

**St. Louis District Corps of Engineers /
American Council of Engineering Companies of Missouri /
American Council of Engineering Companies of Illinois Liaison Committee**

- MINUTES -

Thursday, July 25, 2019

Location: Horner & Shifrin, Inc.

401 S. 18th Street, Suite 400, St. Louis, MO 63103

Attendees:	<u>St. Louis District COE:</u>	<u>ACEC Missouri:</u>	<u>ACEC Illinois:</u>
	John Osterhage	Karen Frederick	Kip Chepkoit
	Matt Vielhaber	Pam Hobbs	Shelley Dintelman
	Mandy Yeomans	Rick Lodewyck	Scott Harding
		Len Madalon	
		John McEnery	
		Monica Zidaru	
		Bruce Wylie	

Discussion Items:

- 1. Status of Flooding and Levee Conditions Within the St. Louis District as well as Other Districts Affecting the St. Louis District.** John Osterhage gave a slide presentation on efforts by the Corps regarding the recent flooding of the Missouri and Mississippi Rivers. The local levee districts can submit expenses to the Corps for possible reimbursement. Private levee districts are responsible for flood fighting efforts and have limited insurance for repairs on a 80%/20% cost share basis. Federal dollars will help in levee repairs but can't fund "improvements" that may be necessary in the future. Levee district repair costs must show a benefit/cost ratio above 1.0. During the 2015-17 time period had 34 rehab projects that cost about \$54 million. Expect upcoming repairs to be about \$55 million. The Mississippi River was above flood stage for a record 126 days straight. Eighteen levees overtopped in the St. Louis area during recent flooding with 100,000 acres flooded. Roughly this year's flood event was about a 100-year flood event frequency. Corps used drones daily to check on the expanse of the flooded areas and levee damage but was hard to keep the line-of-sight requirement for using drones. The Corps at one point had 60-80 staff in the field to help with flood work.
- 2. Update on Projects Planned to be Completed in Puerto Rico.**
Nothing new to report and nothing settled on those projects from last meeting. May be 4th quarter funded projects.
- 3. Anticipated Emergency Contracts.**
No anticipated work needed from consultants in the 4th quarter.
- 4. Anticipated Work Authorized for Q4.**
Not much consultant work anticipated in Q4 (July, August, September). Mostly will have construction work going out in an effort to spend down the amount budgeted and obligated.
- 5. What are the Proposed Changes with the 2008 Rule, Compensatory Mitigation for Losses of Aquatic Resources?**
Nothing finalized and nothing to report. Can find a link on the Corps main website.

6. Corps' Policy Change that Requires Competing at the Task Order Level of A/E Indefinite Delivery Contracts (IDC).

This issue is not something the St. Louis District is dealing with. They still use (and prefer) a QBS approach and try to spread the work among firms that have ID/IQ contracts depending on expertise needed. ACEC national is raising concerns and objections at the national level with USACE.

7. Other Items for Discussion.

Need to find out a contact from the KC District involved with the NGA project in St. Louis for a future meeting agenda item.

8. Next Meeting Date and Location

The next meeting will be held on Oct. 10 or 17 at the St. Louis District's Service Base at the foot of Arsenal Street on the Mississippi River. Details to follow once a good date is determined by Corps.

2019 MVS FLOOD RESPONSE

John Osterhage, PE
Chief, Emergency Management
St. Louis District, US Army Corps of Engineers
Date: 25 July 2019



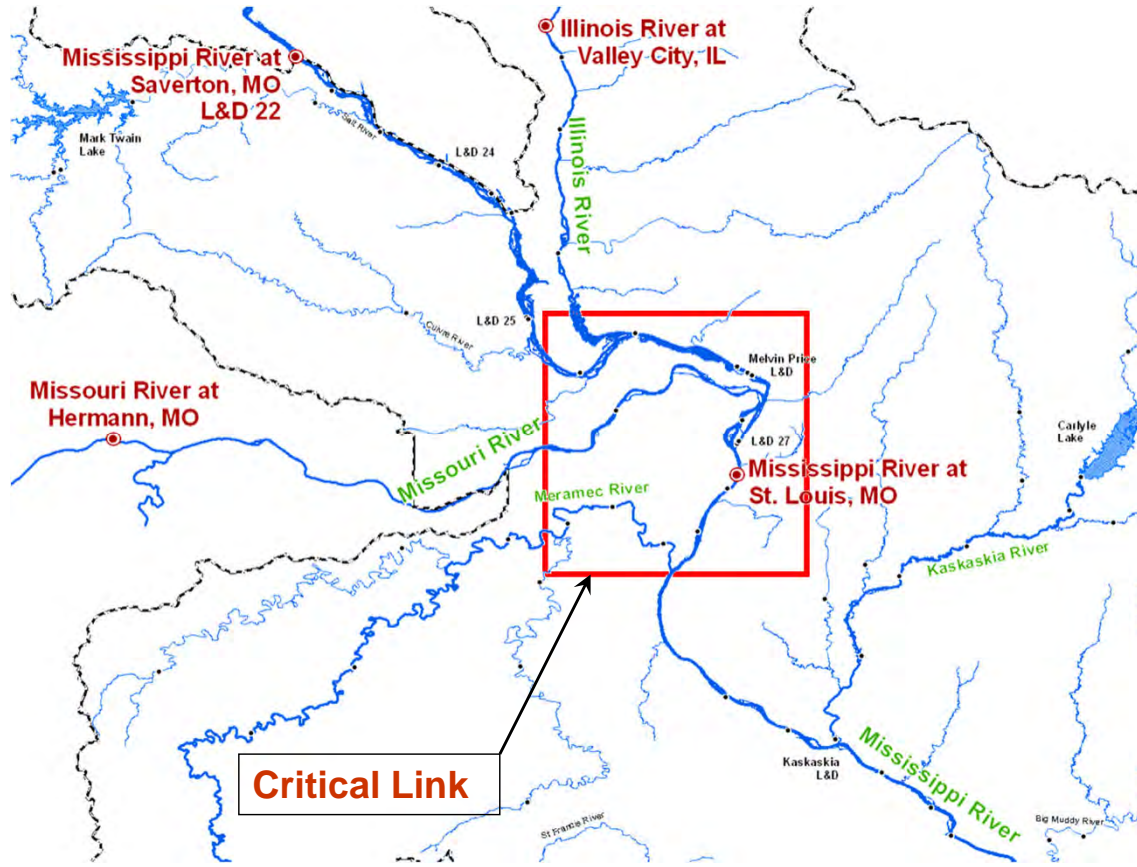
US Army Corps
of Engineers®



AGENDA

- Rainfall / River Stages
- Levee Performance
 - Overtopping
 - Underseepage
 - “Aging Infrastructure”
- Recovery



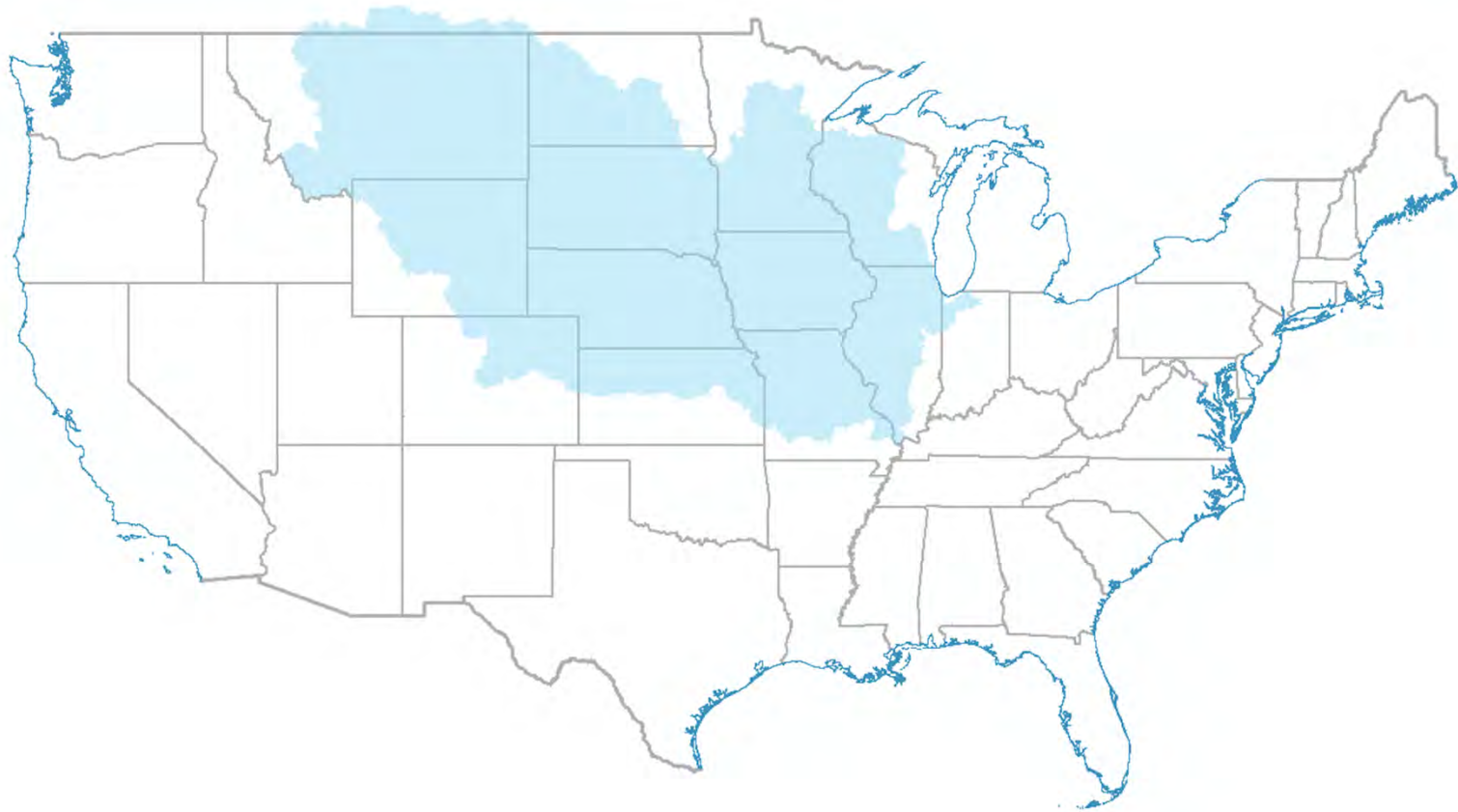




WATERSHED ABOVE ST. LOUIS



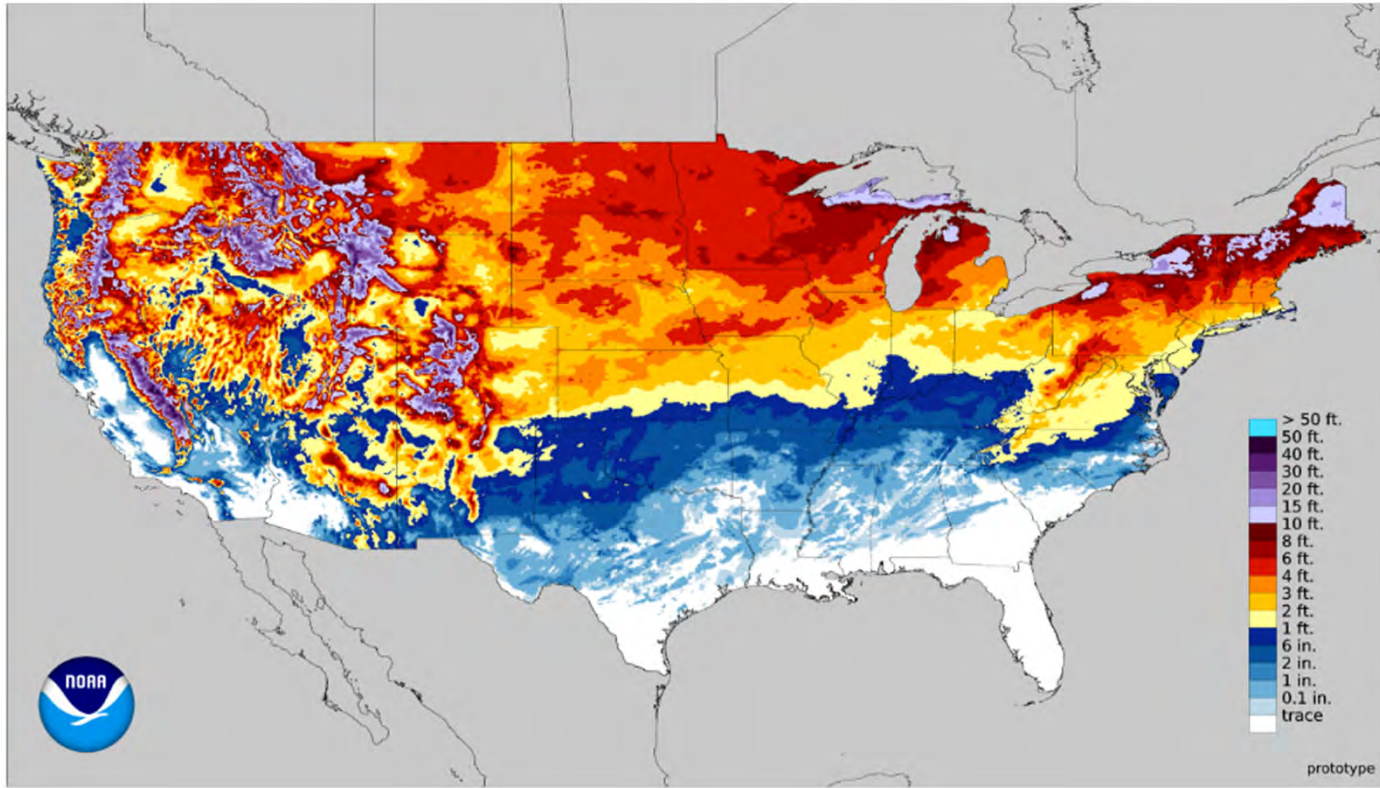
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National Snowfall Analysis: accumulation from 2018-09-30 to 2019-03-07

