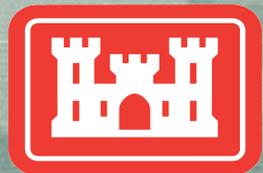


Olmsted L&D Update

2016 Locks Maintenance Workshop

Waylon Humphrey, PE
Chief – LRL Locks and Dams
502-315-6695
502-548-5373 (c)

10 February 2016



®



Agenda

- Status
 - ▶ Orientation/Importance/Relevance
 - ▶ Project Overview
 - ▶ Project Components
 - ▶ 2015 Accomplishments
 - ▶ 2016 Goals
 - ▶ Estimated Completion
 - ▶ Major Lock Rehab
 - ▶ Challenges
 - ▶ Authorization Milestone

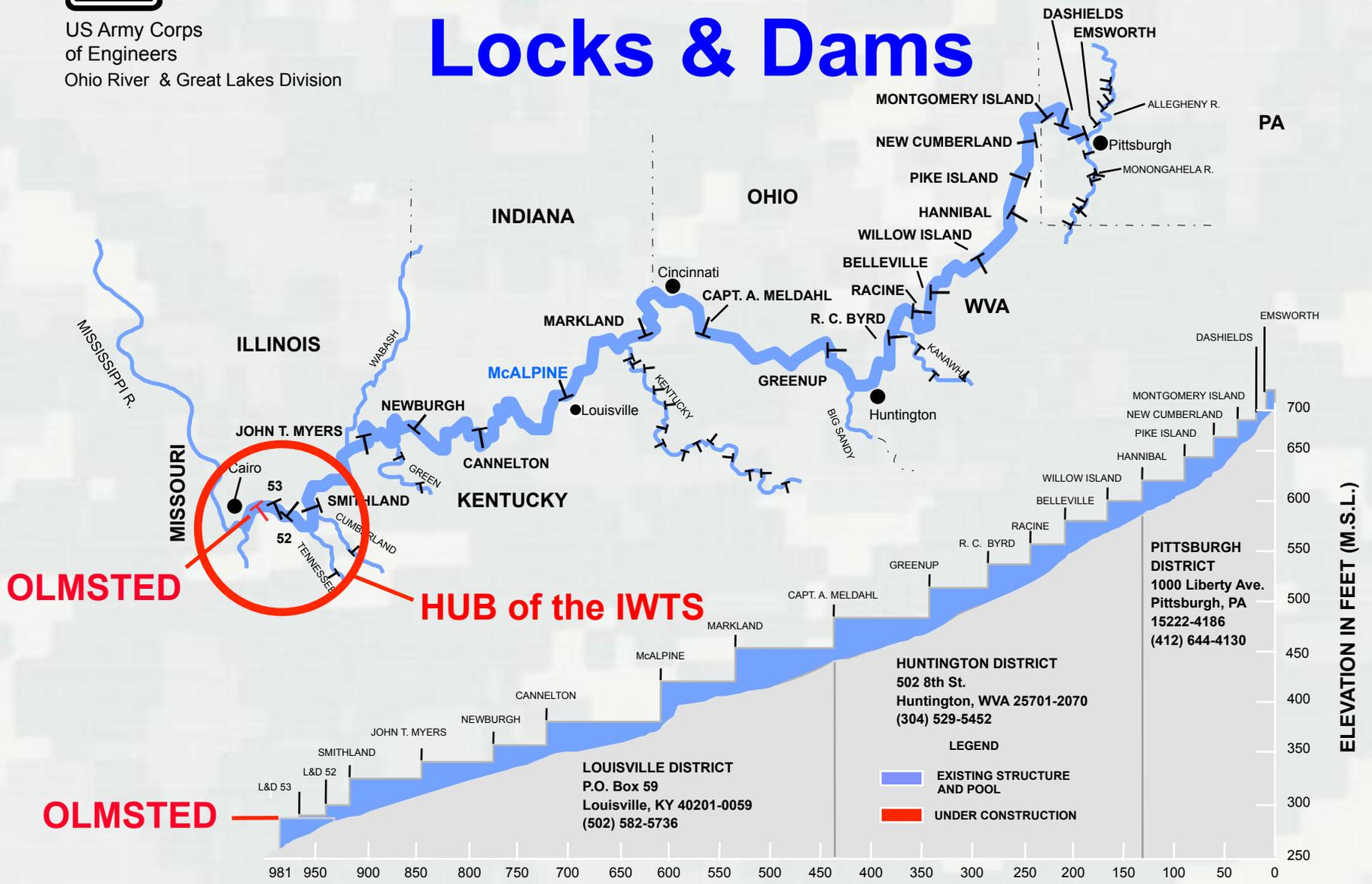
- Discussion





US Army Corps
of Engineers
Ohio River & Great Lakes Division

Ohio River Main Stem Locks & Dams



Olmsted Importance



Original (600') Chamber - 1928
Temporary (1,200-ft) Chamber - 1969

L&D 52/53 =
~85M tons/yr



Original (600') Chamber - 1929
Temporary (1,200-ft) Chamber - 1980



Olmsted Relevance



Commodities transiting Olmsted proportionately **equal to** the passenger traffic through Dallas Love Field + Atlanta Hartsfield + Chicago O'Hare + LAX



