Olmsted Locks & Dam

Informational Brief

Guest

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Briefer

Mike Braden, Chief Olmsted Division

21 May 2015

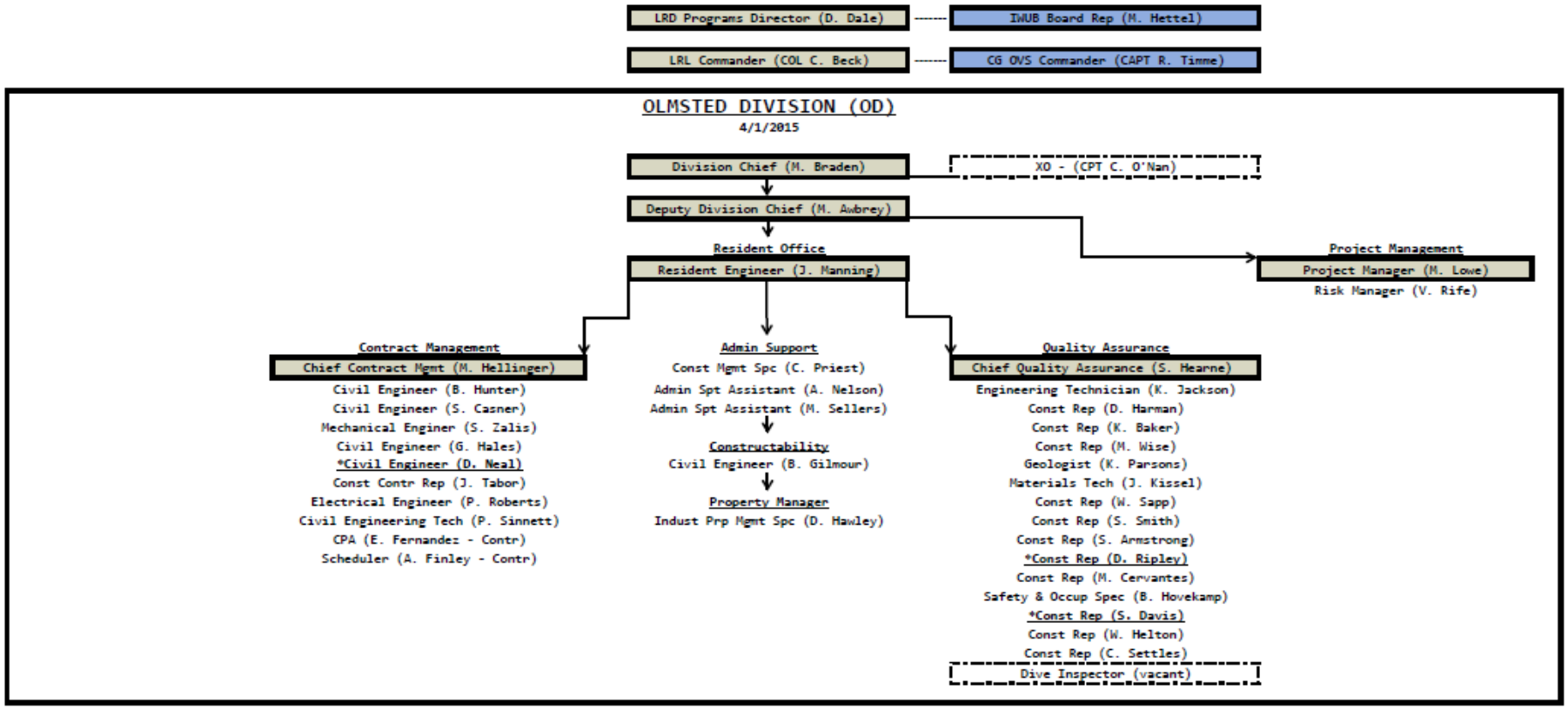
US Army Corps of Engineers

BUILDING STRONG®

Agenda

- Status
  - Organization
  - Orientation/Importance/Relevance
  - Project Overview
  - Dam Re-Baseline Plan
  - Business Lines
  - 2014 LWS Summary To Date
  - 2014 LWS Images
  - Challenges
  - Authorization Milestone
  - Realities
- Discussion

