

# SW Illinois Flood Prevention Project – *Meeting the Regional Challenge*

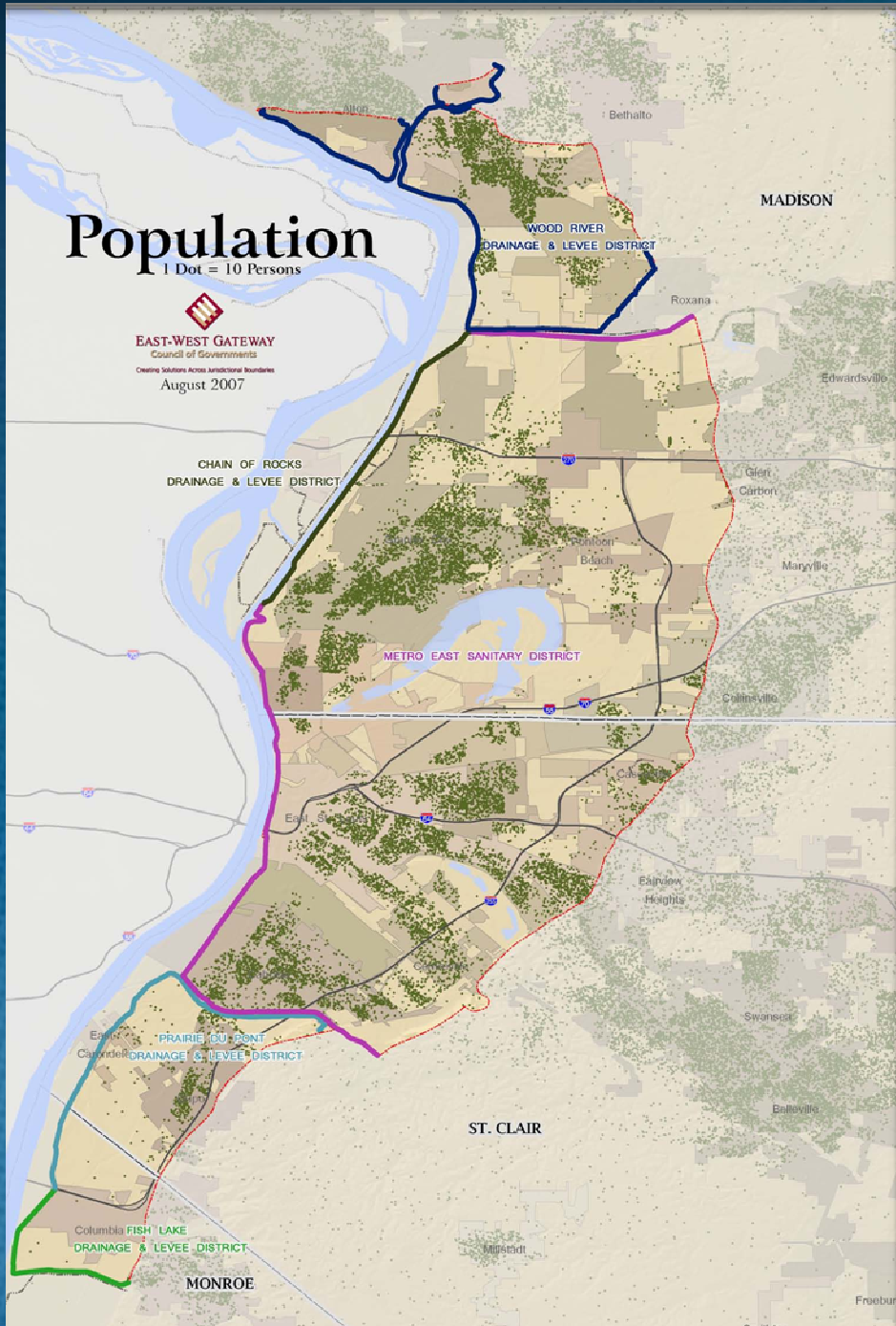
January 25, 2011  
Granite City Rotary



# SW Illinois Levee Systems

- Designed and built in 1940's and improved in '50s by Corps of Engineers as 500-year levees
- Owned and maintained by Levee Districts
  - *Wood River Drainage and Levee District*
  - *Metro-East Sanitary District*
  - *Prairie DuPont Drainage and Levee District*
  - *Fish Lake Drainage and Levee District*
- Owned and maintained by Corps
  - *Chain of Rocks Levee*