Olmsted Project Overview - Status



Olmsted Dam - Aerial

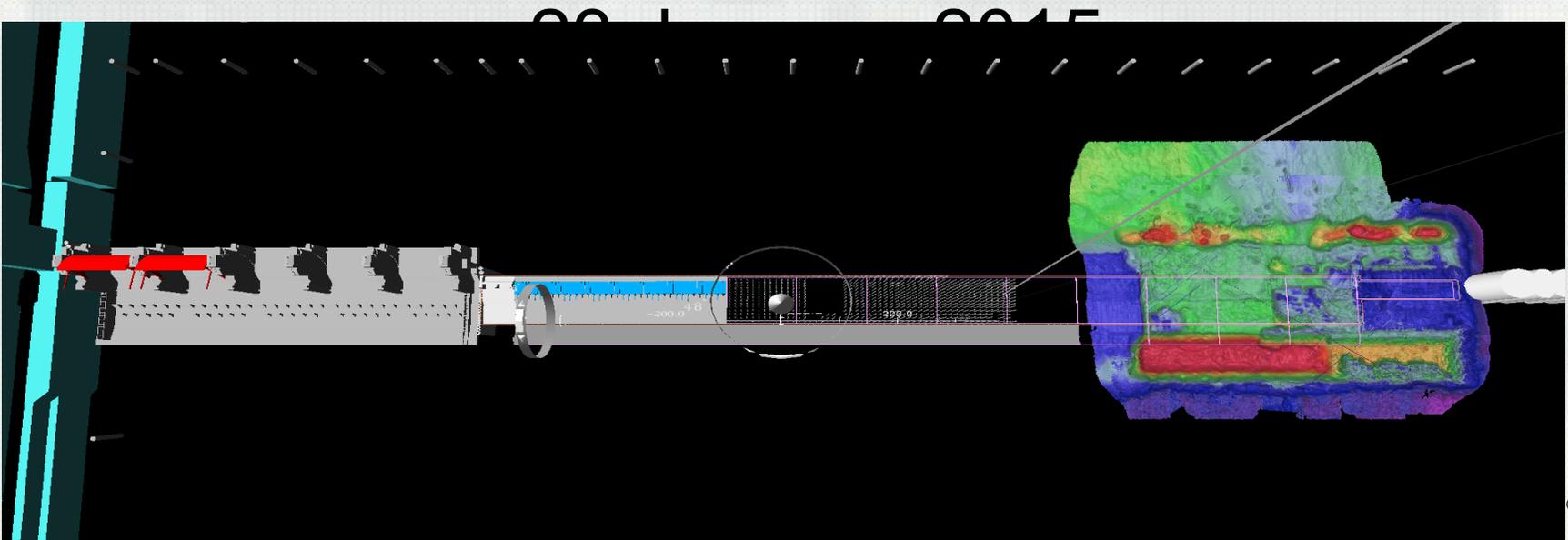
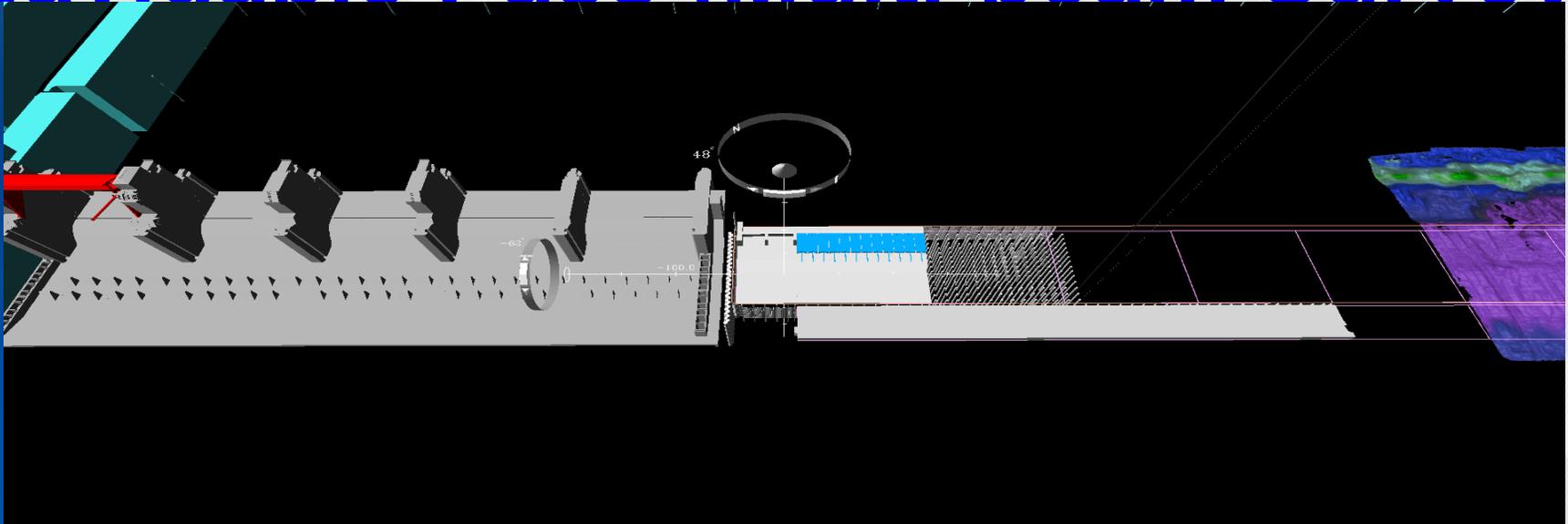