Issued 2019-03-12 14:00:03 UTC



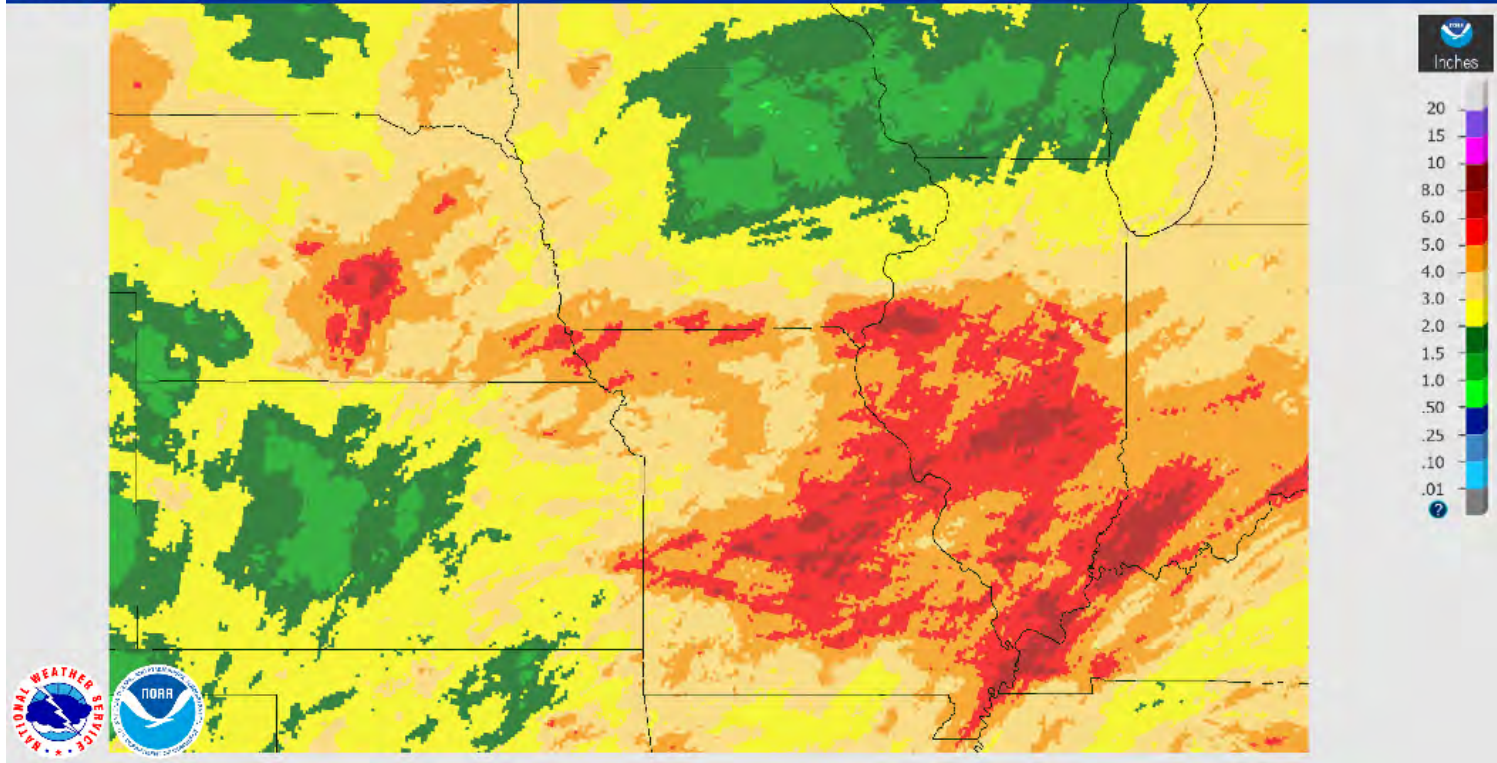


MARCH RAINFALL

March 01, 2019 Monthly Observed Precipitation

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Valid on: April 01, 2019 12:00 UTC

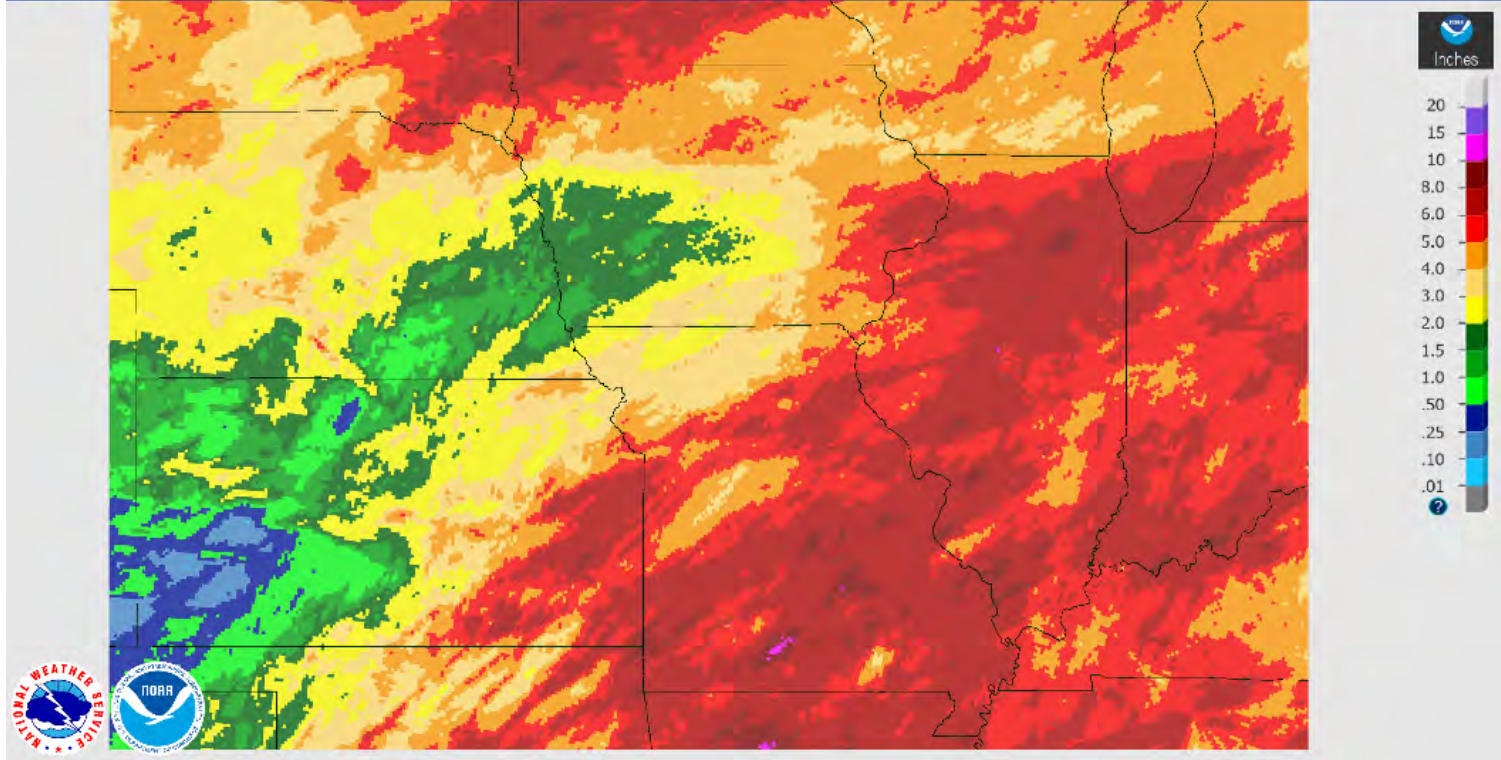




APRIL RAINFALL

April 01, 2019 Monthly Observed Precipitation

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Valid on: May 01, 2019 12:00 UTC