- 155,000 people
  - 40% minority
  - 21% low income
- 174 square miles
- Longstanding and historic communities
  - Alton
  - Wood River
  - Granite City
  - East-St. Louis
  - Columbia
  - Dupo
  - East Carondelet
  - Collinsville

# The Problem

- Corps of Engineers identified *Design Deficiencies* that may compromise the “authorized level of protection” (52 + 2 feet on St. Louis gage – approx. 500-year)
  - Understanding of risk has improved
  - Better design methods
  - Increased design factor of safety post-Katrina
  - Problems noted in 1993, 1995 and 2008 floods
  - Uncontrolled underseepage at Mel Price Locks and Dam

# The Problem

- Federal Emergency Management Agency Announces Deaccreditation of Levees – August 2007

*“Recently, FEMA was informed by the U.S. Army Corps of Engineers (USACE) that they have determined the levees identified above do not meet the requirements set forth in the Code of Federal Regulations, Title 44, Section 65.10 (44CFR 65.10), entitled “Mapping of Areas Protected by Levee Systems.” Since the levees and levee systems identified above do not meet the requirements set forth in 44 CFR 65.10 they will be de-accredited and therefore will not be shown on the future DFIRM as providing protection from the base flood.”*

# Economic Impacts

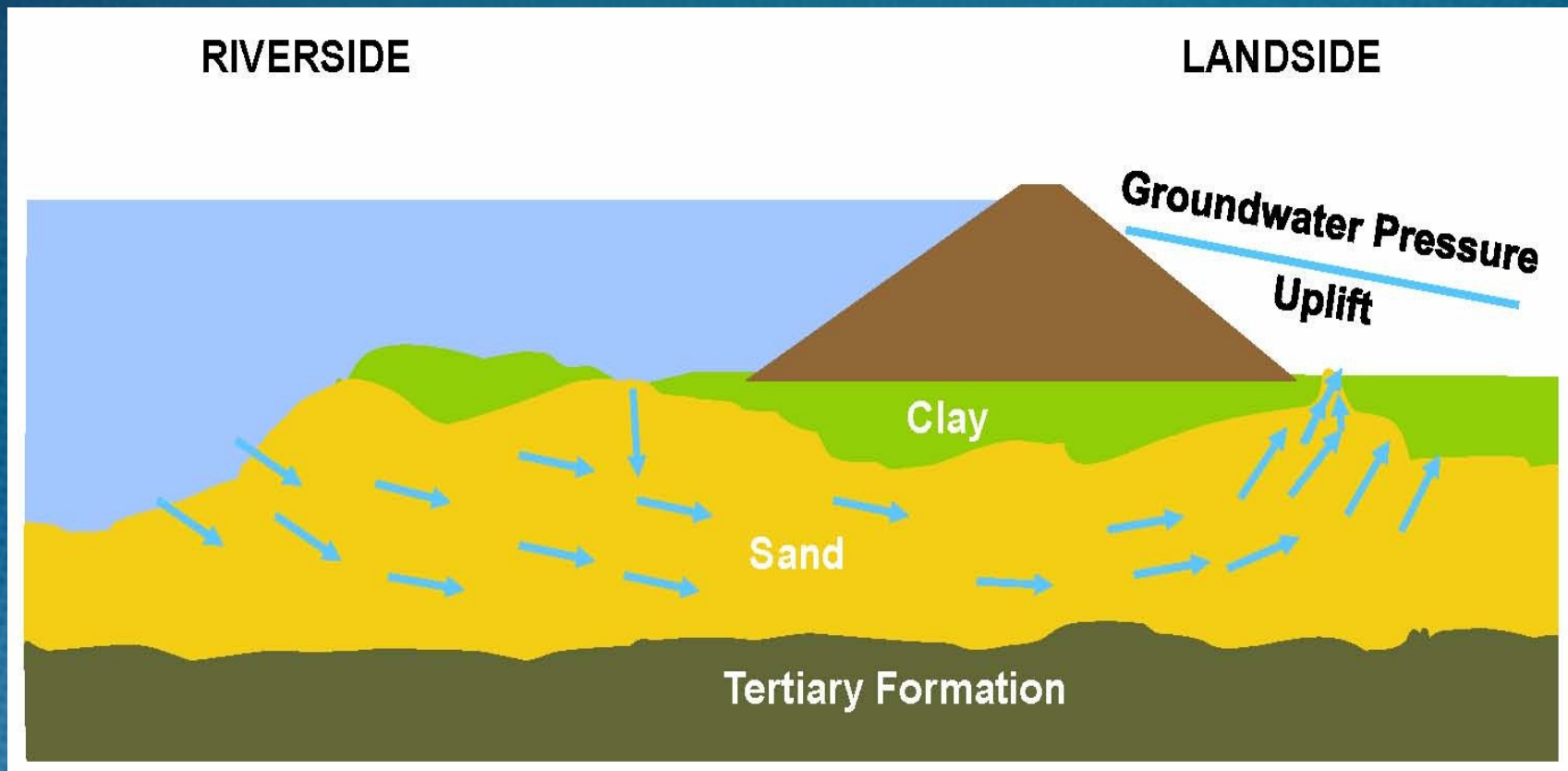
- Mandatory Flood Insurance
  - \$20 million/yr additional premiums for homeowners and businesses
  - Another \$30 million/yr for larger businesses
- Building Standards
  - Raise buildings above base flood elevation
- Loss of Property Value