August 2014

Tainter Gate Shell Cut-Away



Navigable Pass (Multi-beam Survey)



22 October 2015

Olmsted Dam – Precast



* Lower Pier Shell No. 5 suspended under Super Gantry Crane



Olmsted Dam – Heavy Lift



* Lower Pier Shell No. 5 (17/18) being lowered from the Catamaran Barge



Olmsted Dam – Marine



* Low Water Season = 15 Jun through 30 Nov



Olmsted Cofferdam/Locks/Approach Walls



Awarded 1993

Completed 1995



Awarded 1999



Awarded 1995

Completed 2002

10/2/2000



Completed 2004

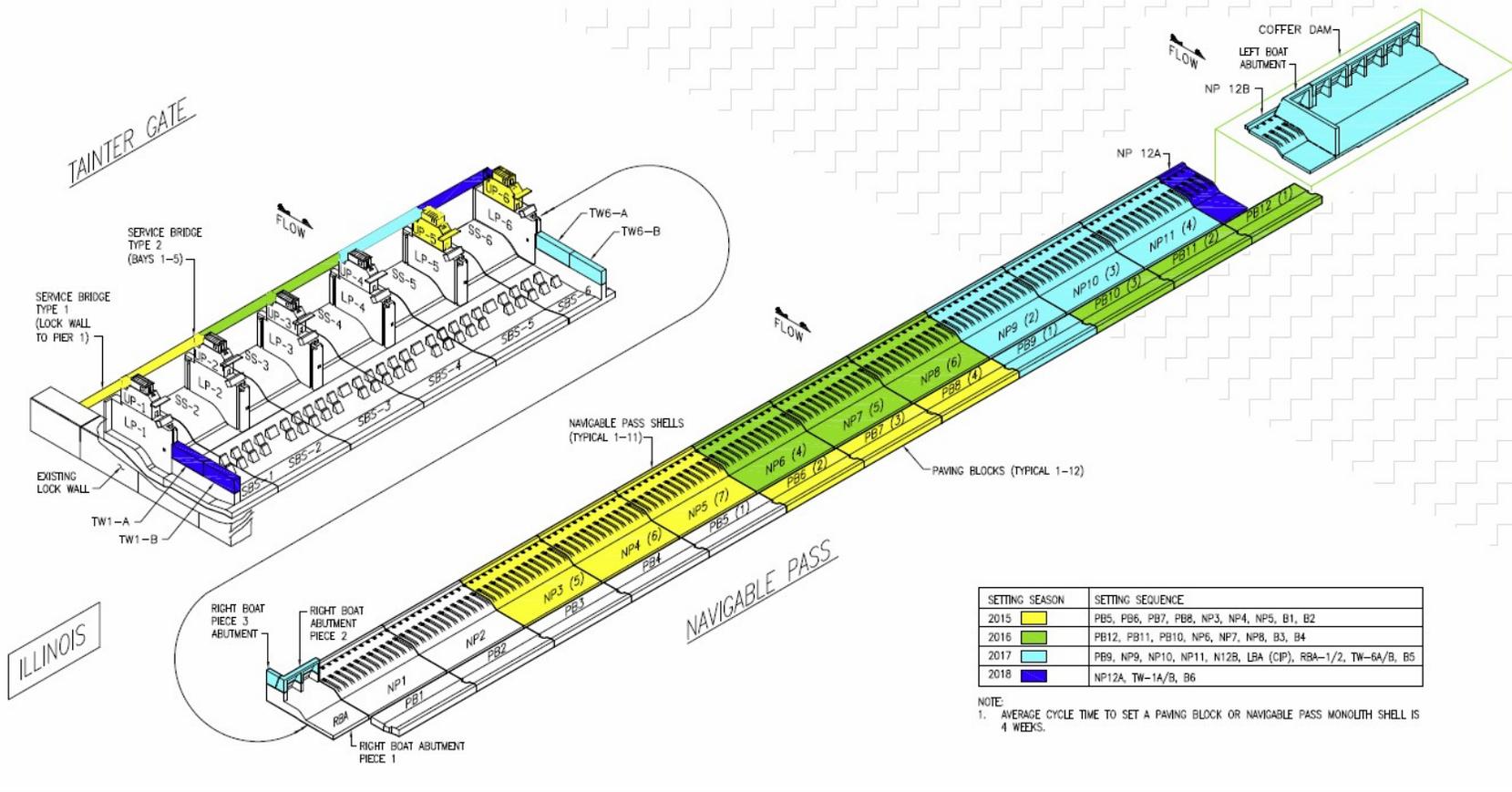


2015 Plan to Complete

RINGER BARGE PLACEMENTS	
SHELL	WEIGHT (TONS)
RBA PIECE 2	372
RBA PIECE 3	81.5
TW1-A	347
TW1-B	302
TW6-A	308
TW6-B	316
SERVICE BRIDGE TYPE 1	118
SERVICE BRIDGE TYPE 2	283
12 REMAINING RINGER PLACEMENTS	

CAT BARGE PLACEMENTS	
SHELL	WEIGHT (TONS)
NP 3-11	4955
NP 12A	(4785.7) 1/2
PAVING BLOCKS 5-12	2562
18 REMAINING CAT BARGE PLACEMENTS	

ACRONYM LEGEND	
LP	- LOWER PIER
TG	- TANTER GATE
SB	- SERVICE BRIDGE
GM	- GROUT MAT
FP	- FOUNDATION PILE
M/SP	- MASTER/SHEET PILE
RBA	- RIGHT BOAT ABUTMENT
PB	- PAVING BLOCK
NP	- NAVIGABLE PASS (MONOLITH)
UP	- UPPER PIER



SETTING SEASON	SETTING SEQUENCE
2015	PB5, PB6, PB7, PB8, NP3, NP4, NP5, B1, B2
2016	PB12, PB11, PB10, NP6, NP7, NP8, B3, B4
2017	PB9, NP9, NP10, NP11, NP12, LBA (CIP), RBA-1/2, TW-6A/B, B5
2018	NP12A, TW-1A/B, B6

NOTE:
1. AVERAGE CYCLE TIME TO SET A PAVING BLOCK OR NAVIGABLE PASS MONOLITH SHELL IS 4 WEEKS.

* Nine shells set in LWS 2014 including two shells set outside historical LWS limits (15 Jun – 30 Nov)