Mega-Project Organization



OC
Counsel (T. Van Ort)

CT
Contracting Officer (D. Bush)
Contract Specialist (B. Durrett)
Contract Specialist (B. Crawford)

ED
Lead Engineer (E. Vincent)
Tech Manager (K. Feger)
Concrete SME (D. Kiefer)
Struct. Engineer (J. Nickel)
Mech. Engineer (R. Nichols)
Elect. Engineer (J. Timbas)
Cost Estimator (T. Canfield)
A-E Contract Manager (D. Yankey)
Lock Controls (J. Graham)

OP
Operations Tech POC (Tracey Keel)
Operations Field POC (Jimmy Nix)

PM
Budget Analyst (B. Smyth)
Project Management Spec (R. Ryan)

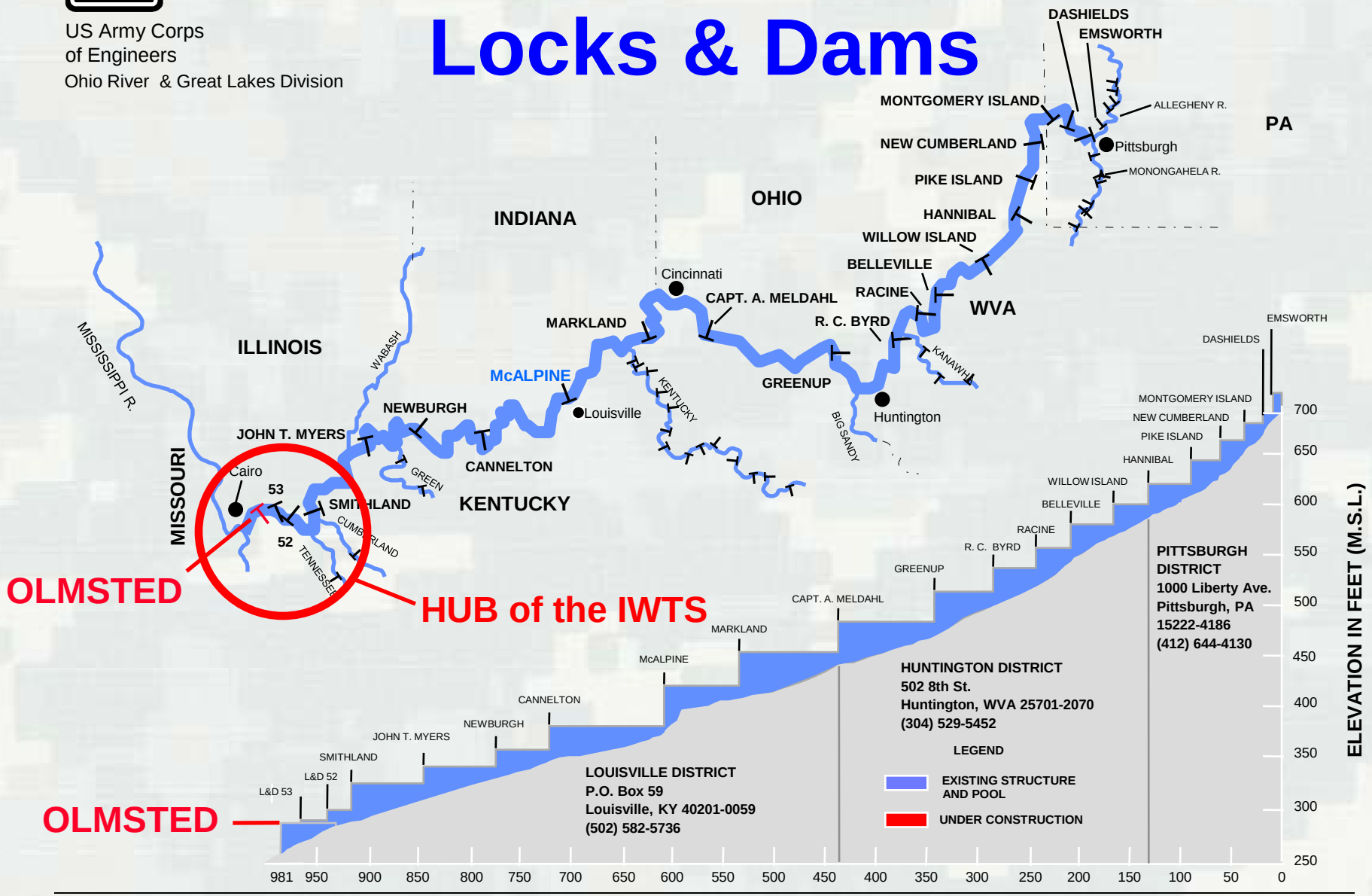
PA
Pub Aff Spc (C. Labashosky)

