

Mississippi Valley Division

Middle Mississippi River Rock Removal

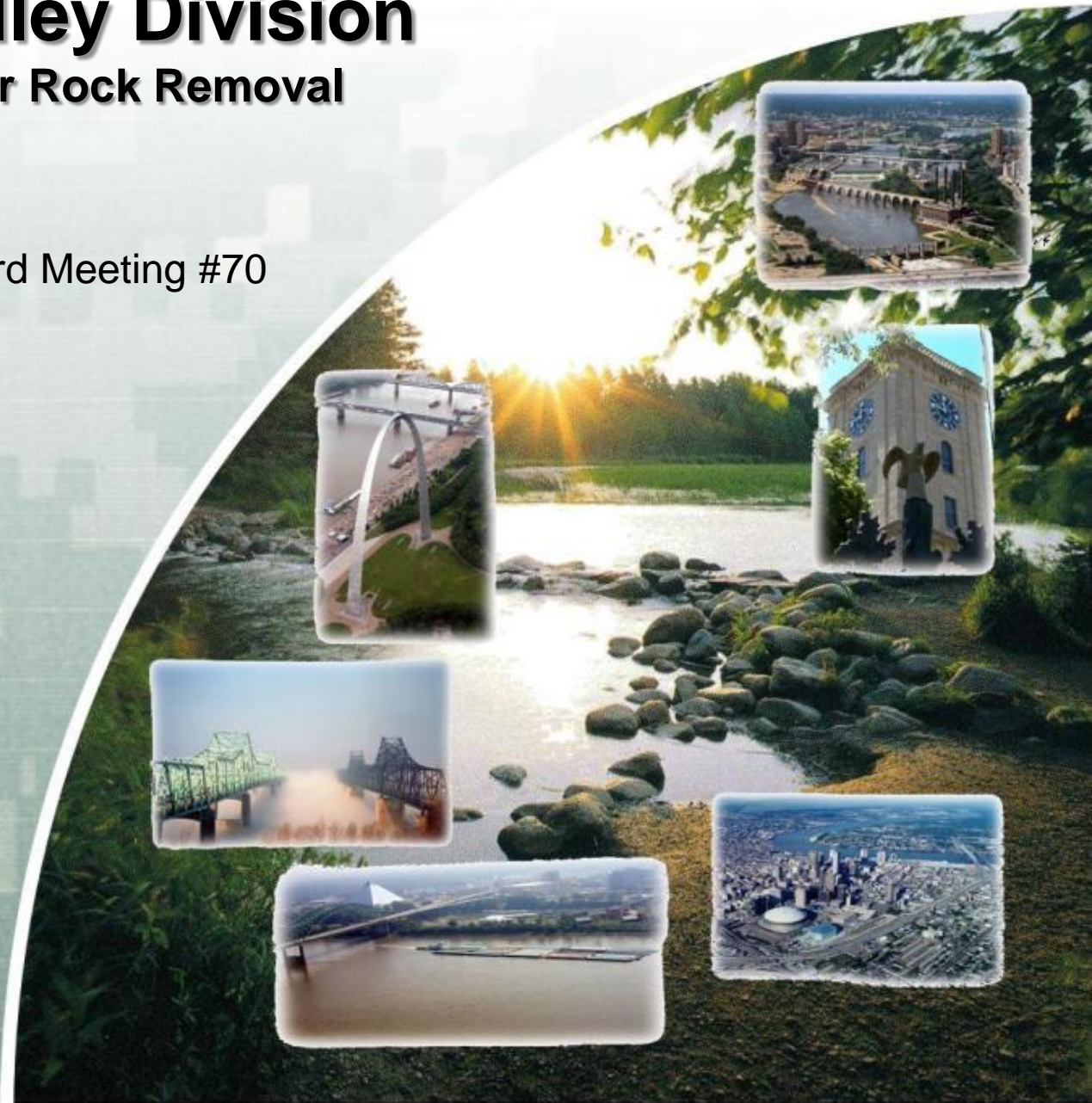
Inland Waterways User Board Meeting #70

New Orleans LA
14 January 2014

Mr. Steve Jones
USACE-MVD
Navigation Manger

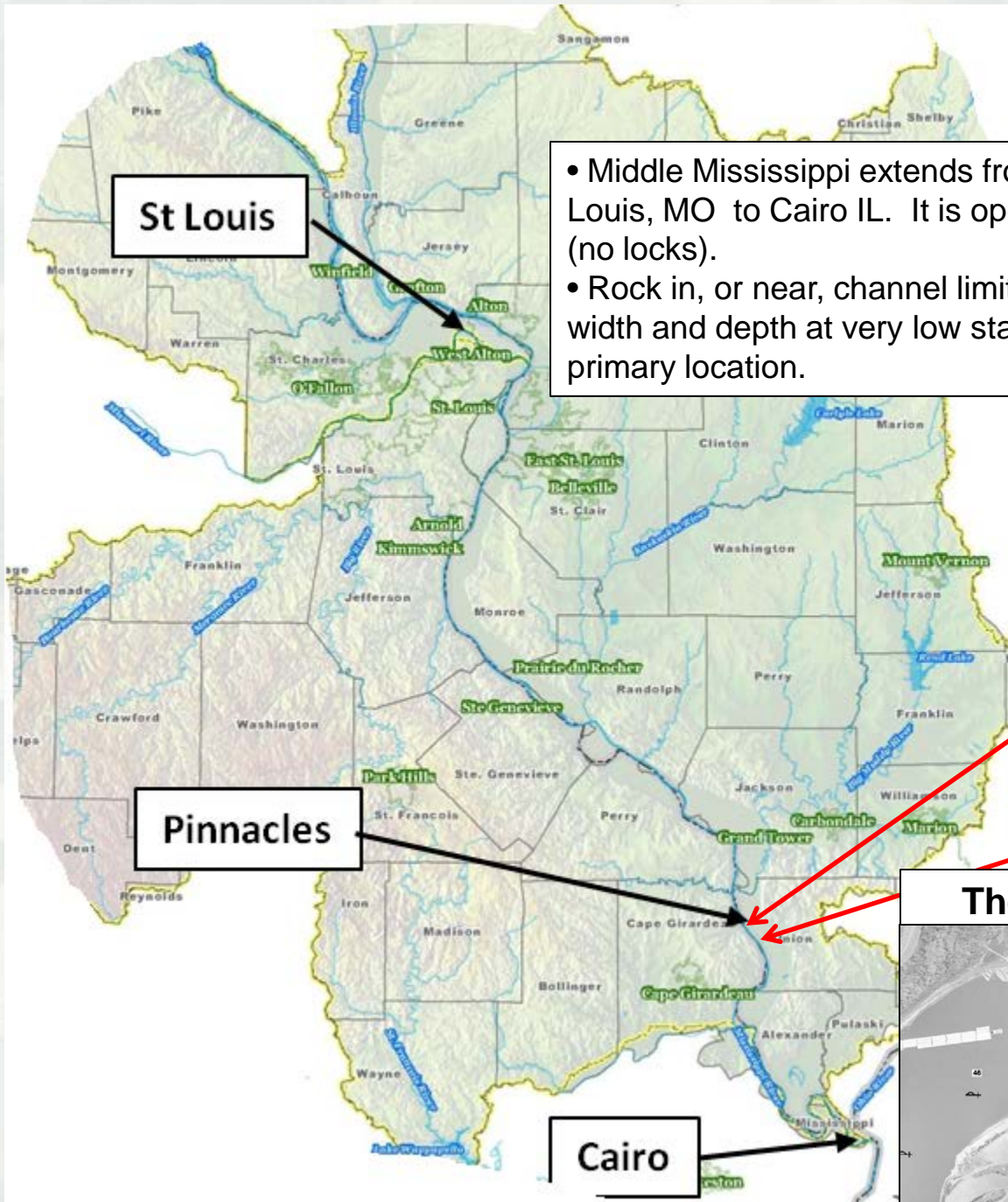


US Army Corps of Engineers
BUILDING STRONG®

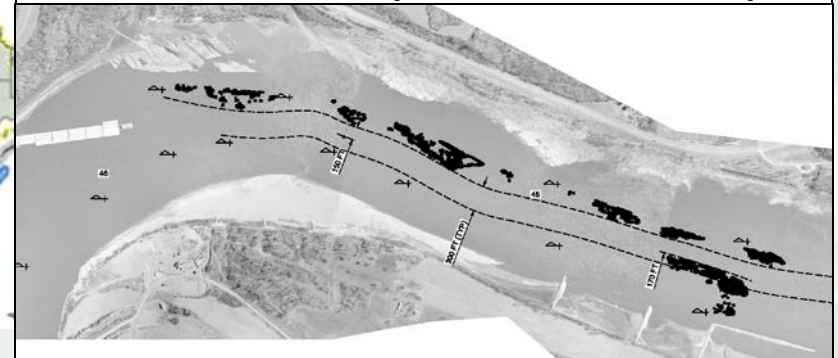


Pinnacle Locations

- Middle Mississippi extends from St Louis, MO to Cairo IL. It is open river (no locks).
- Rock in, or near, channel limits channel width and depth at very low stages at two primary location.

