

The background of the slide is a close-up of the American flag, showing the stars and stripes. In the lower right quadrant, there is a small, golden sandcastle on a patch of white sand.

Conditions Affecting Missouri Levee Systems Reliability

by

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November 26, 2007



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Levees Are Affected By The Following Adverse Conditions

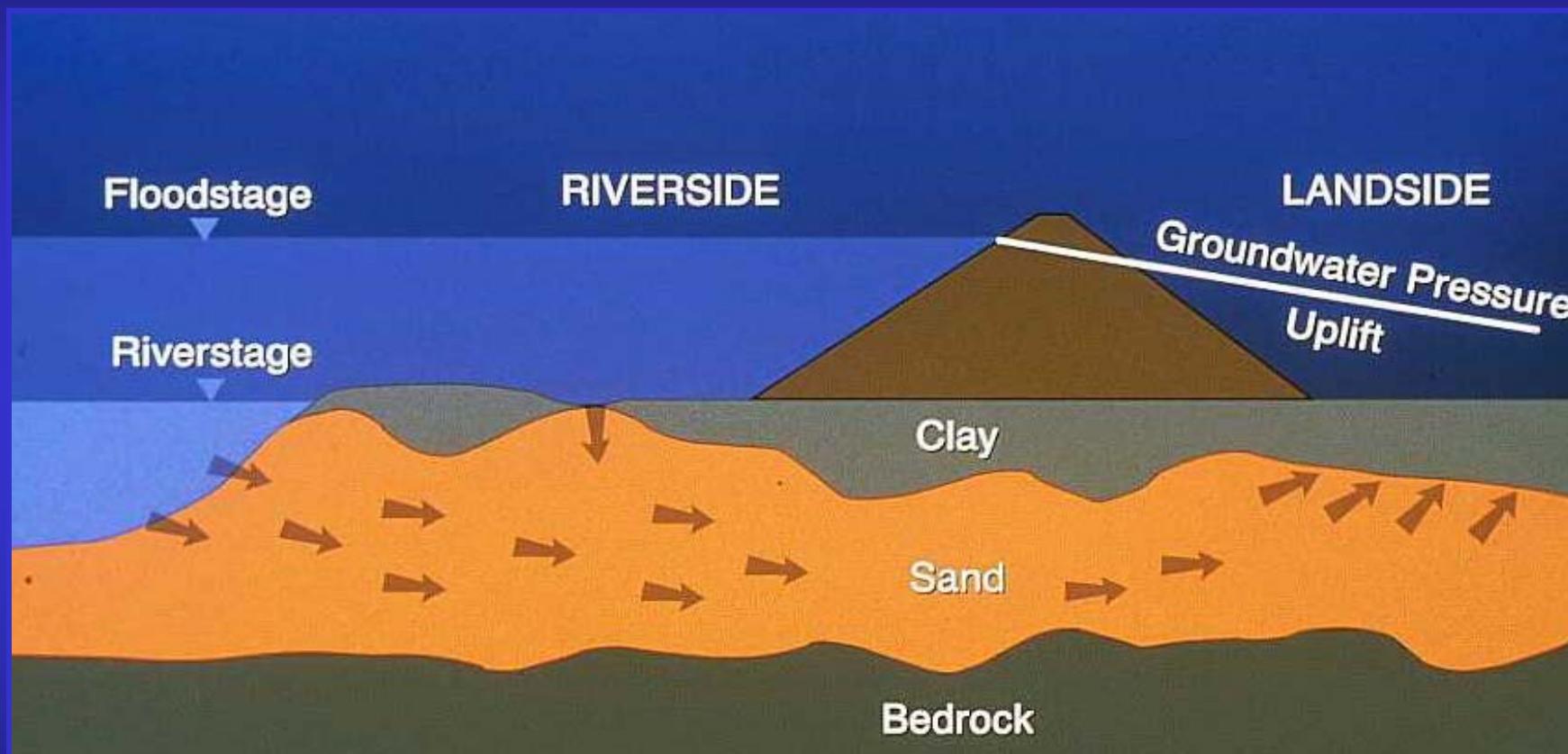
- **Uncontrolled Seepage**
- **Deteriorating Corrugated Metal Drain Pipes**
- **Pipe Joints Separating**
- **Scour and wave wash.**
- **Structural Instability**