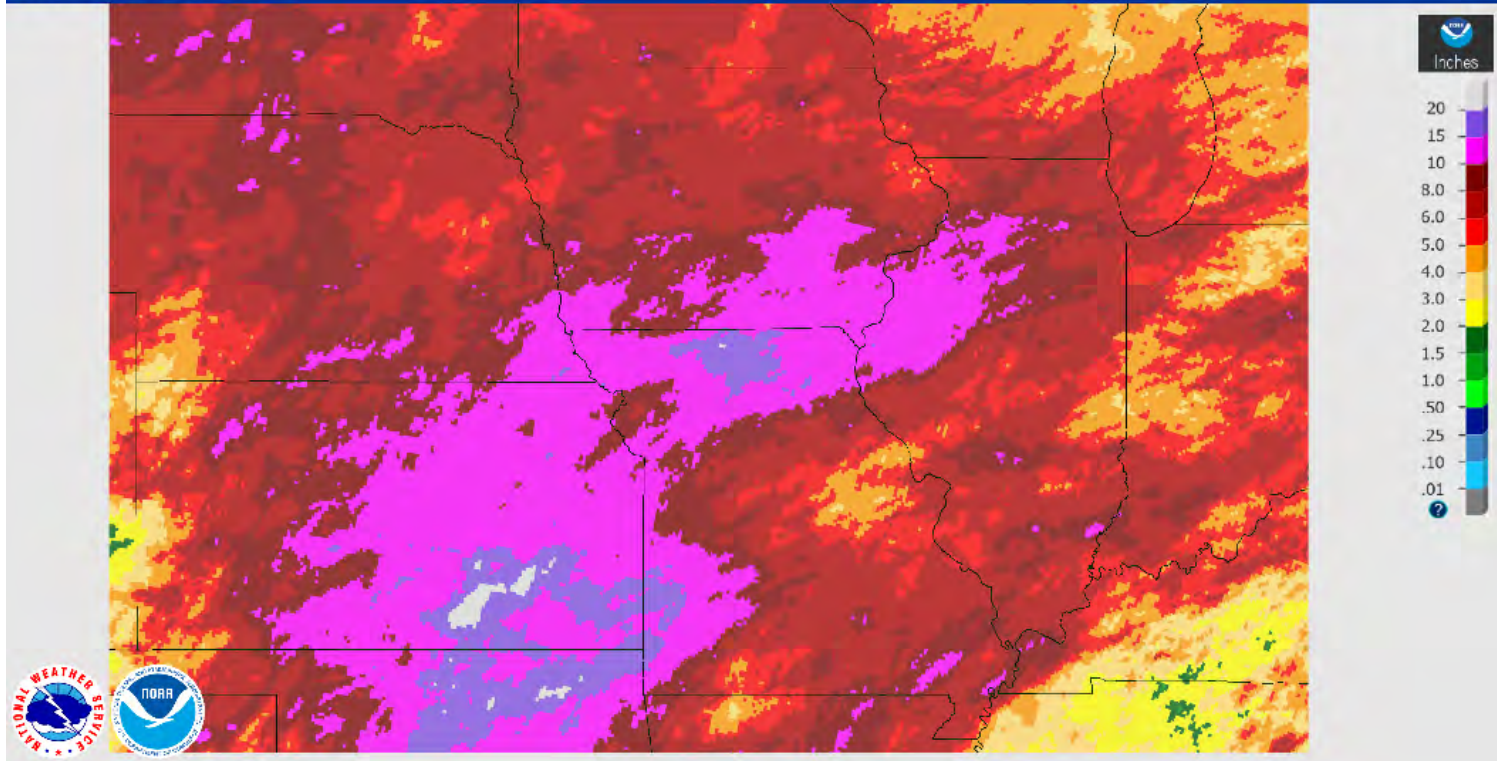


MAY RAINFALL

May 01, 2019 Monthly Observed Precipitation

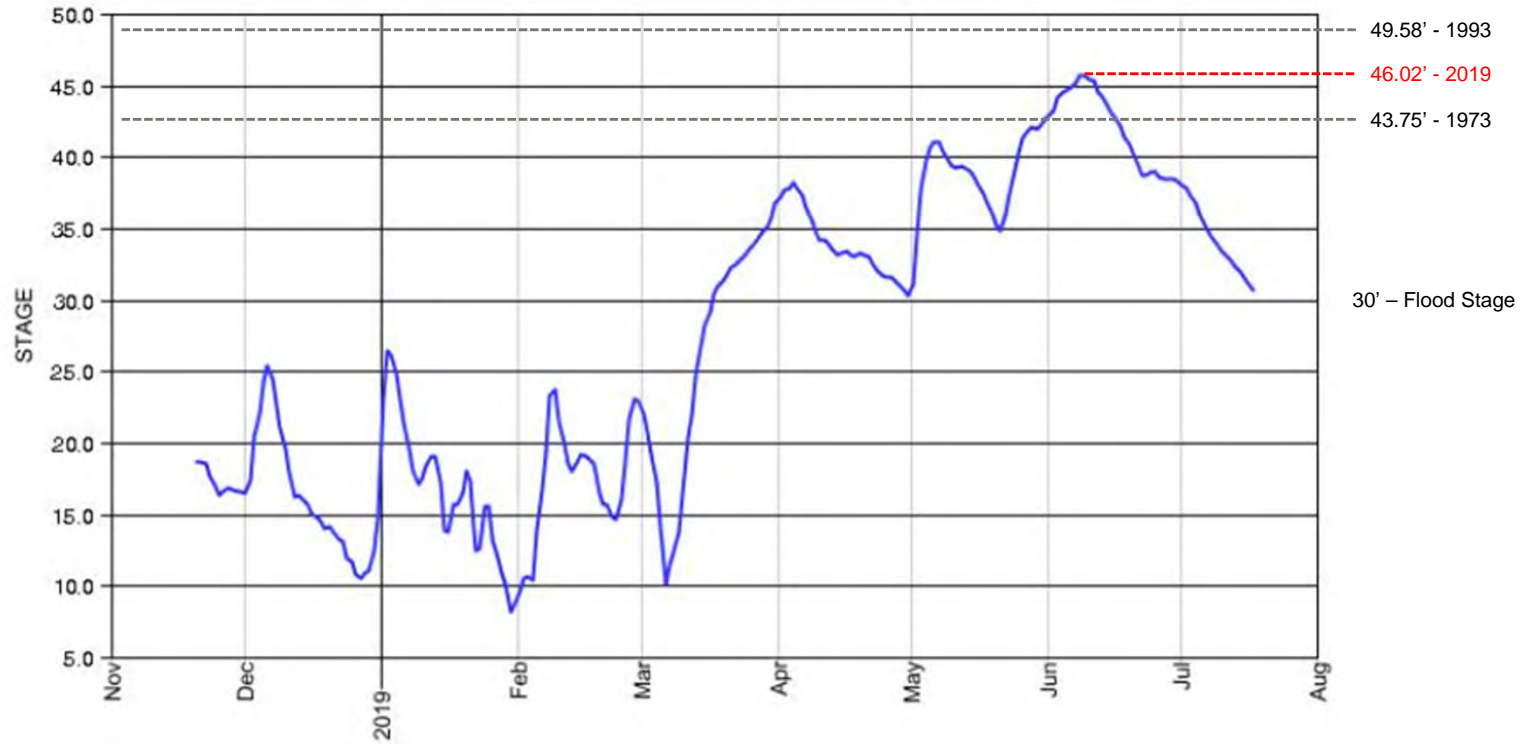
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ST. LOUIS GAGE

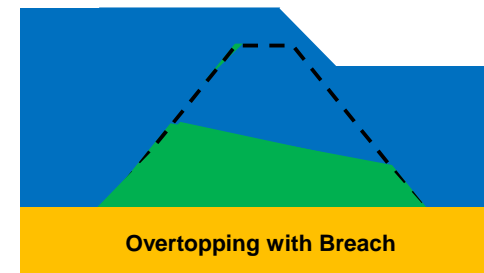
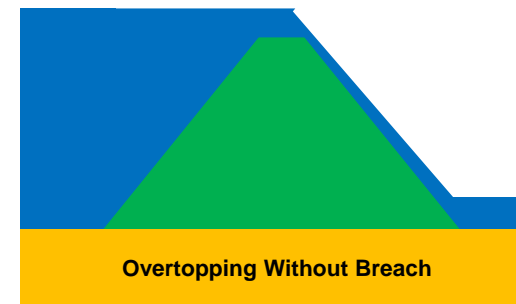




LEVEE PERFORMANCE - OVERTOPPING



- 90 levee districts in the St. Louis District
- 24 levee segments / 18 levee systems overtopped
- 12 levee segments confirmed breached
- Over 100,000 acres inundated





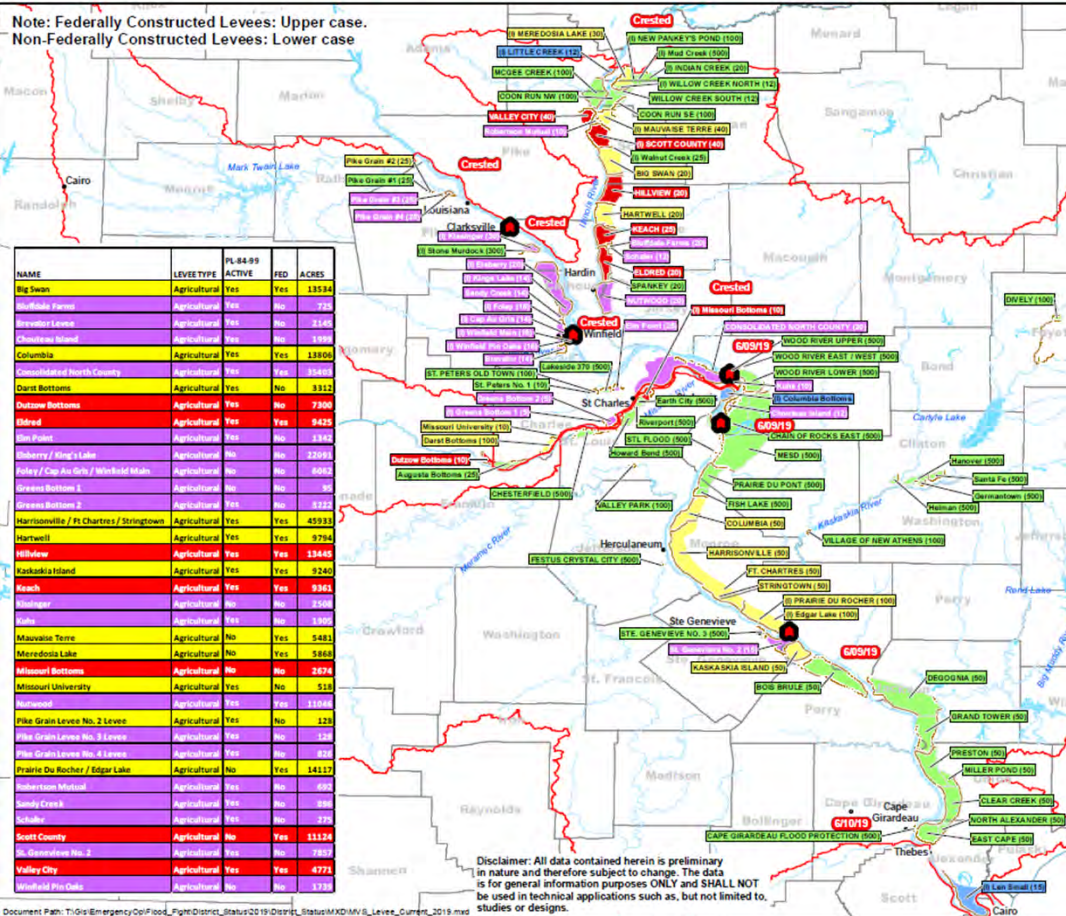
US Army Corps of Engineers
St. Louis District

St. Louis District Flood Event Status Map

** Flood-fighting efforts not accounted for in projection

08 Jun 2019
@ 1300 HRS

Note: Federally Constructed Levees: Upper case.
Non-Federally Constructed Levees: Lower case.



NAME	LEVEE TYPE	ACTIVE	PL 84-99	FED	ACRES
Big Swan	Agricultural	Yes	Yes	13534	
Boonville Canal	Agricultural	No	No	754	
Brewster Levee	Agricultural	Yes	No	2145	
Chickasha Canal	Agricultural	Yes	No	1594	
Columbia	Agricultural	Yes	Yes	13306	
Consolidated North County	Agricultural	Yes	Yes	10484	
Davis Bottoms	Agricultural	Yes	No	3312	
Outlaw Bottoms	Agricultural	Yes	No	7300	
Oldred	Agricultural	Yes	Yes	8425	
Old Train	Agricultural	Yes	No	1942	
Osberry / King Lake	Agricultural	No	No	2255	
Palmy / Cap Au Roch / Woodford Main	Agricultural	No	No	6562	
Reynolds Bottom 1	Agricultural	No	No	46	
Reynolds Bottom 2	Agricultural	No	No	824	
Reynolds Bottom 3	Agricultural	No	No	824	
Reynoldsville / Ft. Chartres / Stringtown	Agricultural	Yes	Yes	45933	
Rowell	Agricultural	Yes	Yes	9764	
Shiloh	Agricultural	Yes	Yes	13446	
Shiloh Island	Agricultural	Yes	Yes	3240	
Reach	Agricultural	Yes	Yes	9361	
Shiloh	Agricultural	No	No	2504	
Lake	Agricultural	Yes	No	1597	
Mauvaine Terre	Agricultural	No	Yes	5481	
Meredoth Lake	Agricultural	No	Yes	5865	
Missouri Bottoms	Agricultural	No	No	2674	
Missouri University	Agricultural	Yes	No	518	
Harwood	Agricultural	Yes	Yes	11004	
Pike Grain Levee No. 2 Levee	Agricultural	Yes	No	128	
Pike Grain Levee No. 3 Levee	Agricultural	Yes	No	128	
Pike Grain Levee No. 4 Levee	Agricultural	Yes	No	836	
Prairie Du Rocher / Edger Lake	Agricultural	No	Yes	14117	
Suburban West	Agricultural	Yes	No	654	
Sandy Creek	Agricultural	Yes	No	594	
Scholar	Agricultural	Yes	No	275	
Scott County	Agricultural	No	Yes	11124	
St. Genevieve No. 2	Agricultural	Yes	No	7852	
Valley City	Agricultural	Yes	Yes	4772	
Woodford Pro Gals	Agricultural	No	No	1734	

Disclaimer: All data contained herein is preliminary in nature and therefore subject to change. The data is for general information purposes ONLY and SHALL NOT be used in technical applications such as, but not limited to, studies or designs.