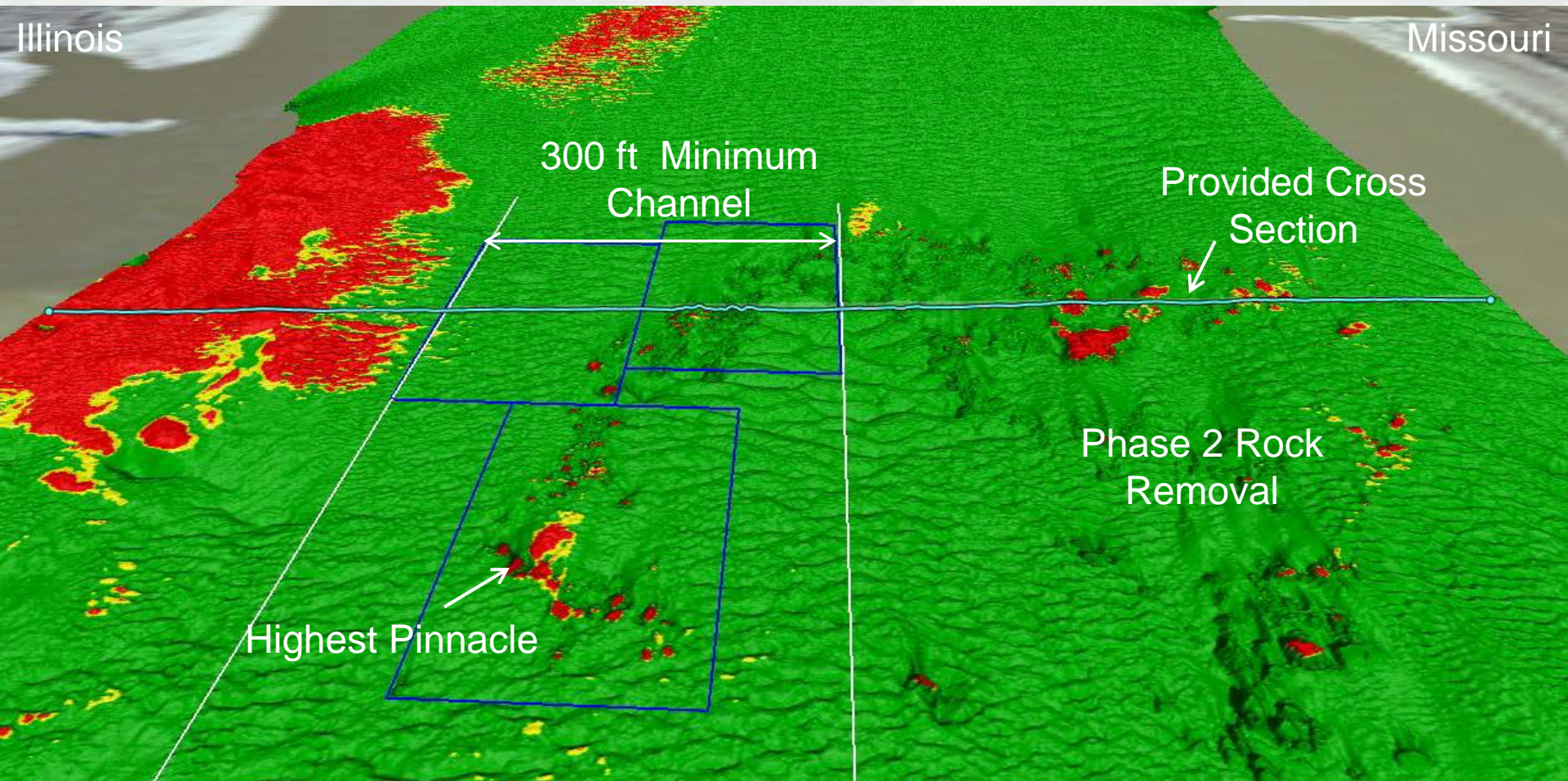


Thebes Reach (River Miles 46-41)