One Team: Relevant, Ready, Responsive and Reliable



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Groundwater Pressure Uplift



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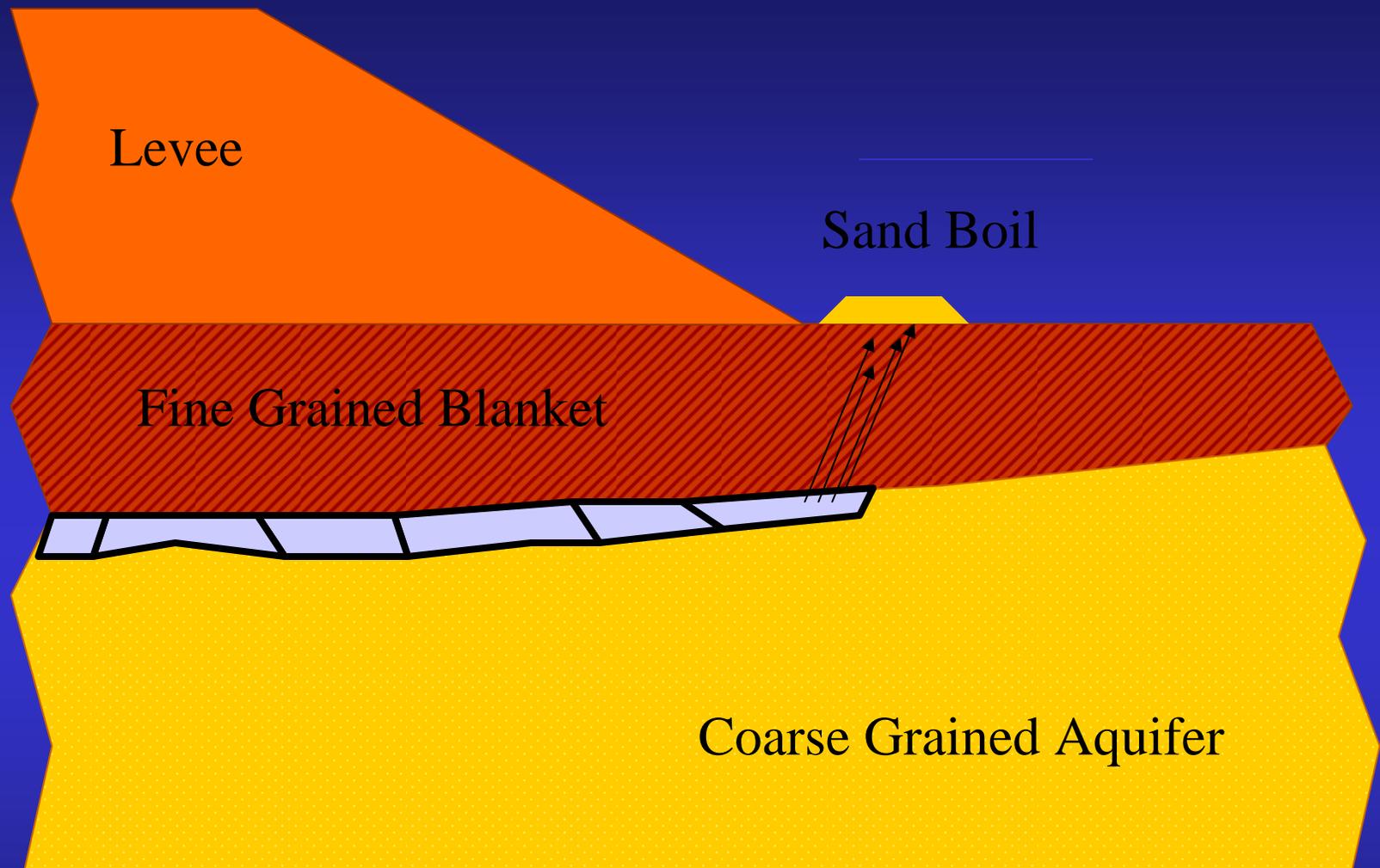
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Kaskaskia Island D&LD

Uncontrolled Seepage July 1993 Flood



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Piping in the Aquifer

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Kaskaskia Island Breach

July 22, 1993



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Kaskaskia Island D&LD Failure

Uncontrolled Seepage July 1993 Flood



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Aerials of Bois Brule Levee Breach and Scour Hole