Levee Status*

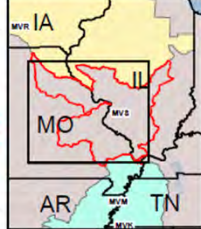
- 3+ ft Freeboard No Distress
- 0.5 to 3.0 ft Freeboard Possible Moderate Distress
- Less than 0.5 ft Freeboard at Crest Possible Significant Distress
- Overtopped
- LOP Not Restored (Previous breach of inactive system)

(I) PL84-99 Inactive Locks and Dams Status

- Closed
- Open
- Open Restricted

Gage Status

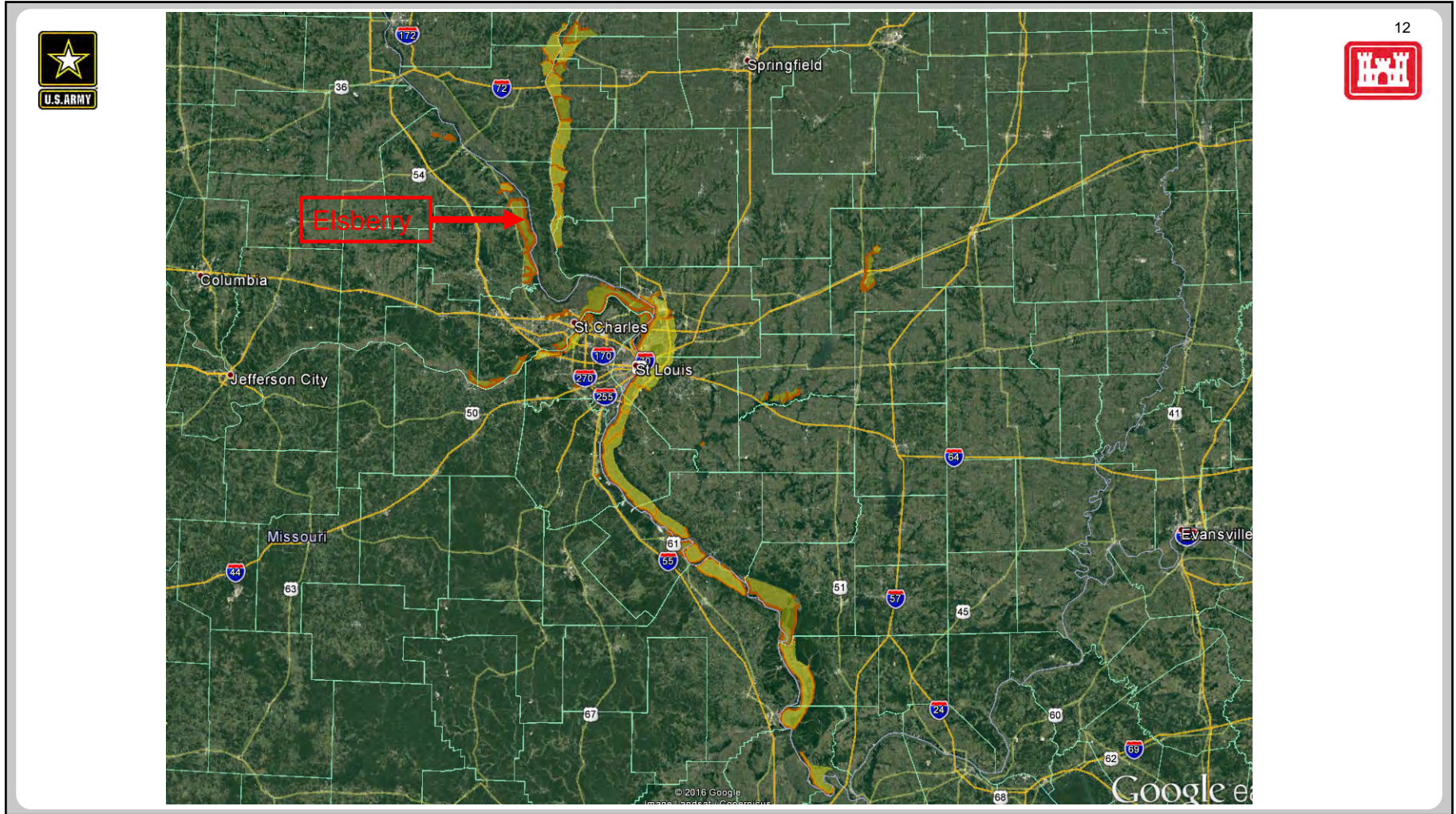
Crest Date
* Predictions based on National Weather Service forecast and field observations.



Scale: 1 inch = 10 miles
North Arrow

St. Louis District
Emergency Management
MVS Spring 2019 Flood

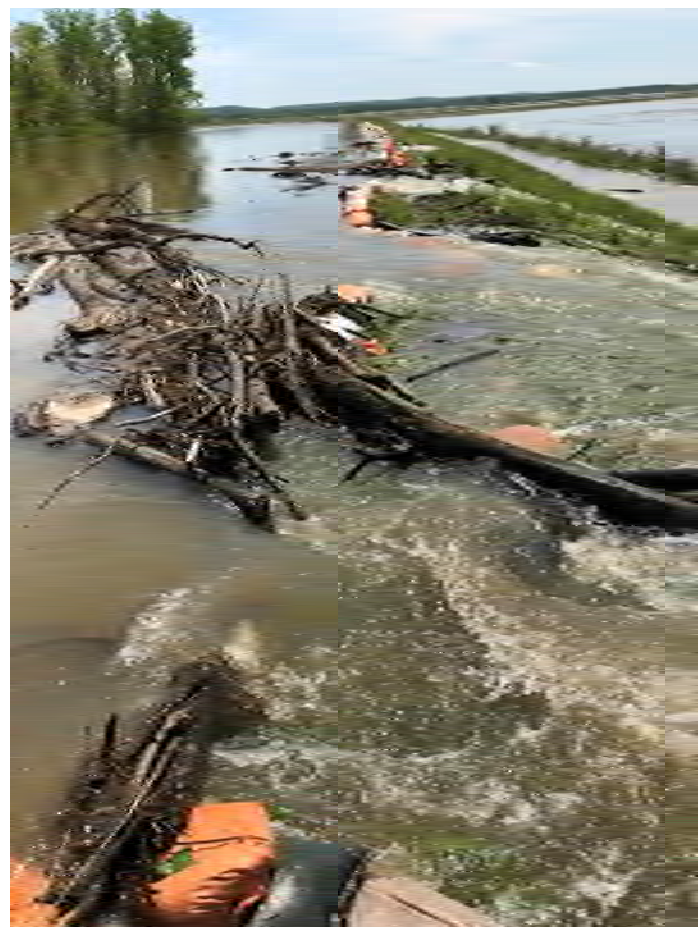




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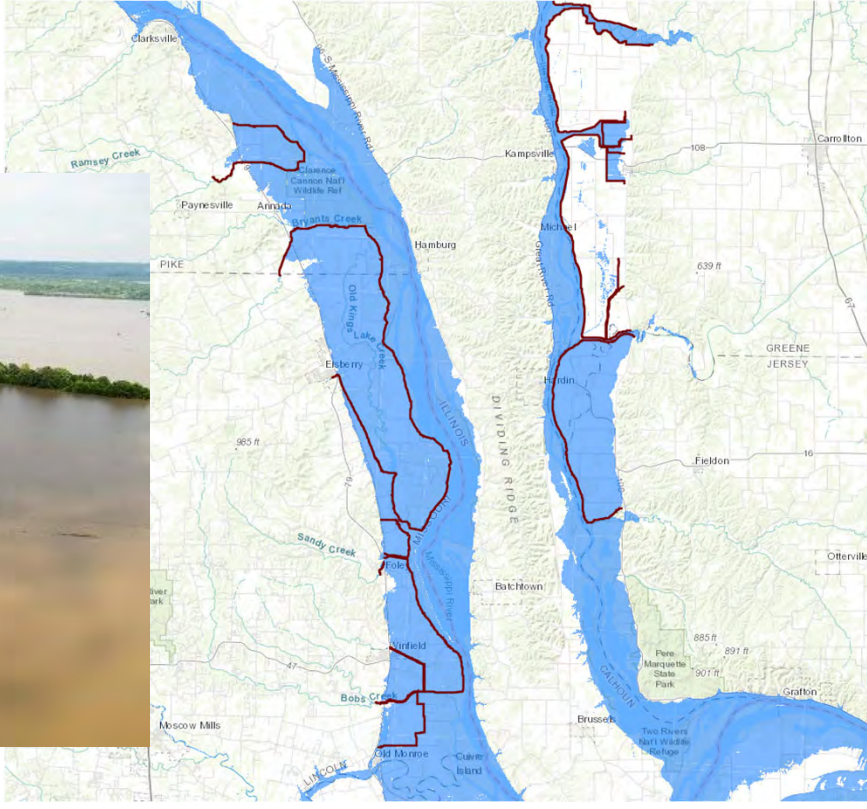