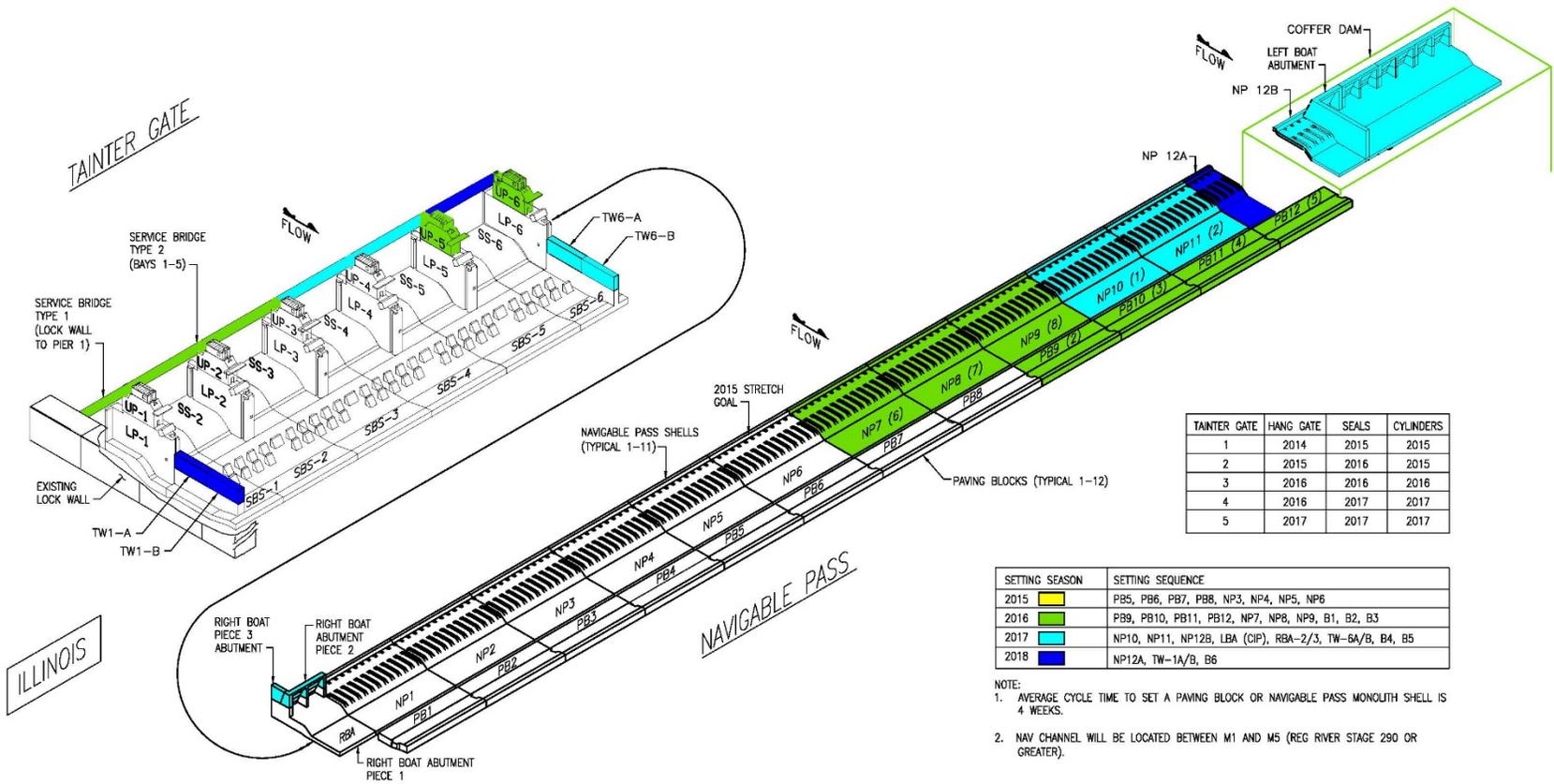
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M/SP	MASTER/SHEET PILE
RBA	RIGHT BOAT ABUTMENT
PB	PAVING BLOCK
NP	NAVIGABLE PASS (MONOLITH)
UP	UPPER PIER

SHELL SETTING ISOMETRIC



TANTIER GATE	HANG GATE	SEALS	CYLINDERS
1	2014	2015	2015
2	2015	2016	2015
3	2016	2016	2016
4	2016	2017	2017
5	2017	2017	2017

SETTING SEASON	SETTING SEQUENCE
2015	PB5, PB6, PB7, PB8, NP3, NP4, NP5, NP6
2016	PB9, PB10, PB11, PB12, NP7, NP8, NP9, B1, B2, B3
2017	NP10, NP11, NP12B, LBA (CIP), RBA-2/3, TW-6A/B, B4, B5
2018	NP12A, TW-1A/B, B6

- NOTE:
- AVERAGE CYCLE TIME TO SET A PAVING BLOCK OR NAVIGABLE PASS MONOLITH SHELL IS 4 WEEKS.
 - NAV CHANNEL WILL BE LOCATED BETWEEN M1 AND M5 (REG RIVER STAGE 290 OR GREATER).

2015 LWS Milestones

- Scheduled Milestones
 - Set NP #3-5 (of 12) - COMPLETE
 - Set PB #5-8 (of 12) - COMPLETE
 - Erect TG #2 (of 5) - COMPLETE
- Preparatory Milestones