# Key Terms

- Local levee owners (or the Corps) must certify that levee systems will meet federal standards for protecting from a flood with a probability of 1% likelihood of occurring in one year (100-year flood).
- FEMA accredits levee systems that have been certified to meet federal standards.

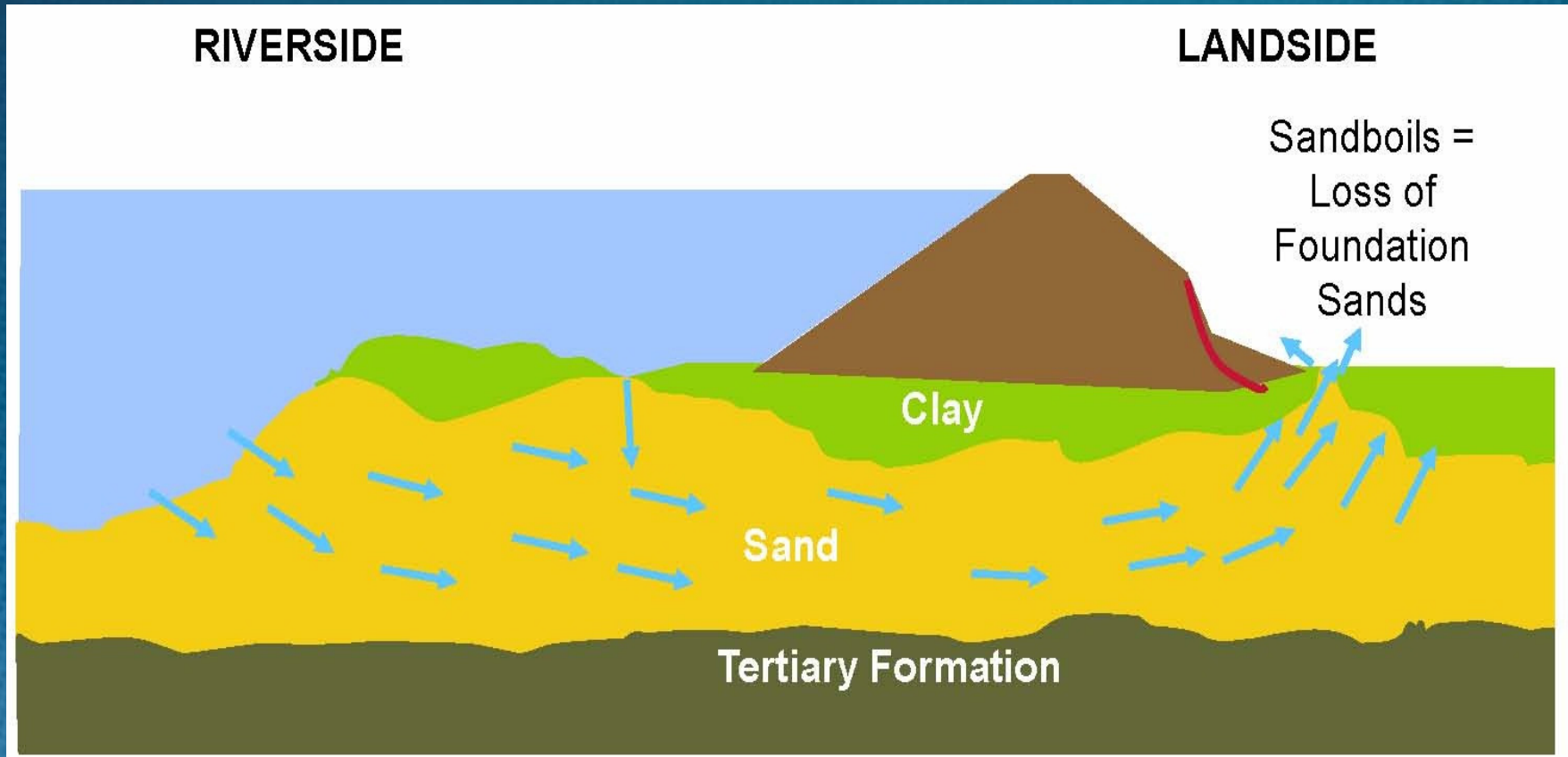


# Underseepage – Formation of Sand Boils



Source: Cory Williams, P.E. – U.S. Army Corps of Engineers