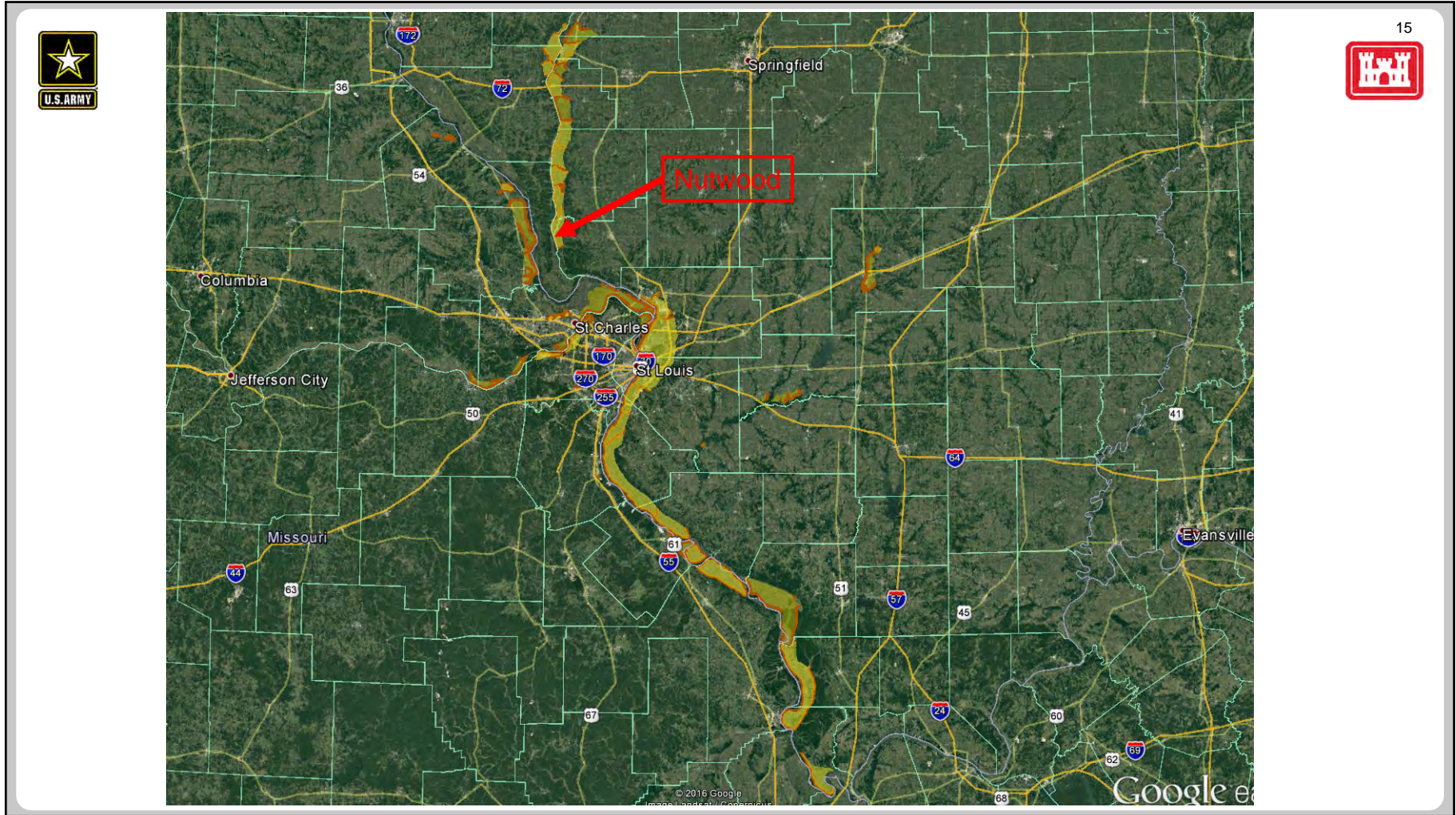
ELSBERRY OVERTOPPING





ELSBERRY OVERTOPPING







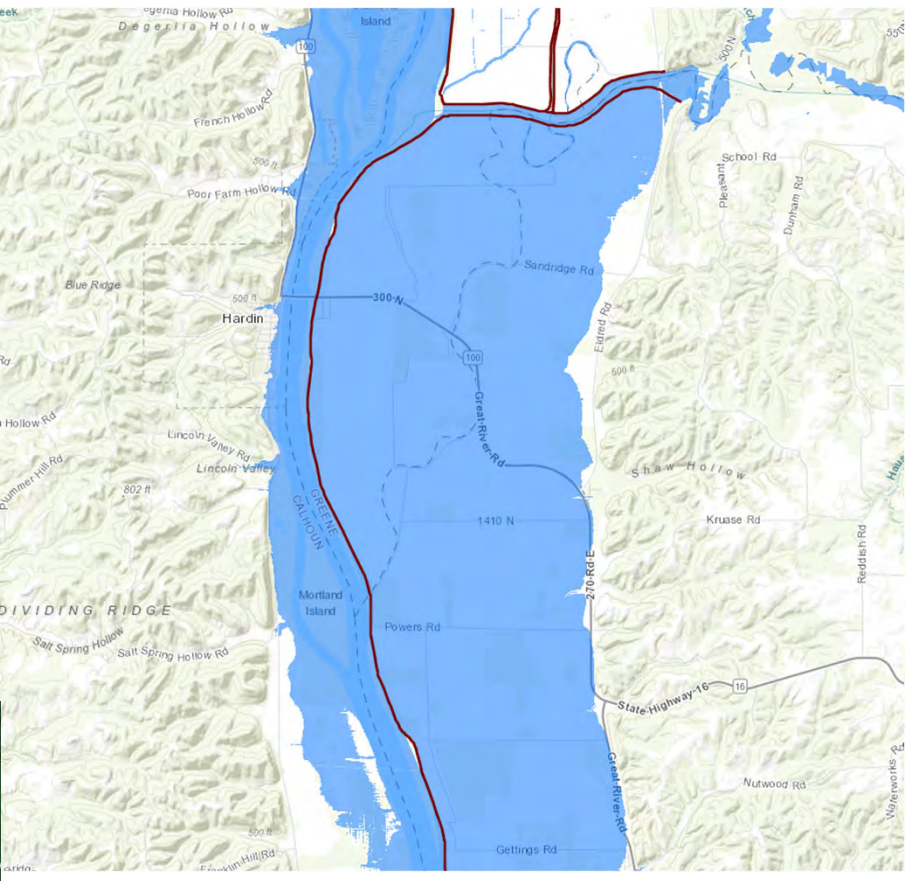
NUTWOOD OVERTOPPING / BREACH

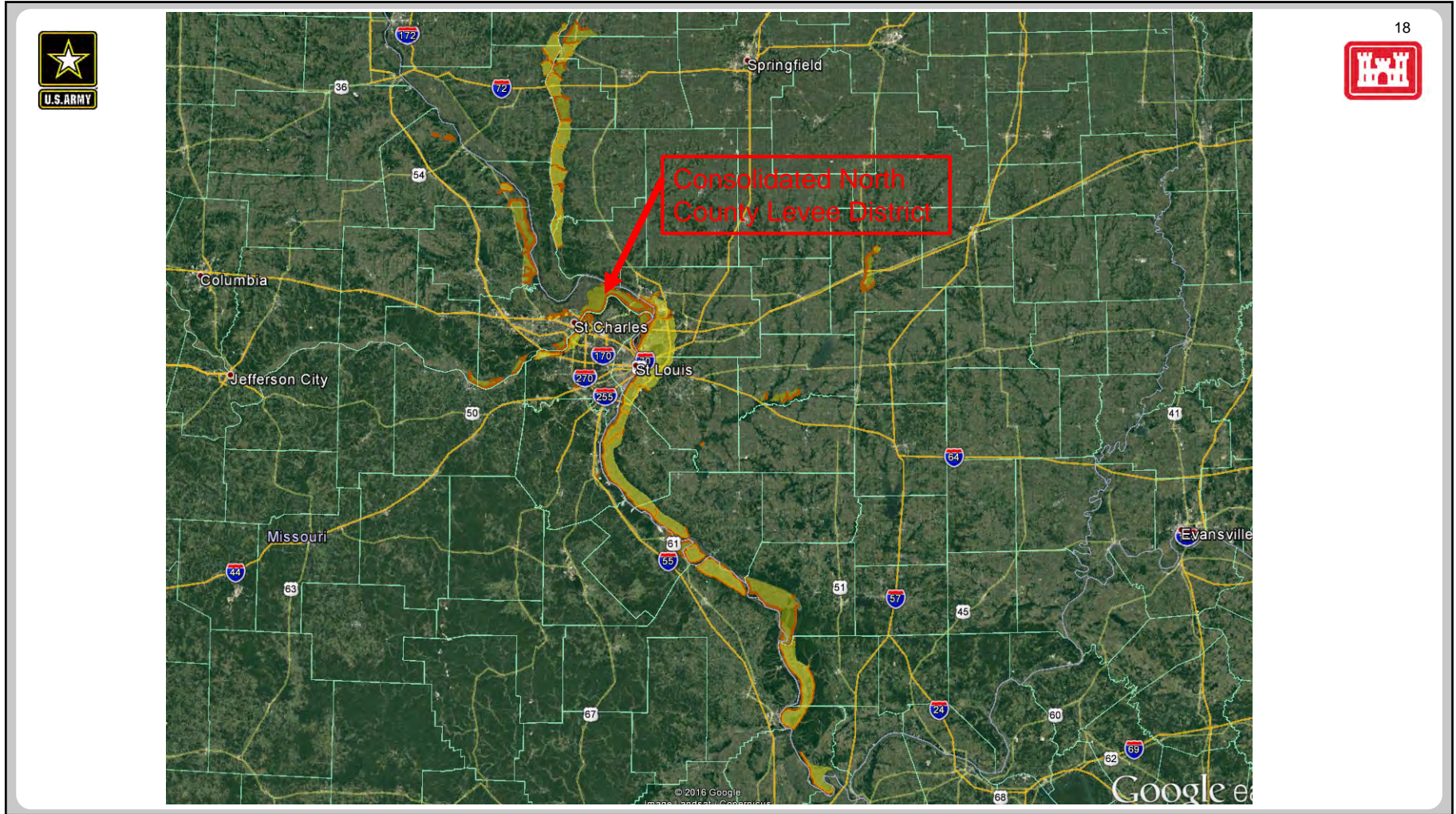




NUTWOOD OVERTOPPING / BREACH

● Upper Mississippi River Mile
— Nutwood Levee
June 26, 2019 MB Survey
Value
429.359
382.601