 - Install Grout Mat (thru NP #12/LBA) - ON SCHEDULE
 - Drive Found Pile (thru NP #8) - COMPLETE
 - Drive M/S Pile (thru NP #8) - COMPLETE
- Stretch Goal Milestones
 - Set NP #6 (of 12) – COMPLETE (01 FEB 2016)
 - **Drive Left Boat Abutment (LBA) Foundation Piling**

	<u>FINAL (FY15)</u> (\$213M)
PB-5	10 Jun
PB-6	29 Jul
PB-7	14 Aug
PB-8	31 Aug
NP-3	10 Oct
NP-4	03 Nov
NP-5	23 Nov
TG-2	01 Oct

* Milestone complete

Legend

LP – Lower Pier
TG – Tainter Gate
SB – Service Bridge
GM – Grout Mat
FP – Foundation Pile
M/S – Master/Sheet
RBA – Right Boat Abutment
LBA – Left Boat Abutment
PB – Paving Block
NP – Nav Pass Shell (Monolith)



2016 LWS Milestones

- **Scheduled Milestones**
 - Set NP Nos. 7 - 9 (of 12)
 - Set PB Nos. 9 - 12 (of 12)
 - Erect TG Nos. 3 & 4 (of 5)
- **Preparatory Milestones**
 - Complete LBA Thin-Wall Cofferdam
 - Complete all NP Foundation Pile
 - Complete all NP M/S Pile
- **Stretch Goal Milestone**
 - Set NP #10 (of 12)