# Underseepage → Instability



Source: Cory Williams, P.E. – U.S. Army Corps of Engineers

# Underseepage Sand Boils



Source: Cory Williams, P.E. – U.S. Army Corps of Engineers

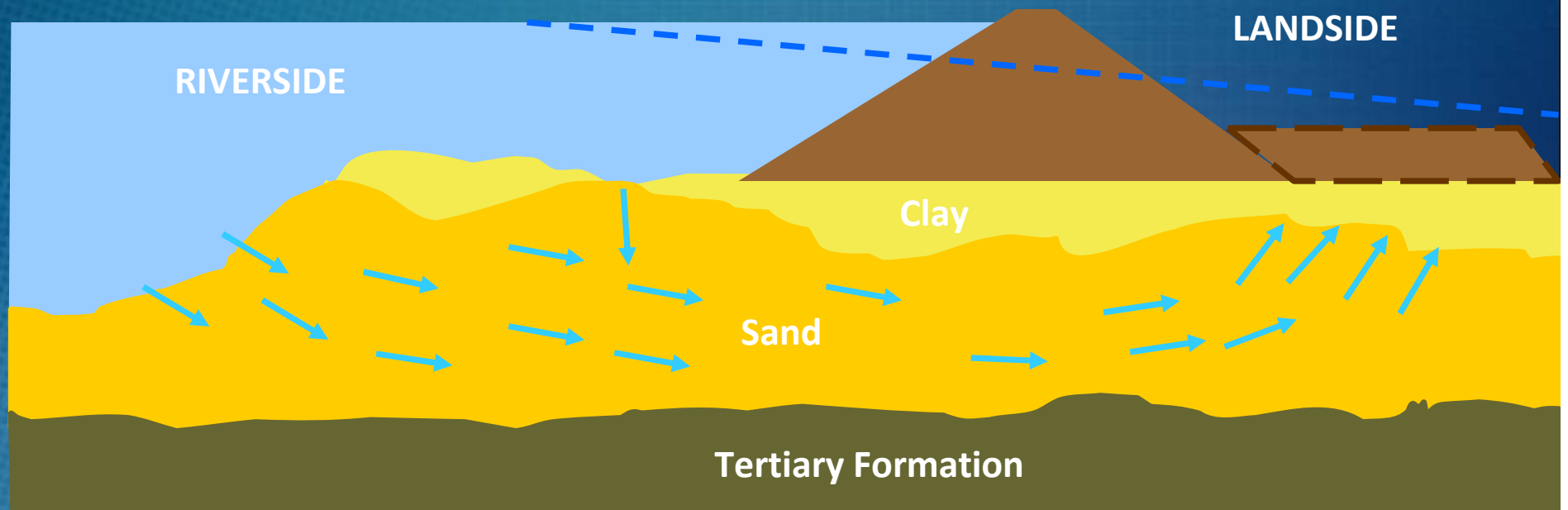
# Landside Berms

## Advantages

- Initial Cost
- Maintenance

## Disadvantages

- Environmental Impacts
- ROW requirements
- Borrow sources
- Increased pressures beyond toe