View toward levee district



View toward Mississippi River



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St. Louis Flood Protection

Uncontrolled Seepage Flows From Under The Floodwall

July 1993



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St. Louis Flood Protection

Uncontrolled Seepage Flows From Under The Floodwall

July 1993

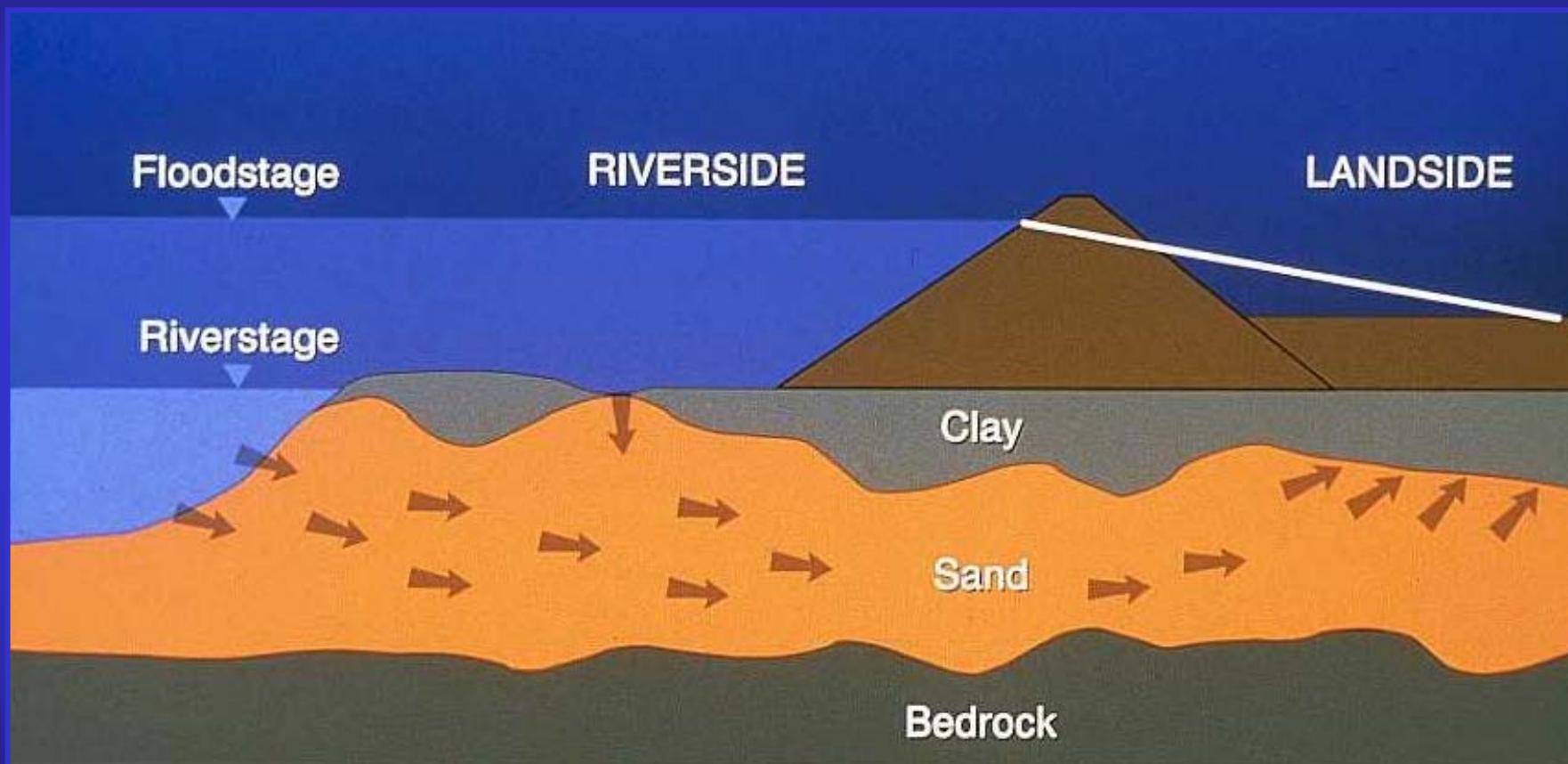


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Seepage Berms Controlling Uplift