	<u>BASELINE</u> (\$268M)
PB-9	XX Jun
PB-10	XX Jun
PB-11	XX Jul
PB-12	XX Jul
NP-7	XX Sep
NP-8	XX Oct
NP-9	XX Nov
TG-3	XX Aug
TG-4	XX Nov

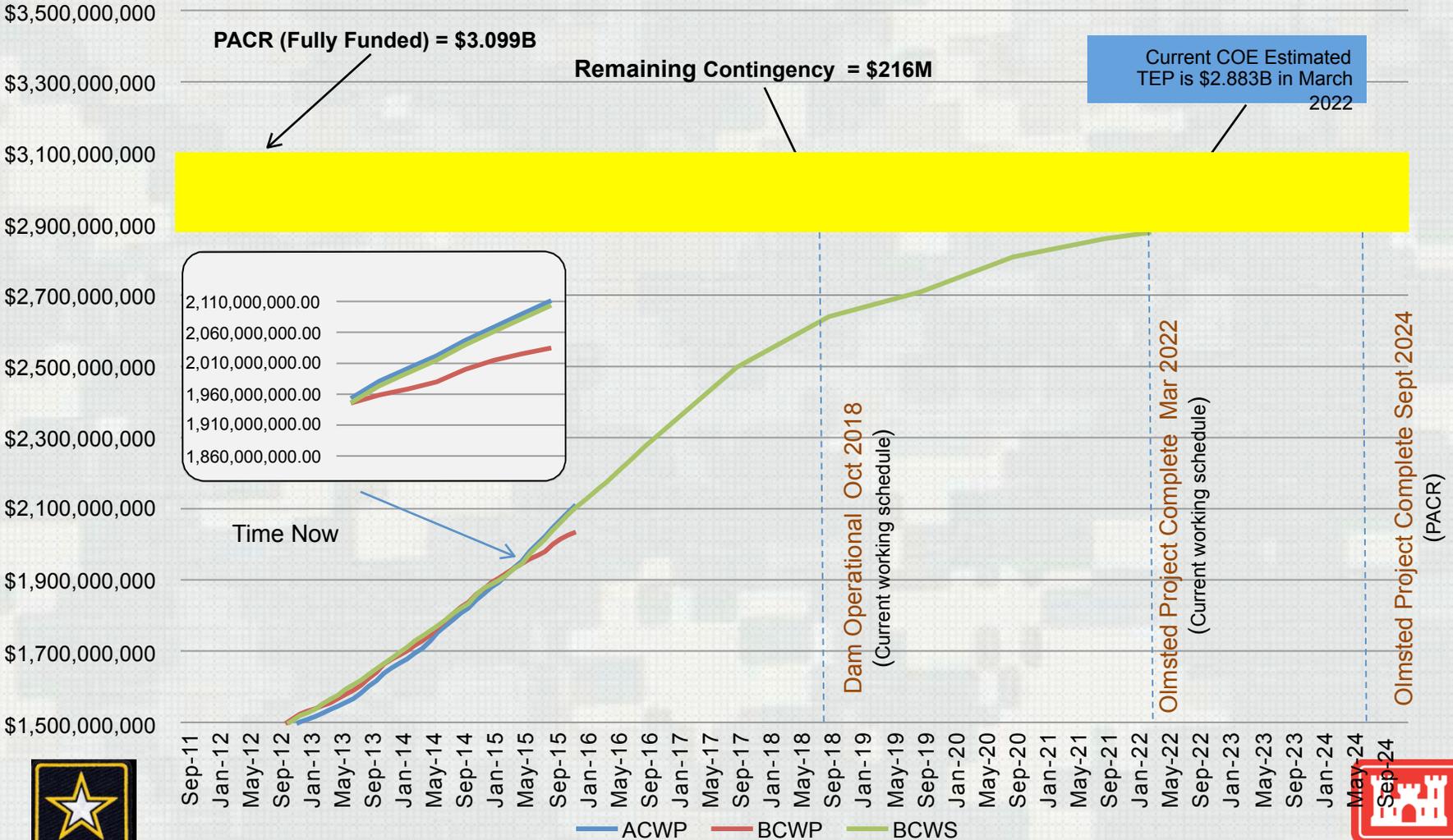
<u>Legend</u>
LP – Lower Pier
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PB – Paving Block
NP – Nav Pass Shell (Monolith)



Olmsted L&D Project Earned Value Analysis

(Based on DOD Gold Card)