CG
MSU Paducah (LT. Dan McQuate)

***see ECB 2014-14 for all Mega-Project Tenets**

Ohio River Main Stem Locks & Dams

US Army Corps
of Engineers
Ohio River & Great Lakes Division



BUILDING STRONG®

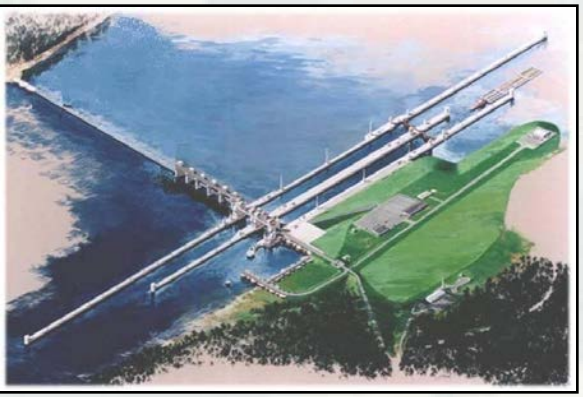
Olmsted Importance

L&D 52/53 = 91M tons/yr

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

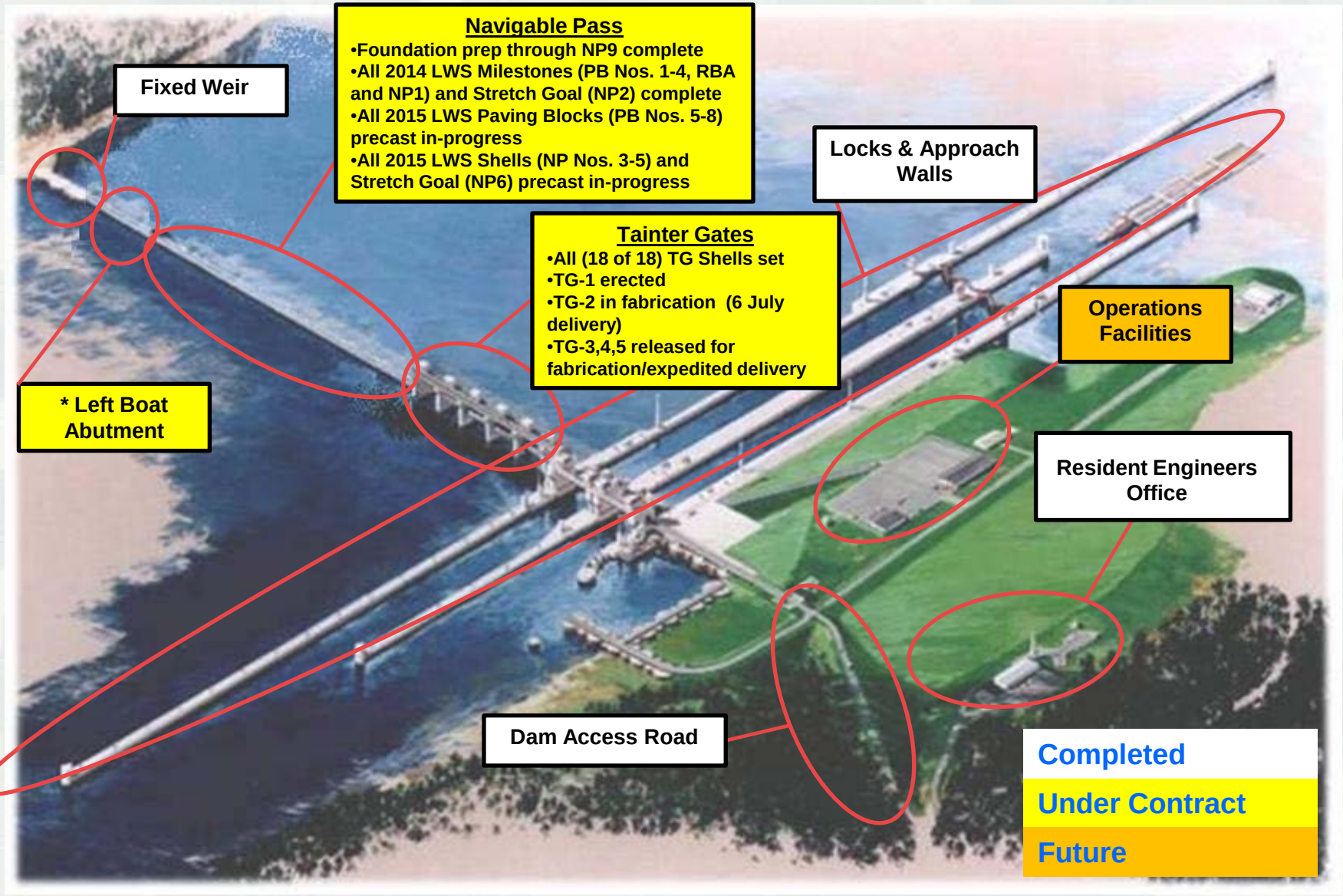
Original (600') Chamber - 1929
Temporary (1,200-ft) Chamber - 1980