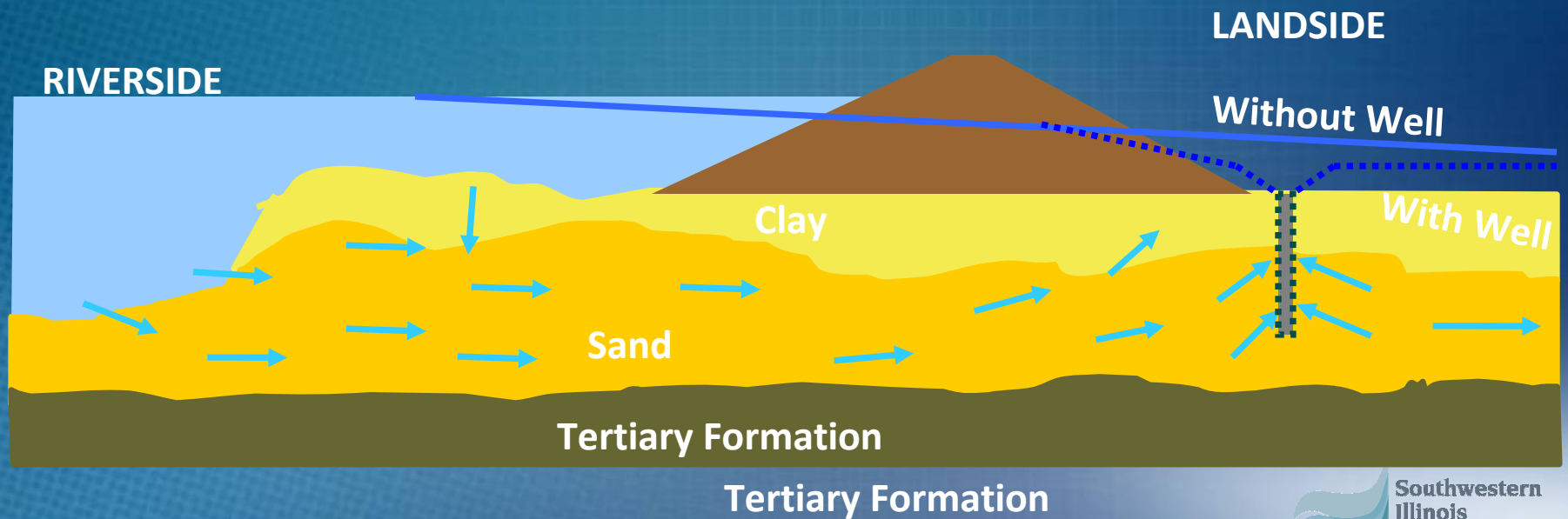
# Relief Wells

## Advantages

- ROW
- Minimal Borrow & Environmental Impacts
- Initial Cost

## Disadvantages

- Maintenance
- Drainage required



# Cutoffs / Slurry Trenches

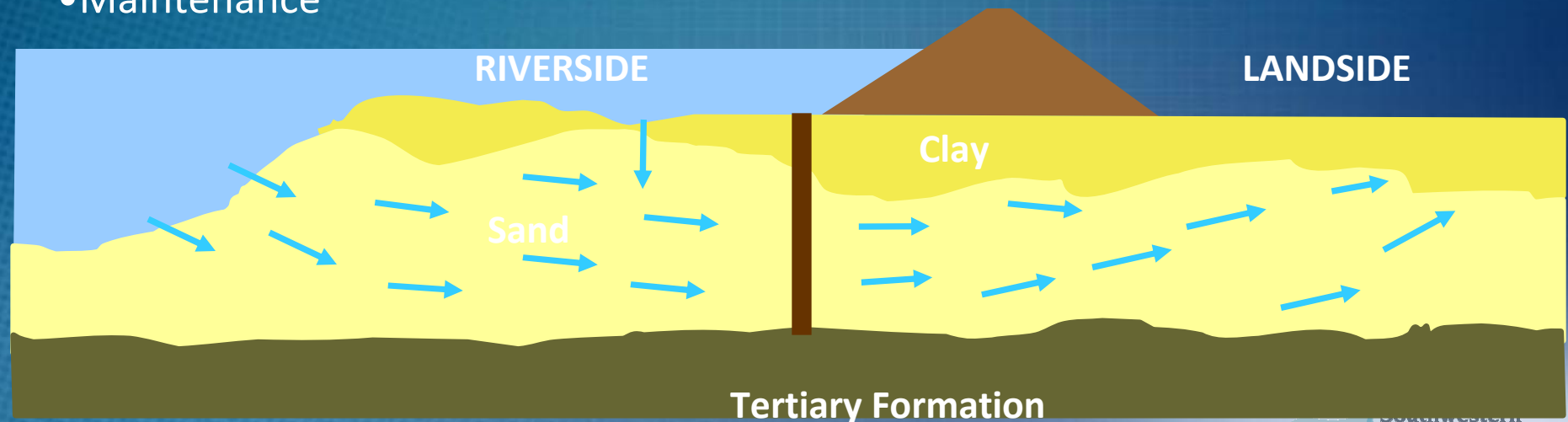
Slurry Trench – Most effective method of seepage control