Dec 2015



2015 LWS Images





2015 LWS Images



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2015 LWS Images



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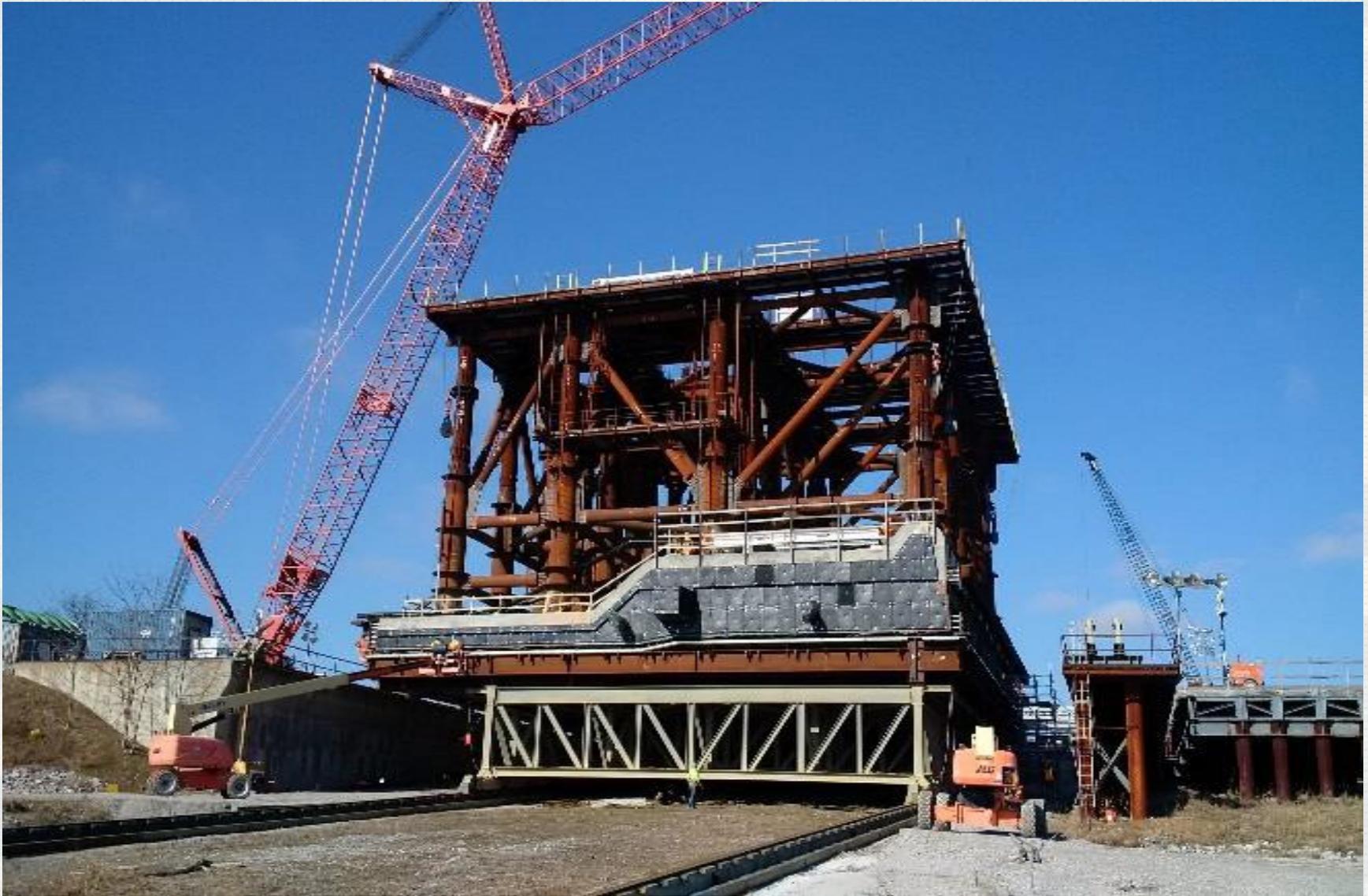
2015 LWS Images