Olmsted Relevance



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

Olmsted Project Overview



Olmsted Cofferdam/Locks/Approach Walls

Olmsted Dam – 2014 PTC

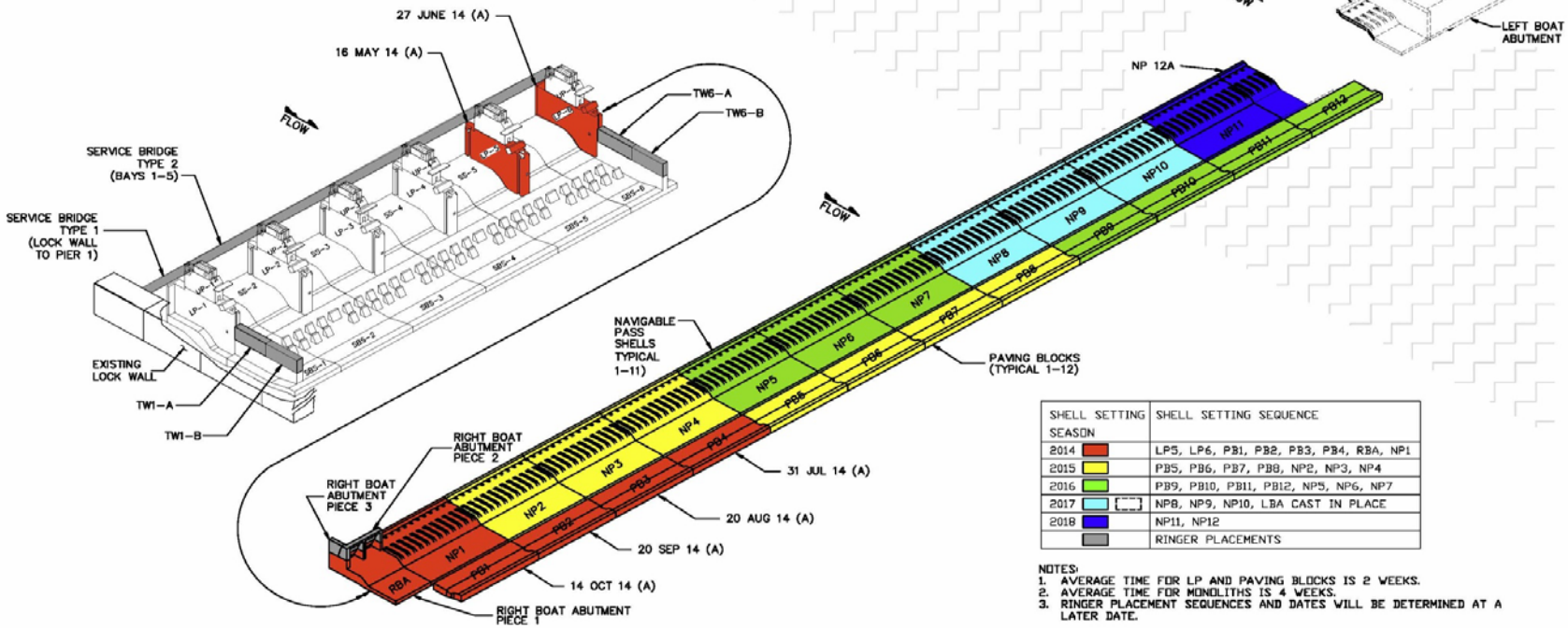
RINGER BARGE PLACEMENTS	
SHELL	WEIGHT (TONS)
RBA PIECE 2	372
RBA PIECE 3	81.5
TW1-A	347
T1-B	302
TW6-A	308
TW6-B	316
SERVICE BRIDGE TYPE 1	118
SERVICE BRIDGE TYPE 2	283

11 TOTAL RINGER PLACEMENTS

CAT BARGE PLACEMENTS	
SHELL	WEIGHT (TONS)
RBA PIECE 1	2511.5
NP 1-11	4955
NP 12A	(4785.7) 1/2
PAVING BLOCKS 1-12	2562

25 TOTAL CAT BARGE PLACEMENTS

ACRONYM LEGEND
LP - LOWER PIER
TG - TAINTER 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)



SHELL SETTING SEASON	SHELL SETTING SEQUENCE
2014	LP5, LP6, PB1, PB2, PB3, PB4, RBA, NP1
2015	PB5, PB6, PB7, PB8, NP2, NP3, NP4
2016	PB9, PB10, PB11, PB12, NP5, NP6, NP7
2017	NP8, NP9, NP10, LBA CAST IN PLACE
2018	NP11, NP12
	RINGER PLACEMENTS

NOTES:
1. AVERAGE TIME FOR LP AND PAVING BLOCKS IS 2 WEEKS.
2. AVERAGE TIME FOR MONOLITHS IS 4 WEEKS.
3. RINGER PLACEMENT SEQUENCES AND DATES WILL BE DETERMINED AT A LATER DATE.