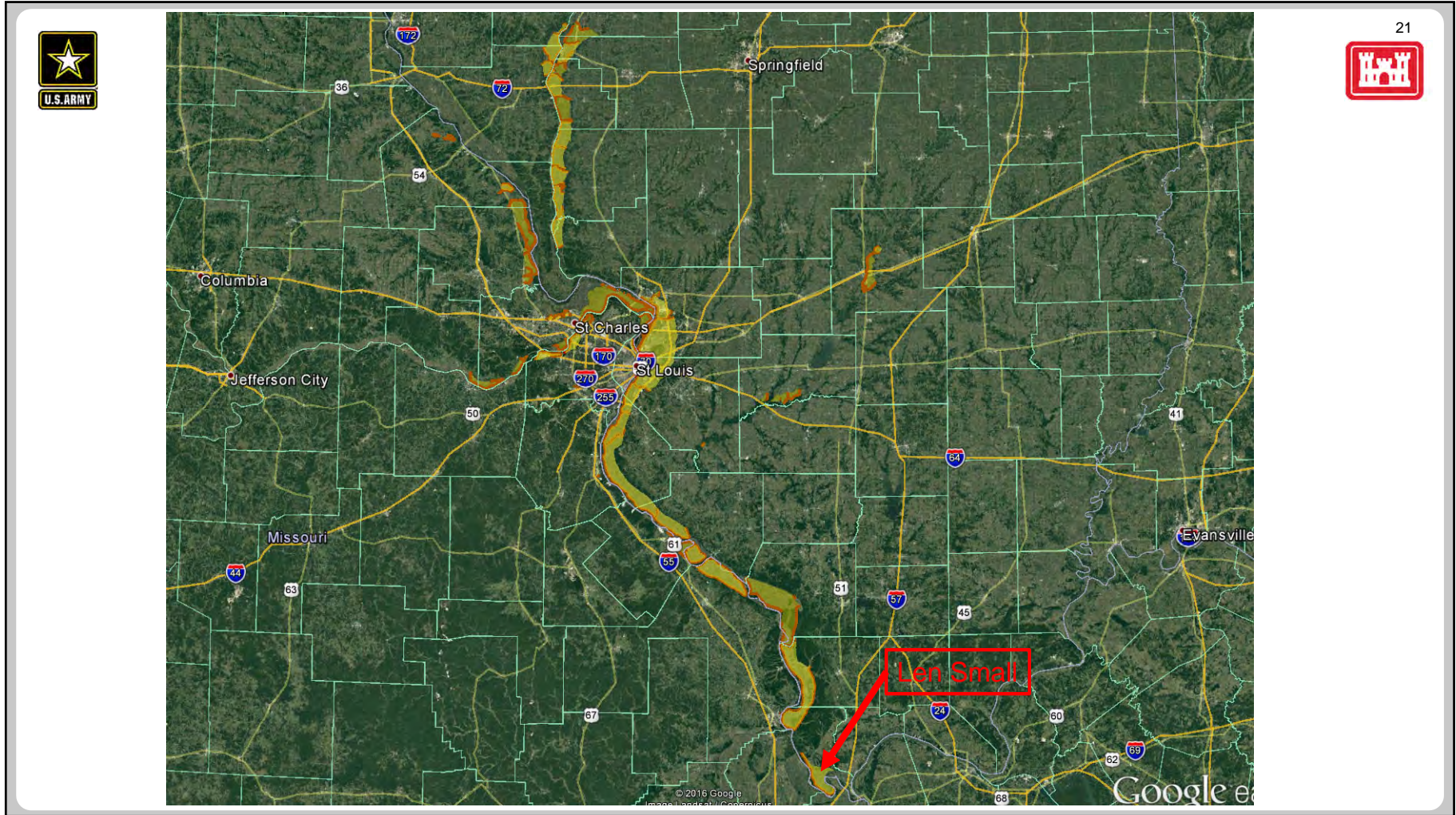
CONSOLIDATED NORTH COUNTY OVERTOPPING





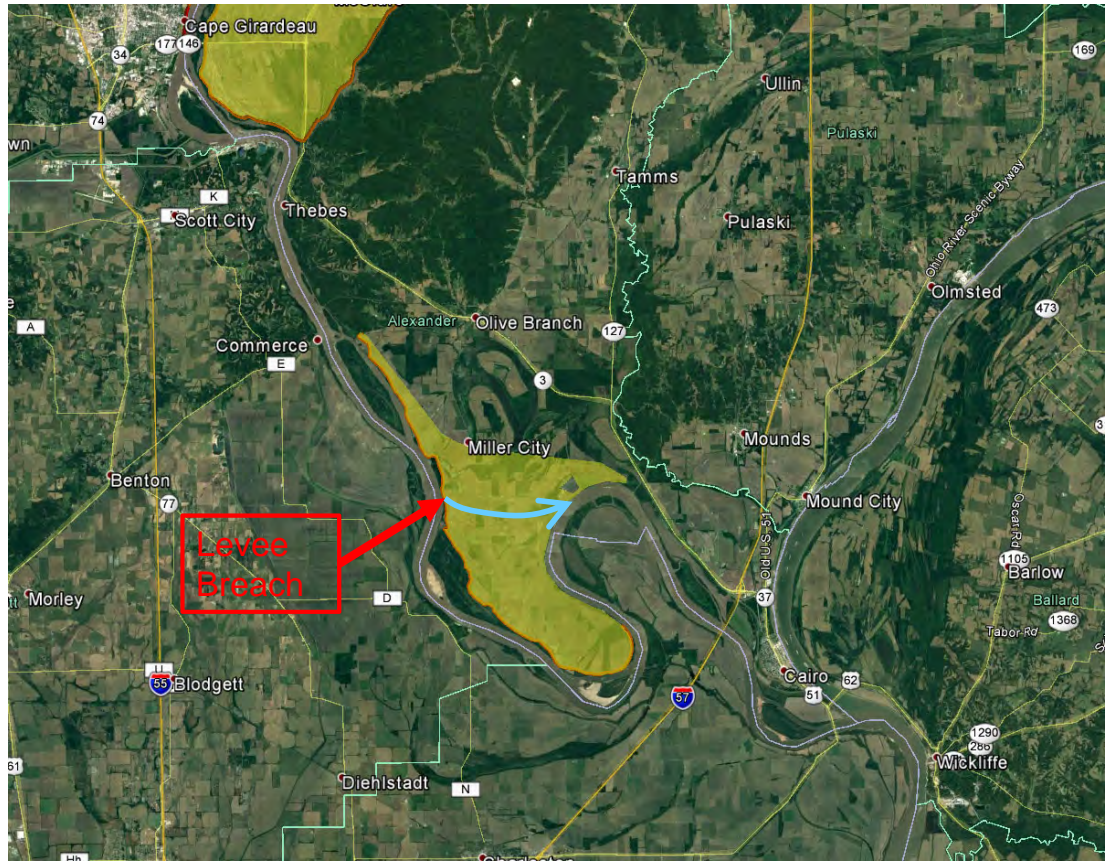
CONSOLIDATED NORTH COUNTY OVERTOPPING







LEN SMALL





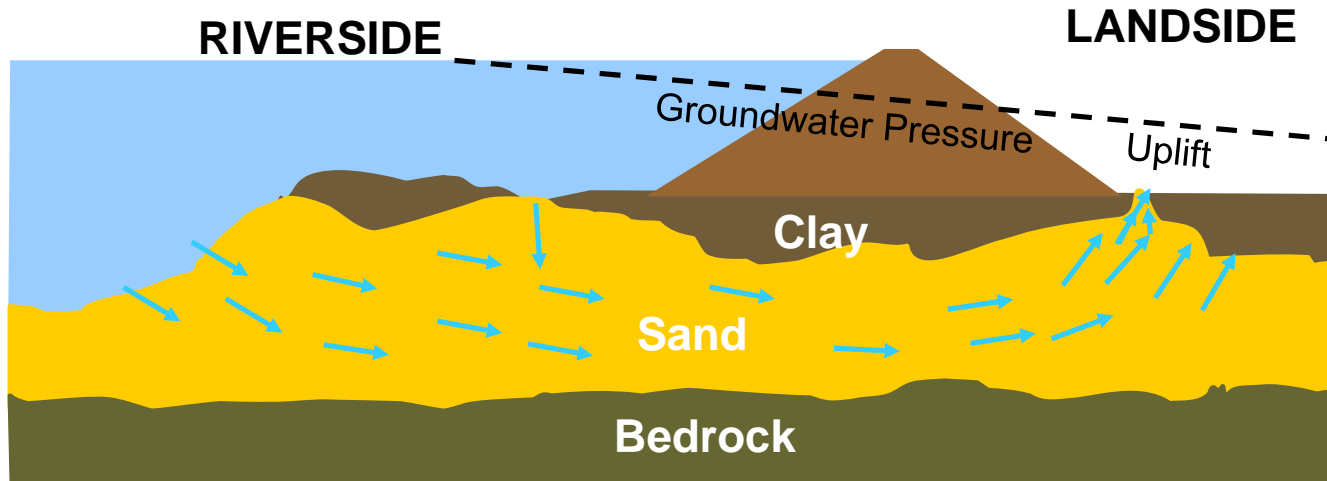
LEN SMALL – 14 JUNE 2019

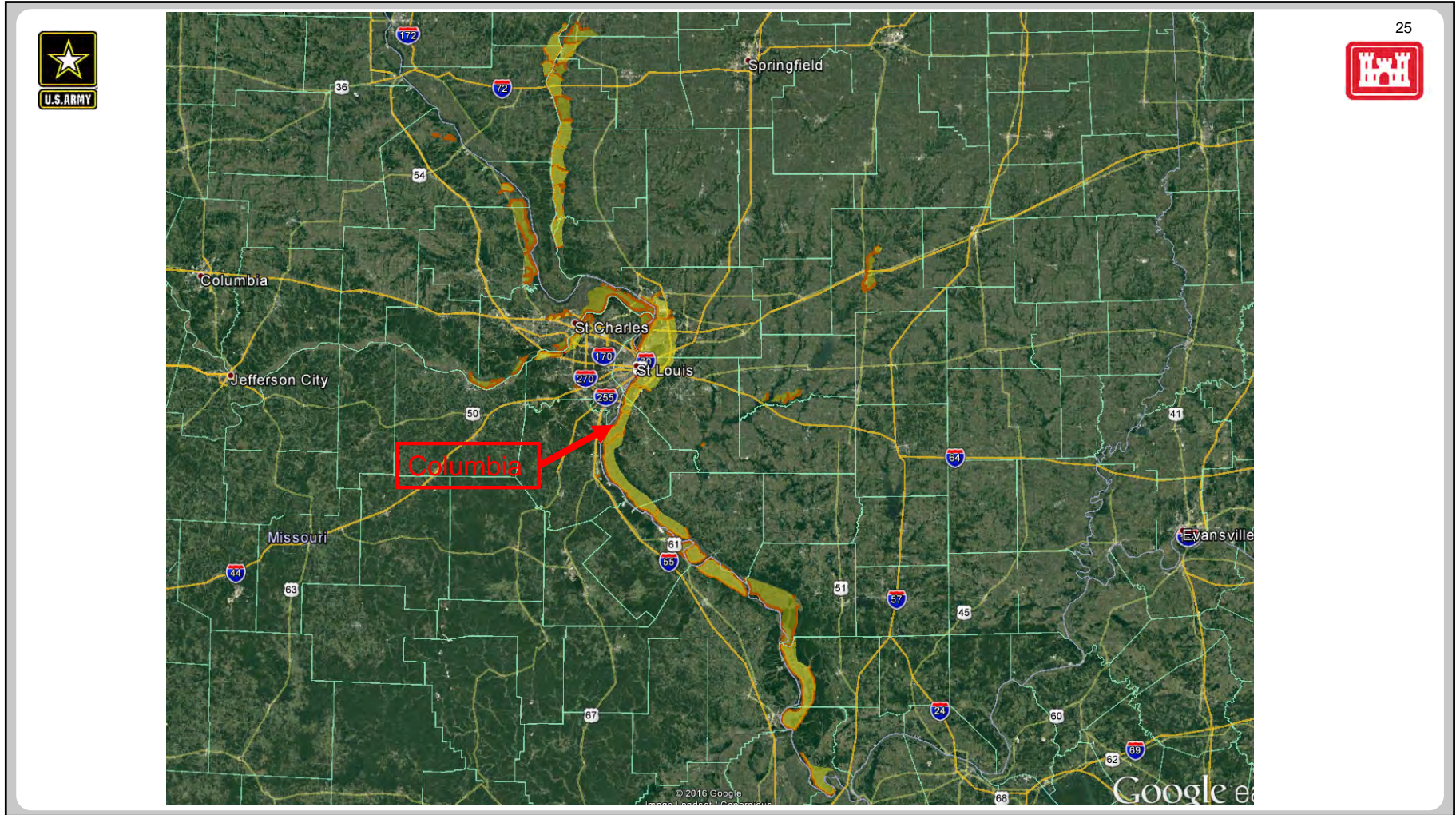
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LEVEE PERFORMANCE - UNDERSEEPAGE