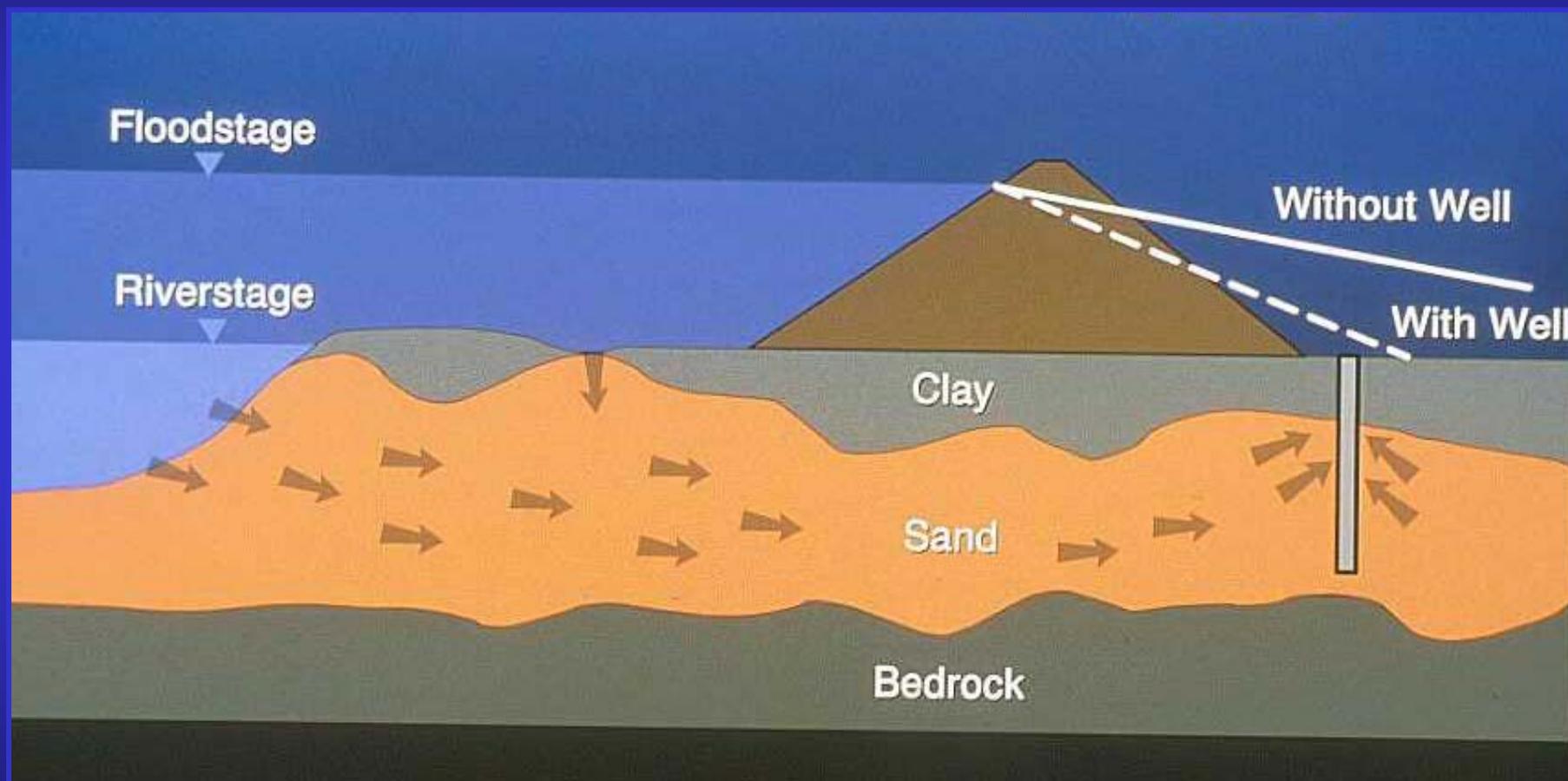


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Groundwater Pressure Uplift Control With Relief Wells



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Wood River D&LD



Deteriorating Riverside CMP Gravity Drain, January 2005



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Grand Tower D&LD



Two Deteriorating CMP Gravity Drains, July 2002



Top Photos
Sta 473+12



Bottom Photos
Sta 501+76



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Scour and Erosion

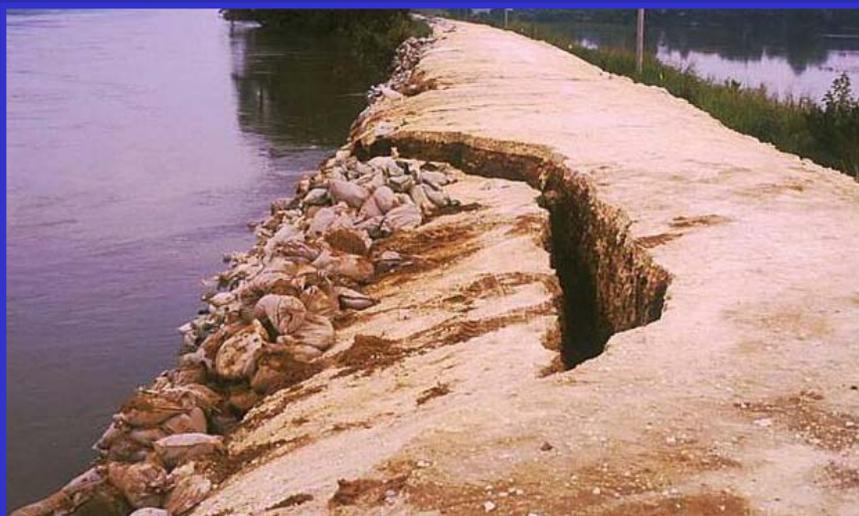


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Levee Instability from Scour and Uplift

