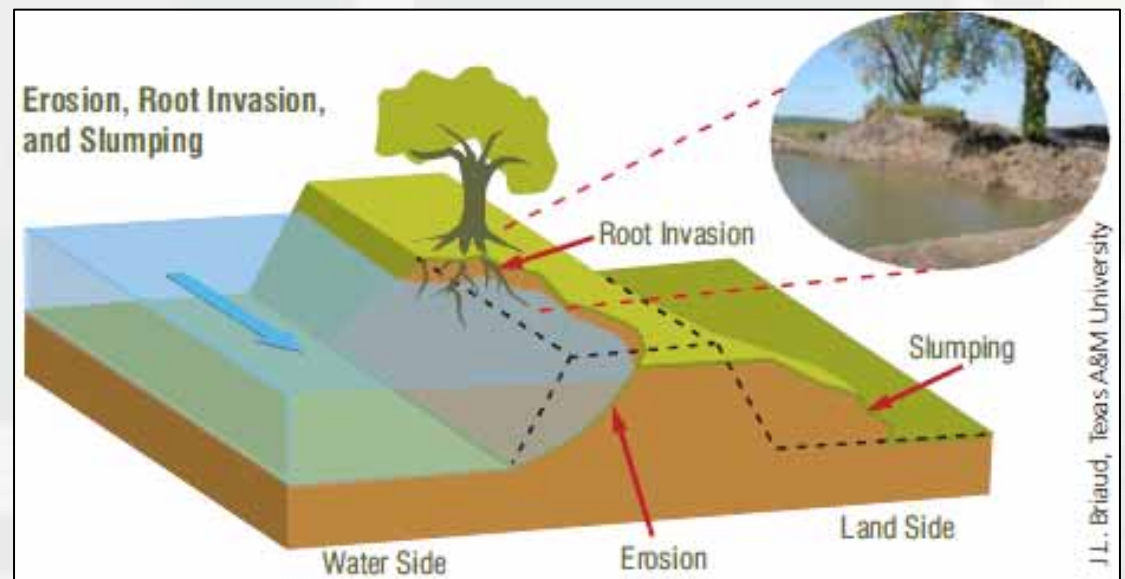
- 110 Levee Systems in Rock Island Dist. Program
 - ▶ Federal Projects: 82
 - ▶ Non-Federal Projects: 28



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PL 84-99 Levee Program

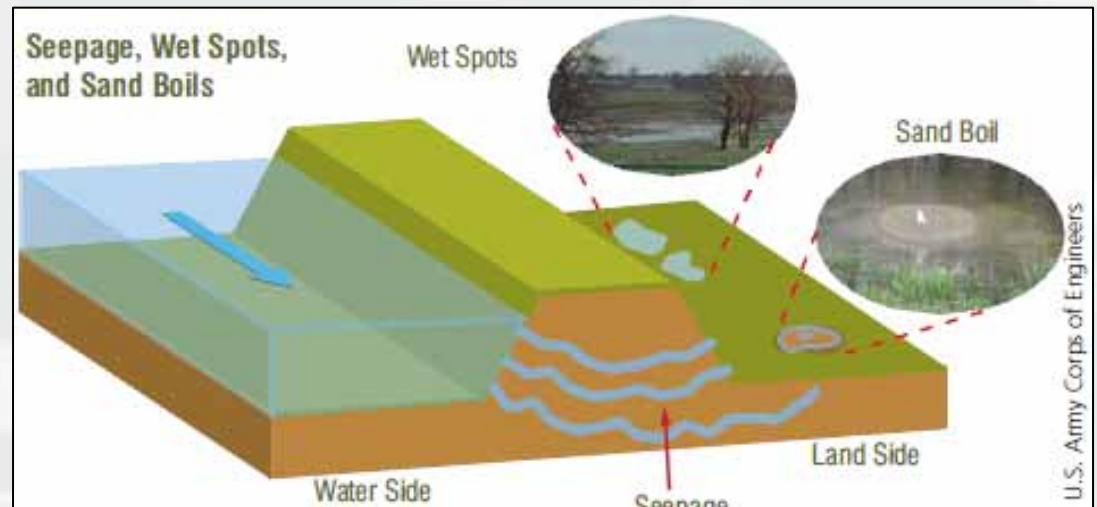
- Levee inspectors assess levee conditions annually to identify potential problems
 - ▶ Unwanted vegetation and debris
 - ▶ Encroachments
 - ▶ Slope stability
 - ▶ Erosion



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PL 84-99 Levee Program

- Levee inspectors assess levee conditions annually to identify potential problems
 - ▶ Unwanted vegetation and debris
 - ▶ Encroachments
 - ▶ Slope stability
 - ▶ Erosion
 - ▶ Settlement
 - ▶ Seepage
 - ▶ Pump problems
 - ▶ Critters



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2010 Levee Inspections

- Levees receive one of three ratings
 - ▶ Acceptable - Minimally Acceptable - Unacceptable
- 2010 Annual Levee Inspection results:
 - ▶ 19 Acceptable
 - ▶ 58 Minimally Acceptable
 - ▶ 15 Unacceptable
- 2010 Periodic Levee Inspection results:
 - ▶ 6 Minimally Acceptable
 - ▶ 3 Unacceptable
 - ▶ 9 Not yet rated



Levee System Status

- Acceptable
 - ▶ What does it mean?
- Minimally Acceptable
 - ▶ What does it mean?



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Levee System Status

- Unacceptable
 - ▶ What does it mean?
 - ▶ How will this rating affect the sponsor?