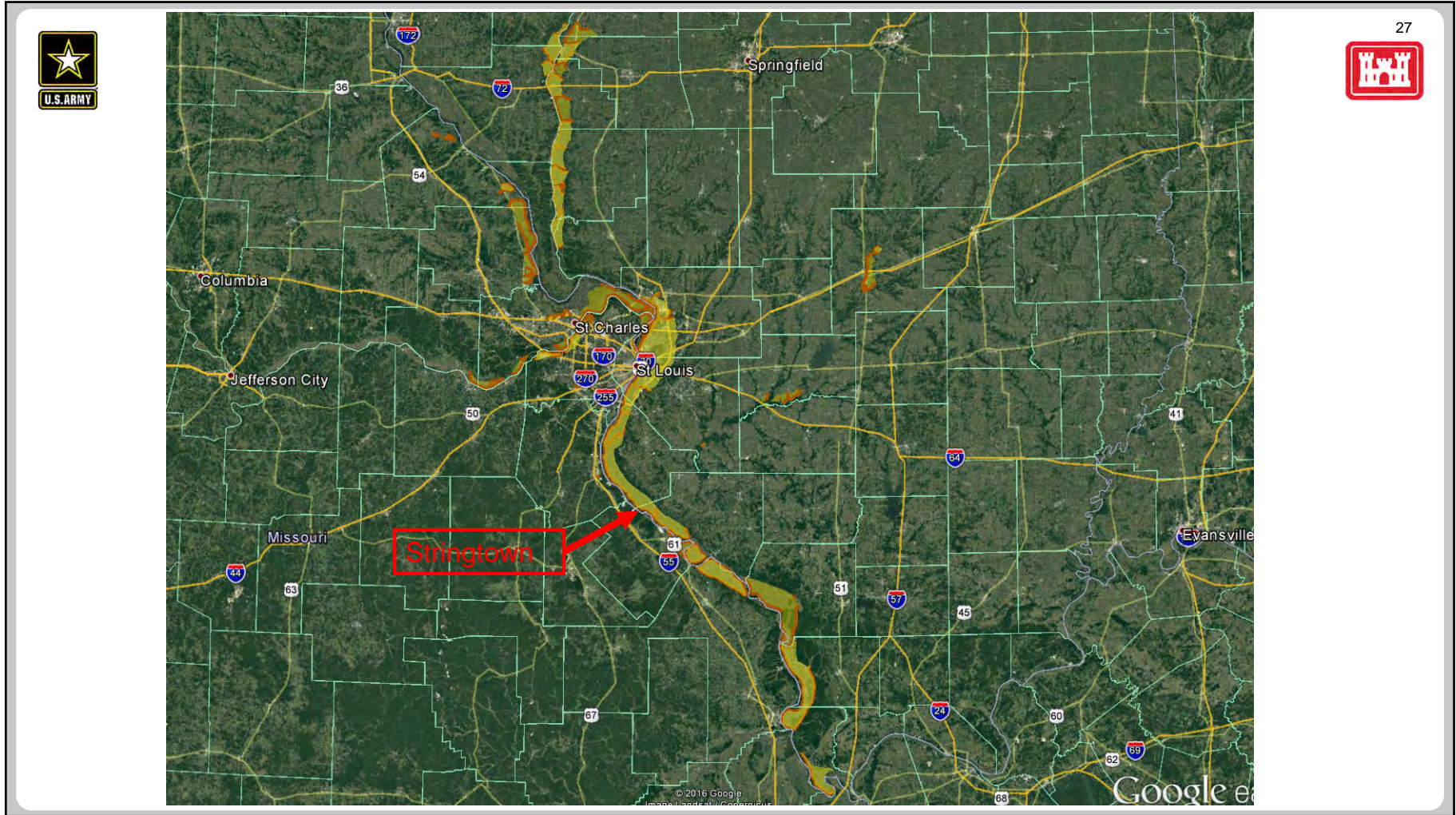






COLUMBIA SANDBOILS

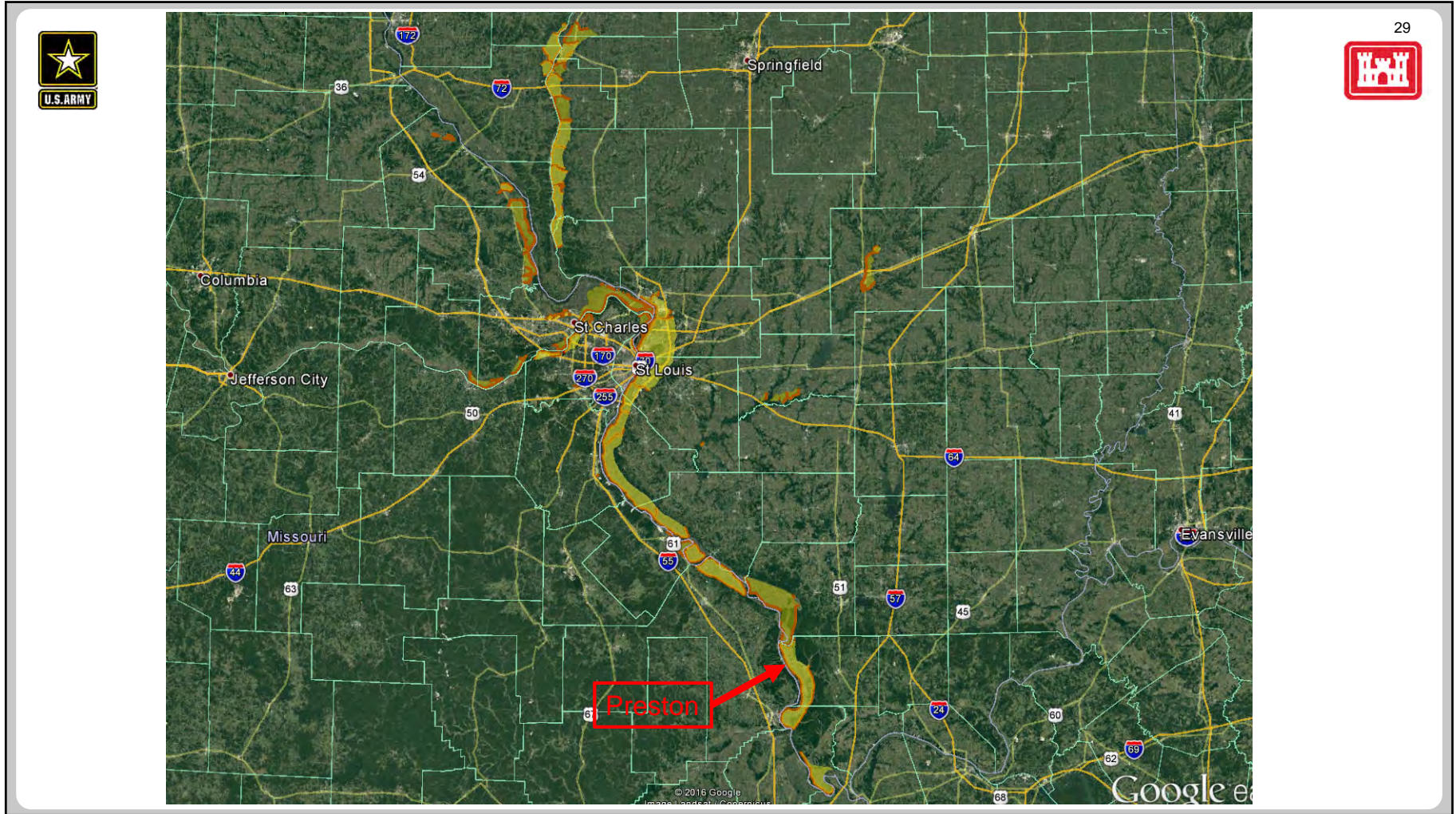






STRINGTOWN SANDBOIL







PRESTON SANDBOILS

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PRESTON SANDBOILS





PRESTON SANDBOILS

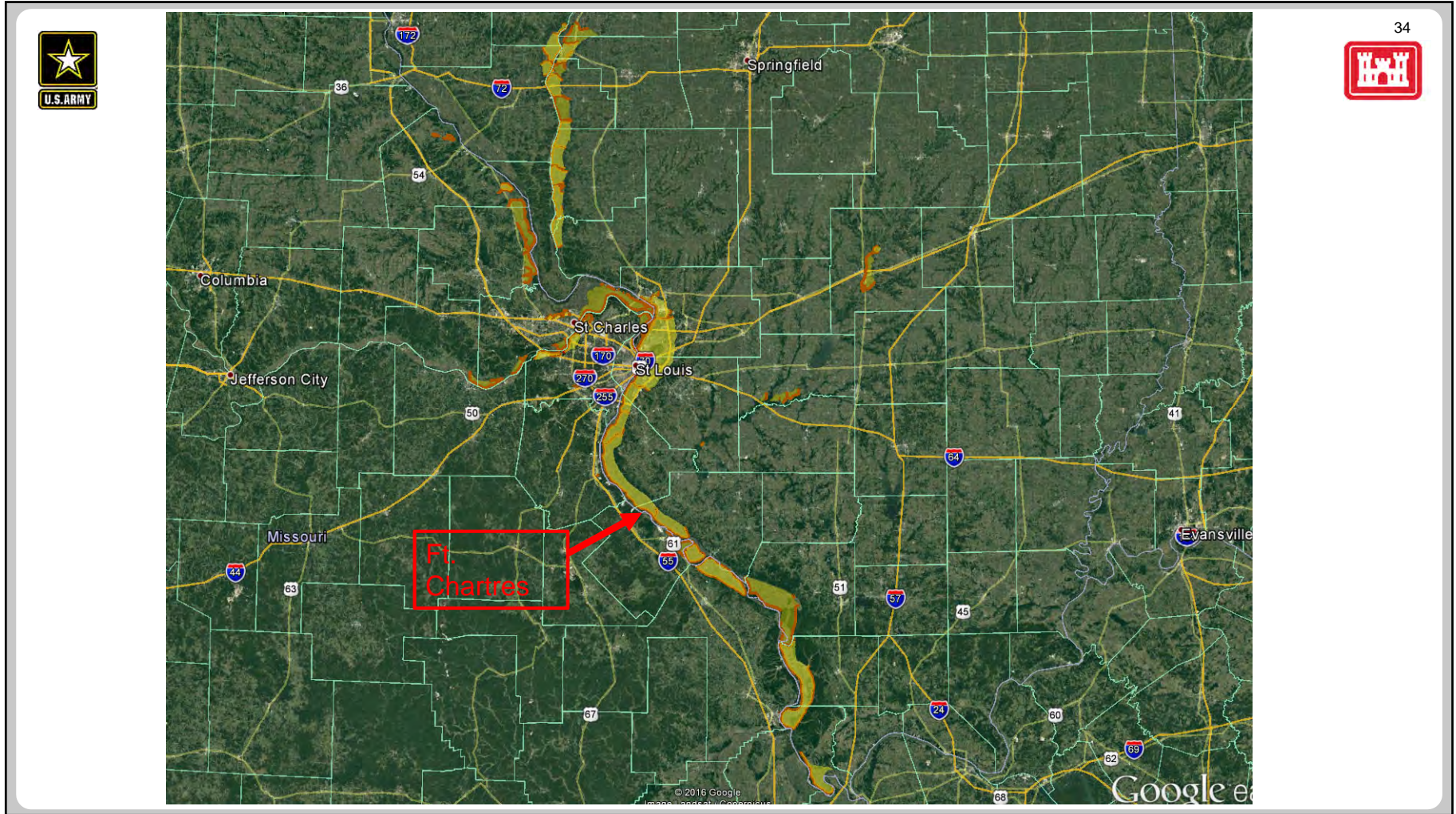




LEVEE PERFORMANCE – “AGING INFRASTRUCTURE”

- Many systems in the region constructed 60+ years ago
- Many components past design life
 - Culverts
 - Sluice Gates
 - Pump Stations / Discharge Pipes
 - Closure Structures