2015 LWS Images

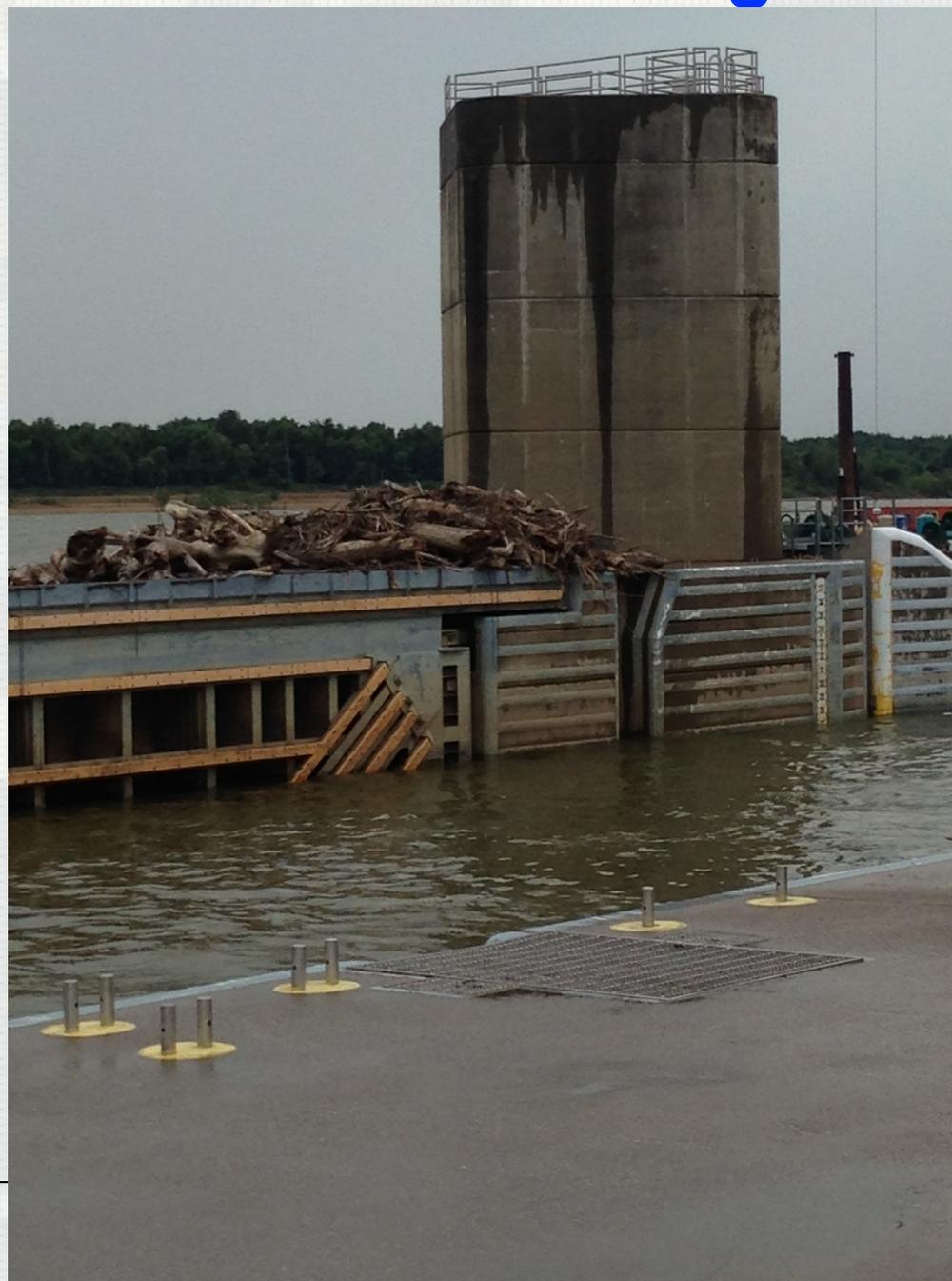
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2015 LWS Images

4



BUILDING STRONG®

Major Lock Rehab



Major Lock Rehab



4



BUILDING STRONG®

Major Lock Rehab



4



2015 LWS Images



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2015 LWS Images

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2015 LWS Images

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2015 LWS Images



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Wicket Lifter Design



Challenges

- Maintaining Locks while Dam is finished
- Change over from L&D 52/53
- Wicket Lifter Design & Fabrication
- Maintenance Box Design and Build
- Final Site Equipment, Fleet & Layout
- River Conditions for Dam Completion



Realities

- 1. Jobs.** Olmsted directly supports approx. 750 construction jobs on site.
- 2. Hub of the Inland Water Transportation System.** Approx. 87M tons of commodities transit Locks and Dam Nos. 52/53 annually. (Busiest node in the system)
- 3. Olmsted must be built.** Locks and Dam Nos. 52/53 **must be replaced** in the near future **to ensure reliable navigation** of the lower Ohio.
- 4. Value to the nation.** The estimated annual net benefit of the operational project is **\$640 million**.
- 5. Olmsted is inland navigation's top priority.** The Inland Waterways Users Board (IWUB) has adopted the Inland Marine Transportation System (IMTS) Capital Investment Strategy report that ranks Olmsted Locks and Dam as the **number one priority** for locks and dams construction projects.
- 6. Project oversight has increased.** Olmsted is a USACE designated mega- project. All additional management controls are in place.
- 7. Execution.** Using the existing cost-reimbursable contract and the in-the-wet construction method is the most efficient way to complete the project on schedule and within budget.





Louisville District Locks and Dams

Waylon Humphrey, PE
Operations Manager
502-315-6695
502-548-5373 (c)

Brad Stout
Assistant Operations Manager
502-315-6701
502-523-4976 (c)