Factors Affecting Rating Process



- Increasing Flood Damages
- Congress and USACE Focused on Reducing Risk
- Implementation of Levee Safety Program and Periodic Inspections
- Clearer Levee Inspection Guidance
- Less Flexibility in Rating Process



Future of Inspection Program

- Improved Tools
 - ▶ Levee Inspection Tool
 - ▶ National Levee Database
- Clarifying Inspection Guidance
- Improved Communication
- Focus on Reducing Risk



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Levee Rehabilitation Status

- 2008 Flood Repairs - Rock Island District
 - ▶ 27 Levee System Repairs (of 110)
 - ▶ Levee System Repairs by State
 - Iowa: 13
 - Illinois: 8
 - Missouri: 6
 - ▶ Estimate \$80 million expended when fully complete
 - Iowa: \$16M, Illinois: \$51M, Missouri: \$13M



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USACE Perspectives on Levee Certification



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Levee Evaluation, Certification, and Accreditation

- **Terminology**
- **Historical perspective**
- **FEMA notes**
- **Corps notes**
- **Advantages of Accredited Levee**



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- ***Inspection***

- ▶ Routine annual and periodic
- ▶ Accomplished to protect PL 84-99 interest
- ▶ Not specific to level of protection

- ***Evaluation***

- ▶ Comprehensive and rigorous assessment
- ▶ Can be the basis for completing certification

- ***Certification***

- ▶ Must be accomplished by either a registered professional engineer or a Federal agency with levee design and construction qualifications
- ▶ Submittal package to FEMA for accreditation

- ***Accreditation***

- ▶ Inclusion of a certified levee on a FEMA flood insurance rate map
- ▶ Affects flood insurance requirements and rates and floodplain regulations



History

- Map Modernization Program and Digital Flood Insurance Rate Maps (DFIRMs) - 2004
- Levee certification requirement
 - ▶ Procedure Memorandum 34 (issued in 2005)
- Provisionally Accredited Levee (PAL) agreement - 2006
 - ▶ 2 yrs to complete certification
 - ▶ 1 yr interim status report requirement
 - ▶ Timeframe between PAL agreement expiration and any de-accreditation varies

FEMA notes

- FEMA does not do levee certifications.
- FEMA accredits levees on its maps that have been certified by others.
- An accredited levee is one that FEMA recognizes on its Flood Insurance Rate Map (FIRM) as providing protection from the 1% or greater annual chance flood event.
- FEMA doesn't decertify levees. FEMA de-accredits (i.e. removes) levees from its maps that are not certified.
- For more information go to FEMA web site at:
http://www.fema.gov/plan/prevent/fhm/lv_state.shtm



Corps notes

- Corps is not funded to certify levees other than those it owns, operates, and maintains
- Corps is funded to make available upon request any pertinent data it holds in support of levee evaluations/certifications by others (e.g. private sector A&E firms)
- Corps may perform certifications (evaluations) at the request of the non-Federal sponsor on a reimbursable basis
- For more information see the National Flood Risk Management Program web site:

<http://www.iwr.usace.army.mil/nfrmp/>

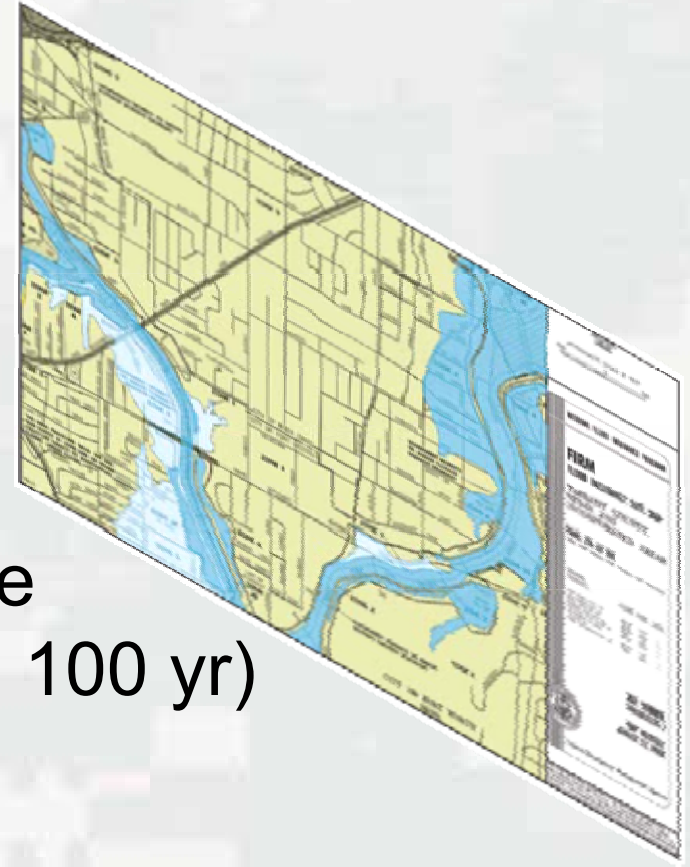
Corps Levee Certification

- Corps requirements are consistent with FEMA's 44 CFR 65.10
 - ▶ Corps certification includes updated methods and follows current Corps practices and requirements
- Corps will not issue a partial certification
 - ▶ System approach
- Corps certification has a maximum period of validity of 10 yrs
 - ▶ Review may be required based on changed conditions
- Corps certification requires risk & uncertainty analysis
 - ▶ Statistical methodology for determining freeboard requirements
- Emergency operation and flood warning plan required for Corps certification



Advantages of Accredited Levee

- Mandatory flood insurance requirements do not apply; lower cost, preferred risk policies are available - insurance is still highly recommended!
- Protected area is considered to be outside the 1% chance event (i.e. 100 yr) regulatory floodplain.
- Greater awareness of residual risk.
 - ▶ **Area designated on map as protected by levee**



Questions?