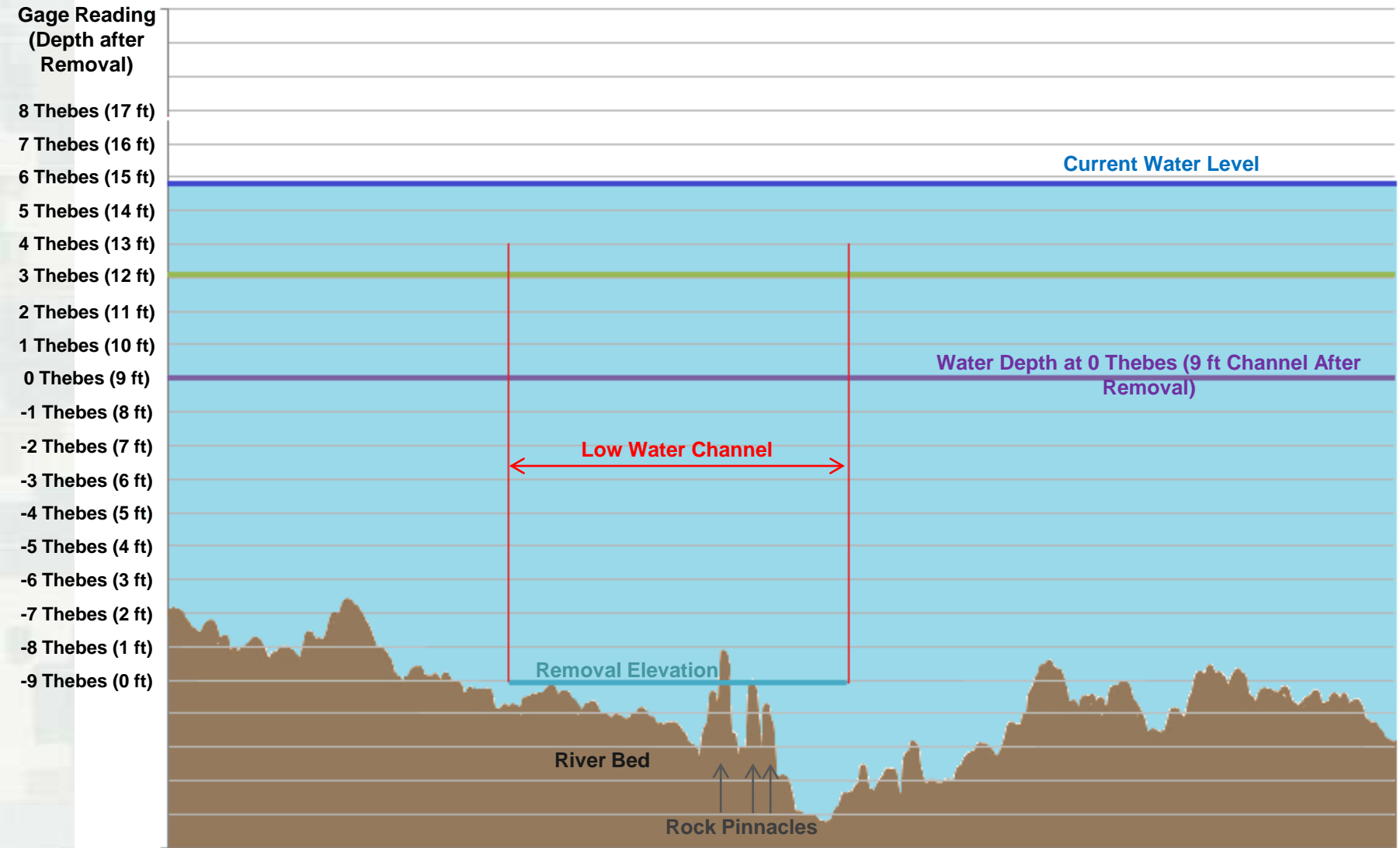


Rock Pinnacles at River Mile 38.5

Thebes Reach, Location G₂



Cross Section at River Mile 38.5



Geometry of a cross section at RM 38.5 (Not to Scale)

Water Depth at 1-29-13 0800 was 5.8 ft at Thebes

1/29/13



Rock Removal Methodologies



Drill & Blast



Hydro-hammer



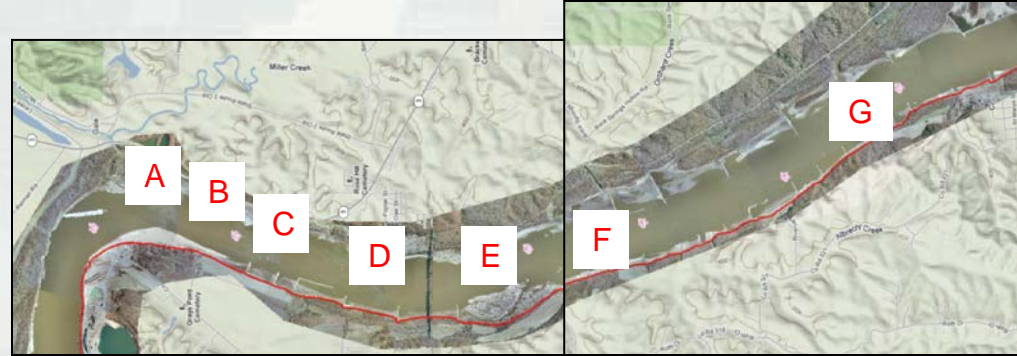
Rock Pinnacle Removal Phase 1

PHASE 1:

- Accomplishes a 300 ft minimum channel in 4 locations that previously had insufficient width and depth.
- The resultant channel can only support 15 barge tow during very low water. Larger tows must “double-trip” or break their tow apart and take individual pieces separately through the reach.



20 barge tow transiting the 300 ft wide channel



Phase 1 - Completed

Thebes	A	B	C	D	E	F	G	H
3.9 - 3.0	300+	300+	300	300+	300+	300+	300+	300+
2.9 - 2.0	300+	300+	300	300+	300	300	300+	300+
1.9 - 1.0	300+	300+	300	300+	300	300	300+	300+
0.9 - 0.0	300+	300+	300	300+	300	300	300+	300+