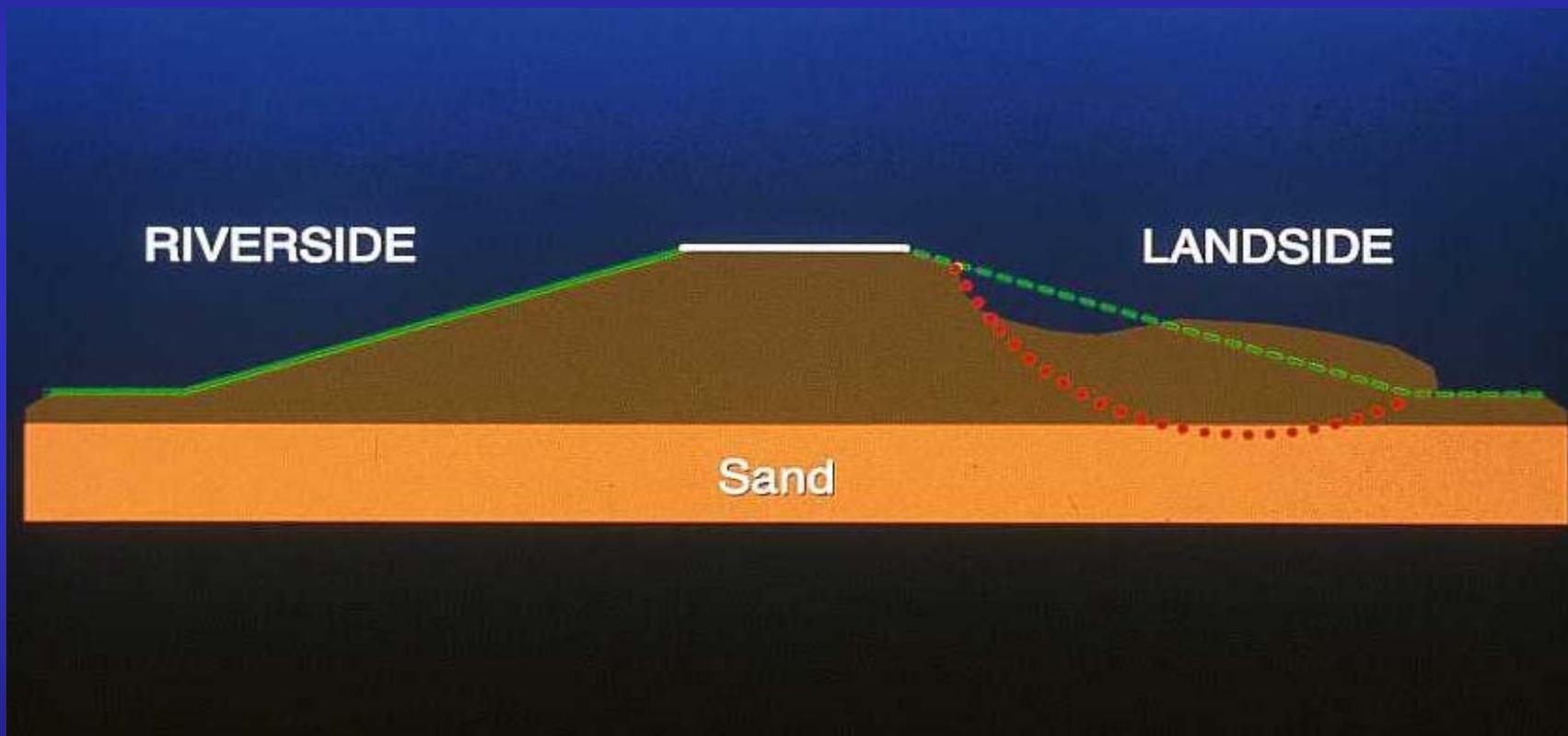


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Slope Instability Failures



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Proactive Studies Addressing Under Performance Issues



- Cape Girardeau Flood Protection System, Engineering Documentation For Reconstruction – Pending Approval
- St. Louis Flood Protection Reconstruction Evaluation Report – Approved and Funding Requested

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