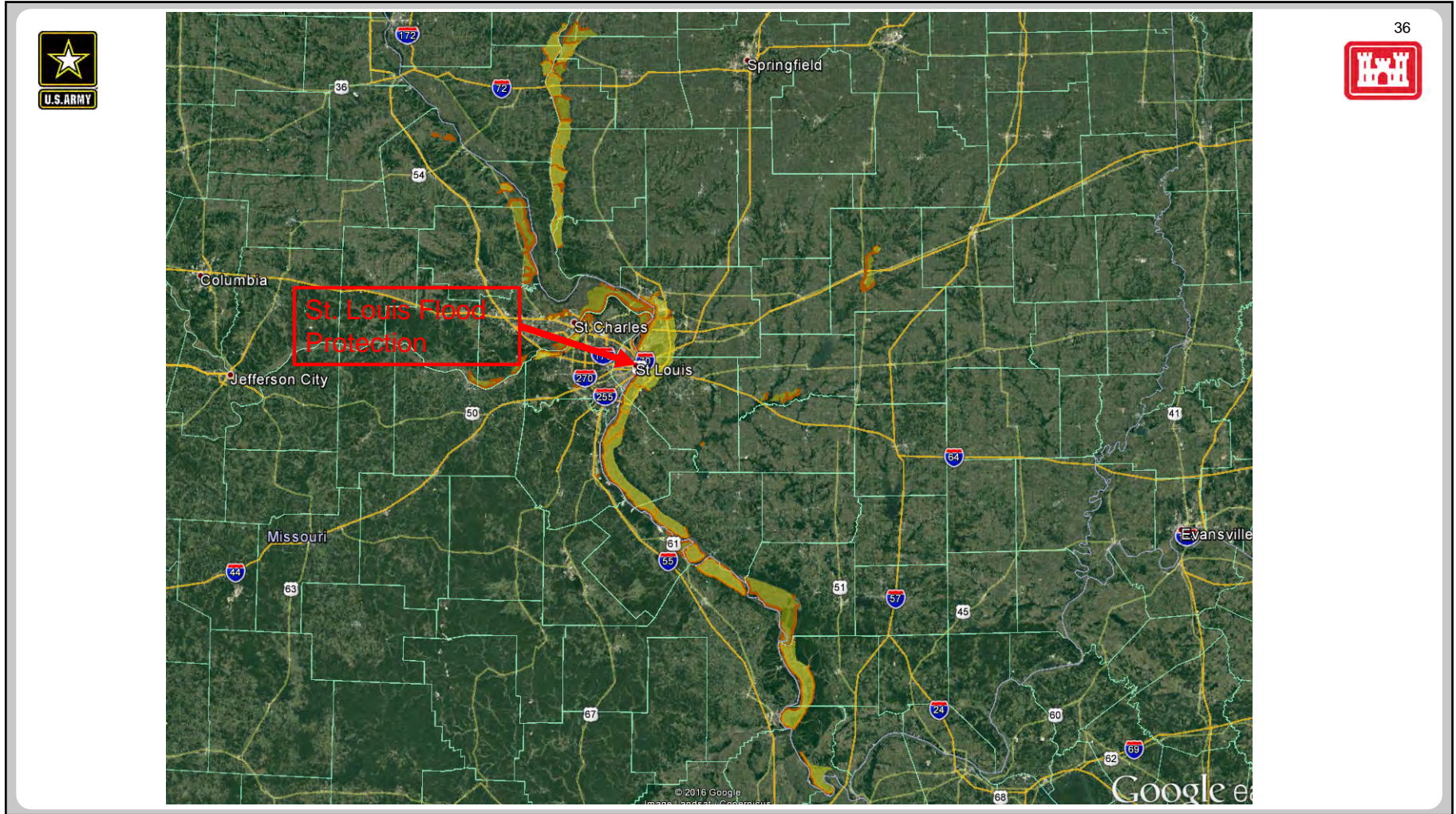




FT. CHARTRES – GRAVITY DRAIN

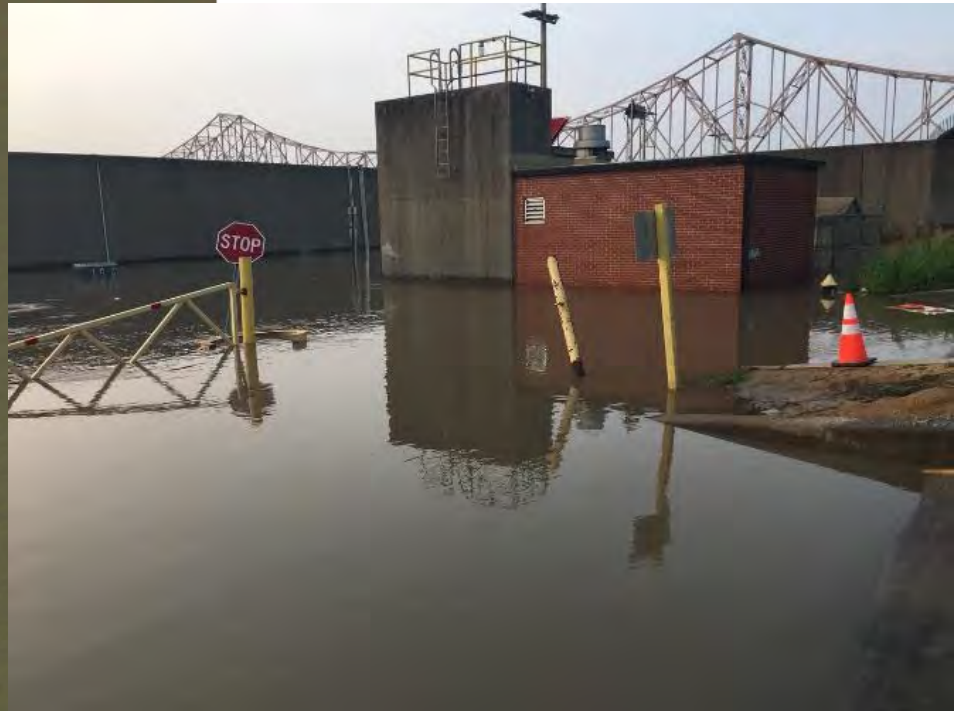
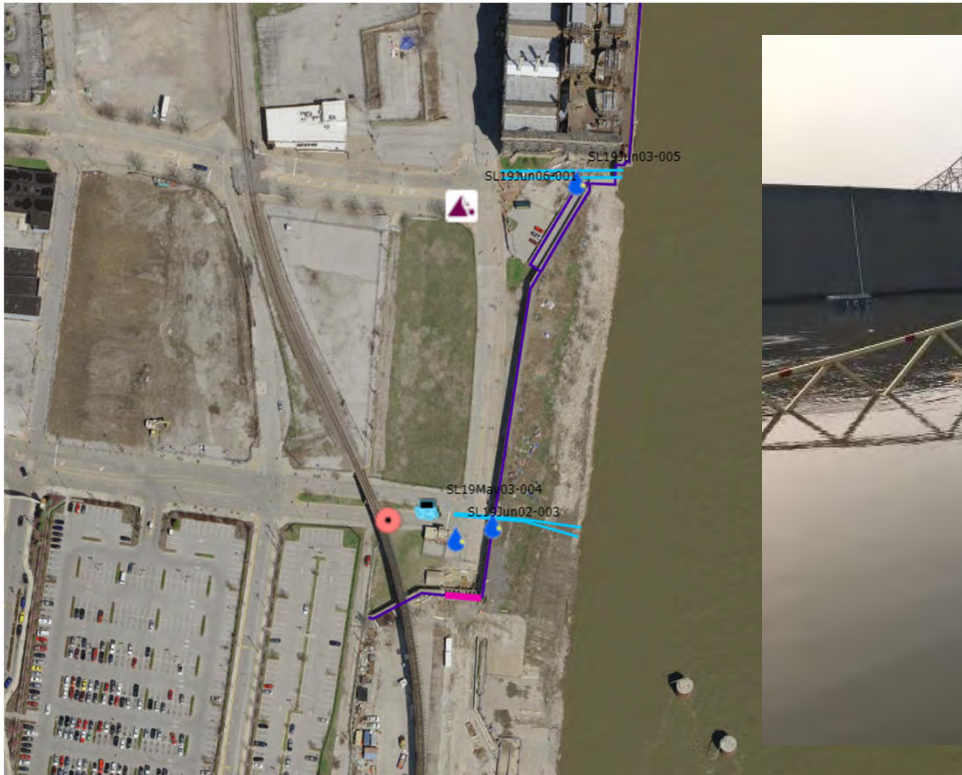
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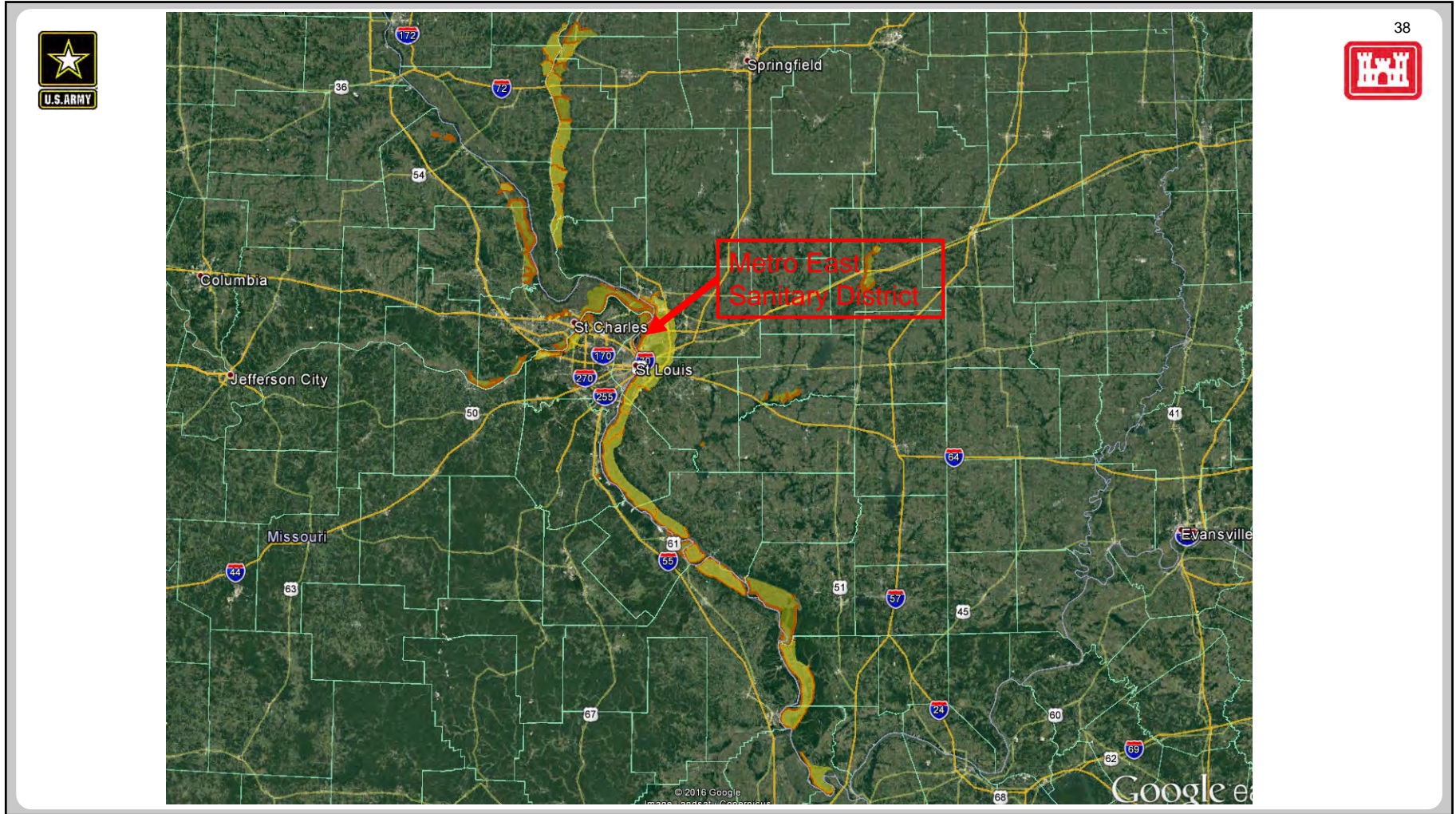






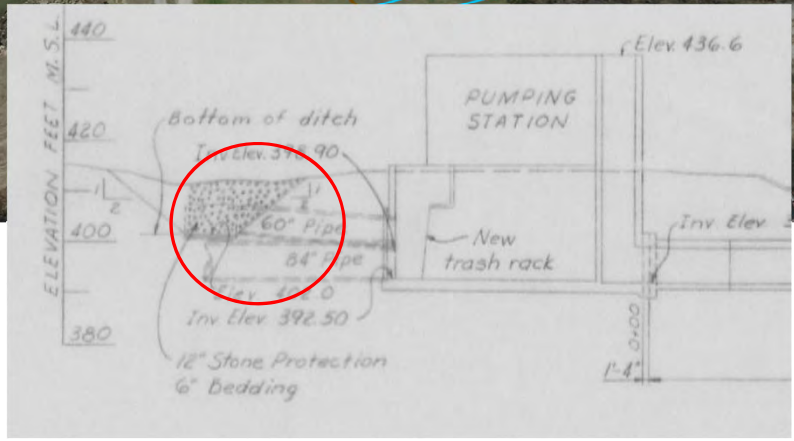
ST. LOUIS – CARR ST. PUMP STATION

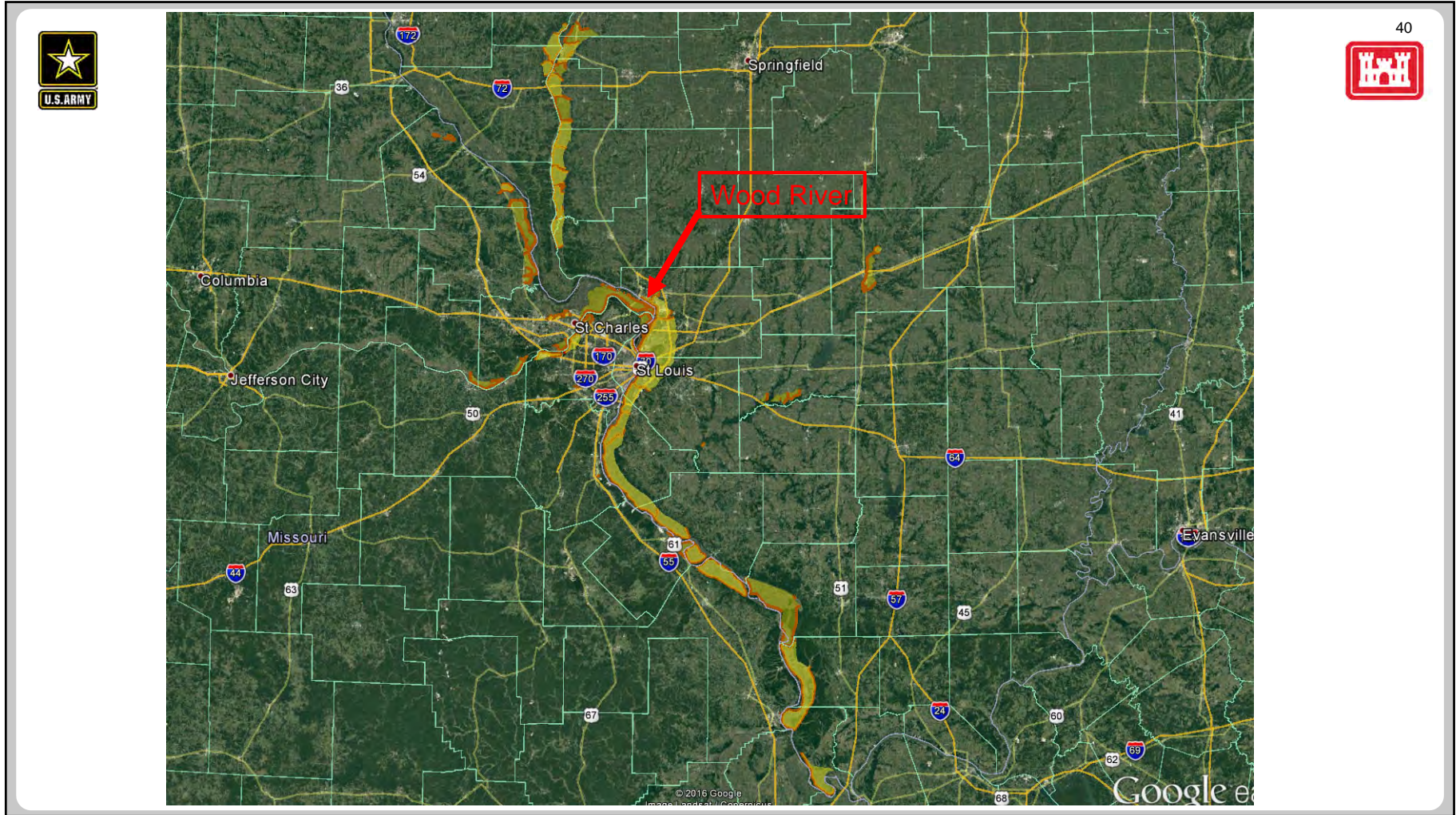






MESD – MADISON PUMP STATION







WOOD RIVER – EAST ALTON PUMP STATION





RECOVERY – PUBLIC LAW 84-99



- Floods between 2015 and 2017 resulted in 34 rehabilitation projects
 - Total costs over \$54 Million
 - 6 projects were still in construction prior to 2019 Flood Event
- **New Damages**
 - 30-40 new projects anticipated
 - ~\$50M Estimated
 - Requests for Assistance
 - Official window starting 26 July
 - “Preliminary” requests for assistance
 - Bulk PIR funds request
 - Initial repair at Nutwood





QUESTIONS

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