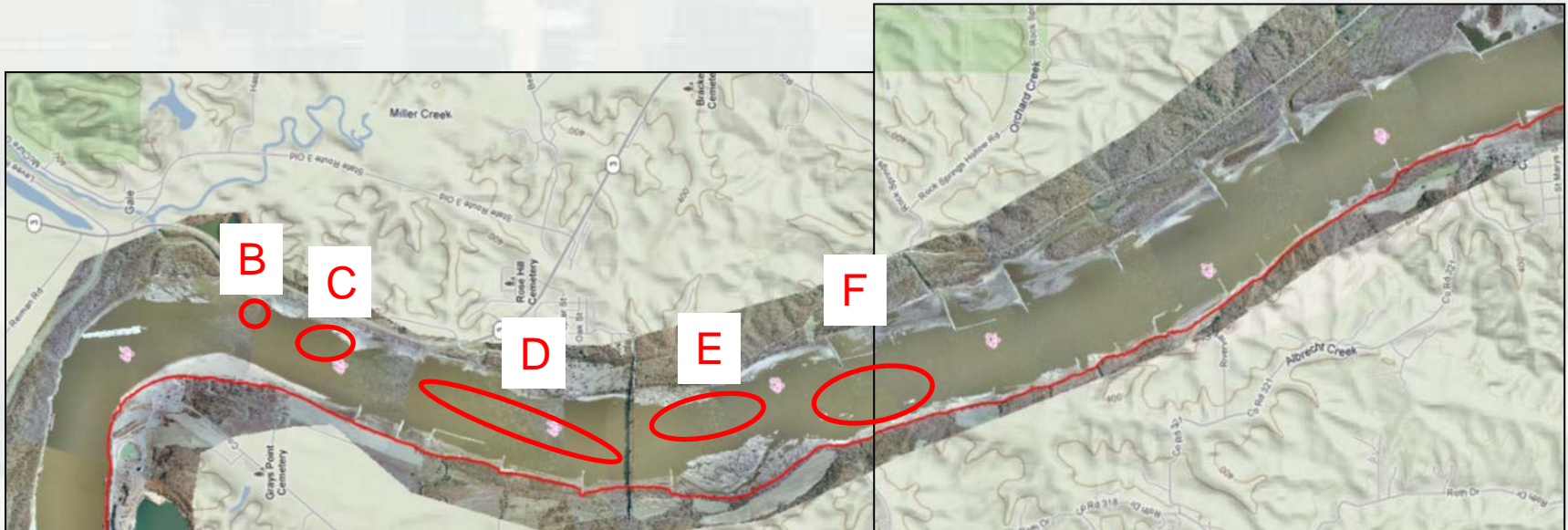
- Acceptable Channel Condition for a 20 (4x5) Barge Tow (300+ ft wide channel)
- Minimally Acceptable – at risk for a 20 (3x5) Barge Tow (300 ft maximum channel or questionable channel width to flank through bend or for alignment purposes.

PHASE 1 MILESTONES

- 7 December 2012 – Awarded 2 contracts (Newt & Durocher)
- 11 January 2013 – Minimum channel requirements achieved through Thebes Gage 0' (approx -7' STL Gage)
- 27 February 2013 – Phase 1 Completed
- 1,000 cubic yards of material was removed at a cost of \$8M