## Advantages

- Most Effective Seepage Measure
- Addresses Through Seepage
- ROW
- Minimal Borrow
- Environmental Impacts
- Maintenance

## Disadvantages

- Initial Cost
- Trench Stability
- Construction Duration



# The Region Responds

- Sen. Haine sponsors legislation to allow counties to impose ¼ cent sales tax for repairs to levee systems – May 2008
- Flood Prevention Districts formed and tax imposed – January 2009
- FPD Council formed by Intergovernmental Agreement among three counties – St. Clair, Madison and Monroe – June 2009

# Intergovernmental Agreement

- Creation of Flood Prevention District Council
  - Nine member board – three from each county
- Cost sharing
  - St. Clair County – 48%
  - Madison County – 48%
  - Monroe County – 4%
- Cooperative Plan
- Checks and balances
  - County boards approve annual budget and major expenditures



# Financing levee improvements

- Principal funding is FPD sales tax
  - Collecting about \$10 million a year
  - Might generate \$150 million (down from original estimates)
- Federal money is available, but not enough and not timely
- Federal money goes only to the USACE

# What we have learned...

- There are other paths to certification and accreditation
- We continue to believe that FEMA was arbitrary the process to de-accredit levees
- Accuracy of preliminary DFIRMS is a problem
- The impact of mandatory flood insurance will be extremely serious
- The economic impact of levee decertification is devastating...even without a flood

# Our goal...

- Achieve certification of the levee systems in three counties at a cost of about \$150 million in five years or less
- Limit economic hardship during the time that flood protection is being improved

# Project Strategy – Five Elements

1. An affordable design solution
2. Financing plan
3. Construction approach and implementation plan
4. Legislative, political, regulatory, and legal agenda to buy time and limit economic distress
5. Continuous Public engagement

# Progress on a Design Solution

- Independent certification inspection
  - complete in October 2010
- Data collection and underseepage analysis
  - nearly complete
- Conceptual design
  - RFQ – selected three firms
  - Design competition – selected firm May 2010
  - Cost estimate to reach certification standard \$130-160 million
  - Time to reach certification 3-5 years

# Financing Plan

- Retain financial advisor
- Review available revenue sources
- Develop long-term financing strategy
- Issue debt
  - November 2010 bond issue for about \$80 million
  - Future bond issues in 2012 and 2014
- Federal funds
  - Establish eligibility
  - Use local expenditures as in-kind match

# Reducing Costs/Compressing Schedule

- Better utilize existing assets
- Replace capital projects with operating and maintenance strategies
- Longer term capital improvement plan
- Innovative construction techniques, contracting processes and procurement methods

# Legislative and Regulatory Agenda - Federal

- Delay mandatory flood insurance and reduce cost increases
- Authorizing or appropriations language to enable reimbursement for local expenditures or use as in-kind contribution



# Legislative and Regulatory Agenda

- Litigation
  - Challenge the arbitrary decision to deaccredit the levee systems
  - Lack of due process
  - Lack of data, analysis and studies
- Regulatory changes to allow federal reimbursement of costs
- Federal appropriations

# Public Engagement

- Strategic partnerships (EWG, Leadership Council, local governments)
- Website
- Direct mail
- Print and electronic media

# Immediate Actions

- Levee inspection complete - October 2010
- Design contract – October 2010
- Issue bonds - November 2010
- Preliminary Project Design - April 2011

Questions/  
Comments/  
Suggestions?