Rock Removal

Phase 2 Base and Option 1 FY14

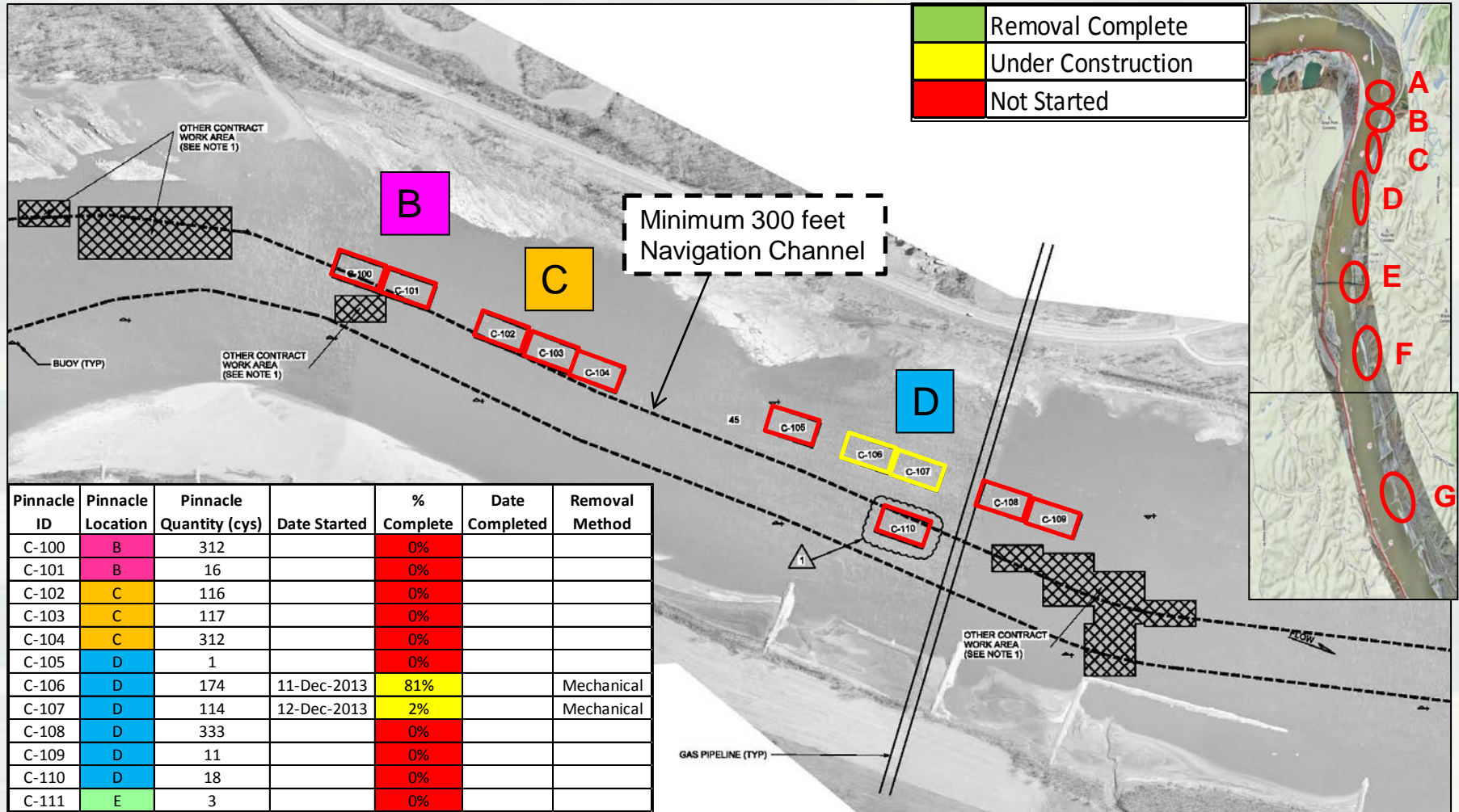


- 2 July – Awarded Rock Removal Phase 2 to Massman Construction
Includes a base and 3 option years for a total of \$19M
- Issued NTP on 13 November for base and one option year - \$11.4M
Base = 1,527 cyds; Option 1 = 1,306 cyds
- Massman began removal on 11 December
Requires a Cape Girardeau stage of 10' or below.
Period of Performance 150 days

Rock Removal Phase 2 Thebes

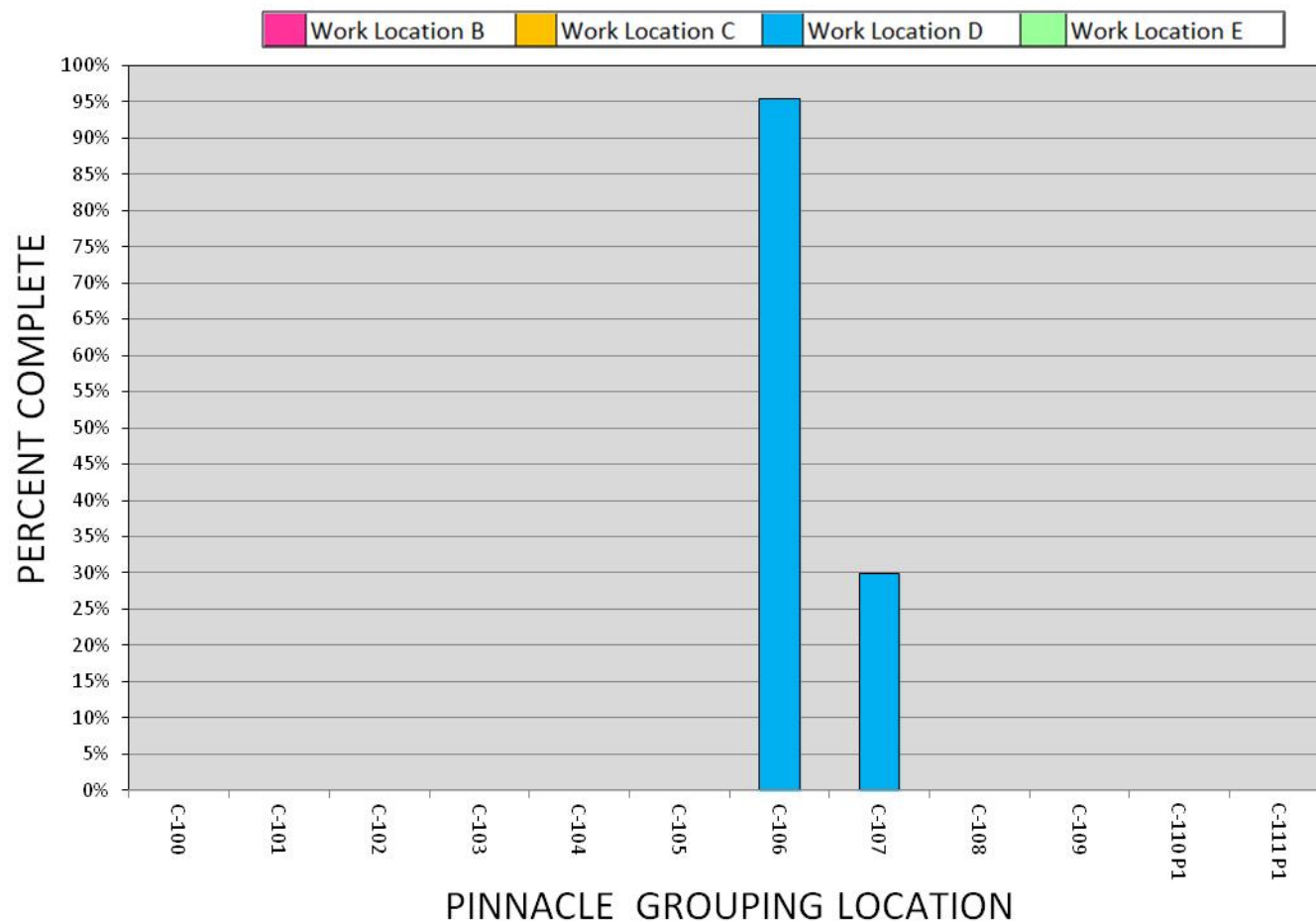
River Miles 46-43

Massman Construction



Sites B, C, D, E Thebes River Miles 46-43 Massman Construction Update (As of 1-04-2014)

ROCK PINNACLE REMOVAL PHASE 2 MASSMAN CONSTRUCTION



Hydro Hammer at C-106



Excavation at C-106



Mel Price Lock and Dam - Alton IL.



River Mile	First Operational	Average Lift	Pool Length	Pool Size	Lock	Dam	Tons
UMR 200.5	10 Oct 1989	15 feet	40.6 miles	31k acres	Two locks 600x110 1200x110	1,160 ft 9 gates	58M

Mel Price Lock and Dam - Alton IL



Failed Cable – failure point is just above the sockets in an area which is not accessible except by dewatering.



View looking at cable/socket connection to gate leaf from on top of the leaf looking into the slot

Chronology of Events:

- 15 Sep 2013 – Hoisting cable failed.
- 20 Dec 2013 – Second cable failed. Wire rope expert hired to determine cause of failures.
- 28 Dec 2013 – Third cable fails. Lock is closed indefinitely. Planning commences for emergency dewatering and inspection of all cables.

Current Schedule:

- Setting bulkheads completed 10 Jan
- Complete dewatering and inspect – 11-12 Jan
- Results from inspection – 18 Jan
- Additional analysis up to 2 weeks