2014 Plan to Complete (PTC) - Final two Shells scheduled set in LWS 2018

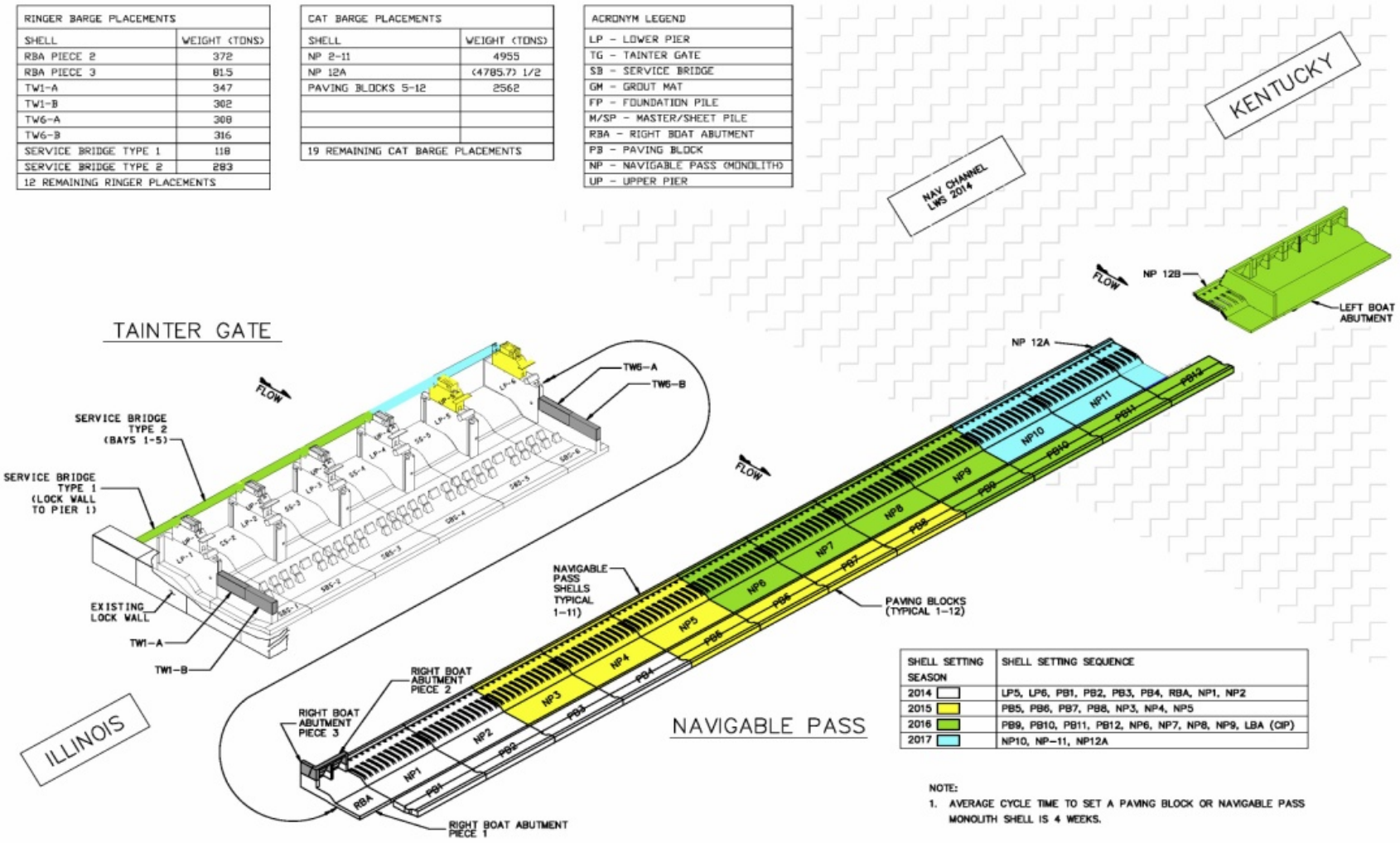
* Nine shells set in LWS 2014 including two shells set outside historical LWS limits (15 Jun – 30 Nov)

Olmsted Dam – 2015 PTC

RINGER BARGE PLACEMENTS	
SHELL	WEIGHT (TONS)
RBA PIECE 2	372
RBA PIECE 3	815
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 2-11	4955
NP 12A	(4785.7) 1/2
PAVING BLOCKS 5-12	2562
19 REMAINING CAT BARGE PLACEMENTS	

ACRONYM LEGEND
LP – LOWER PIER
TG – TAINTER 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



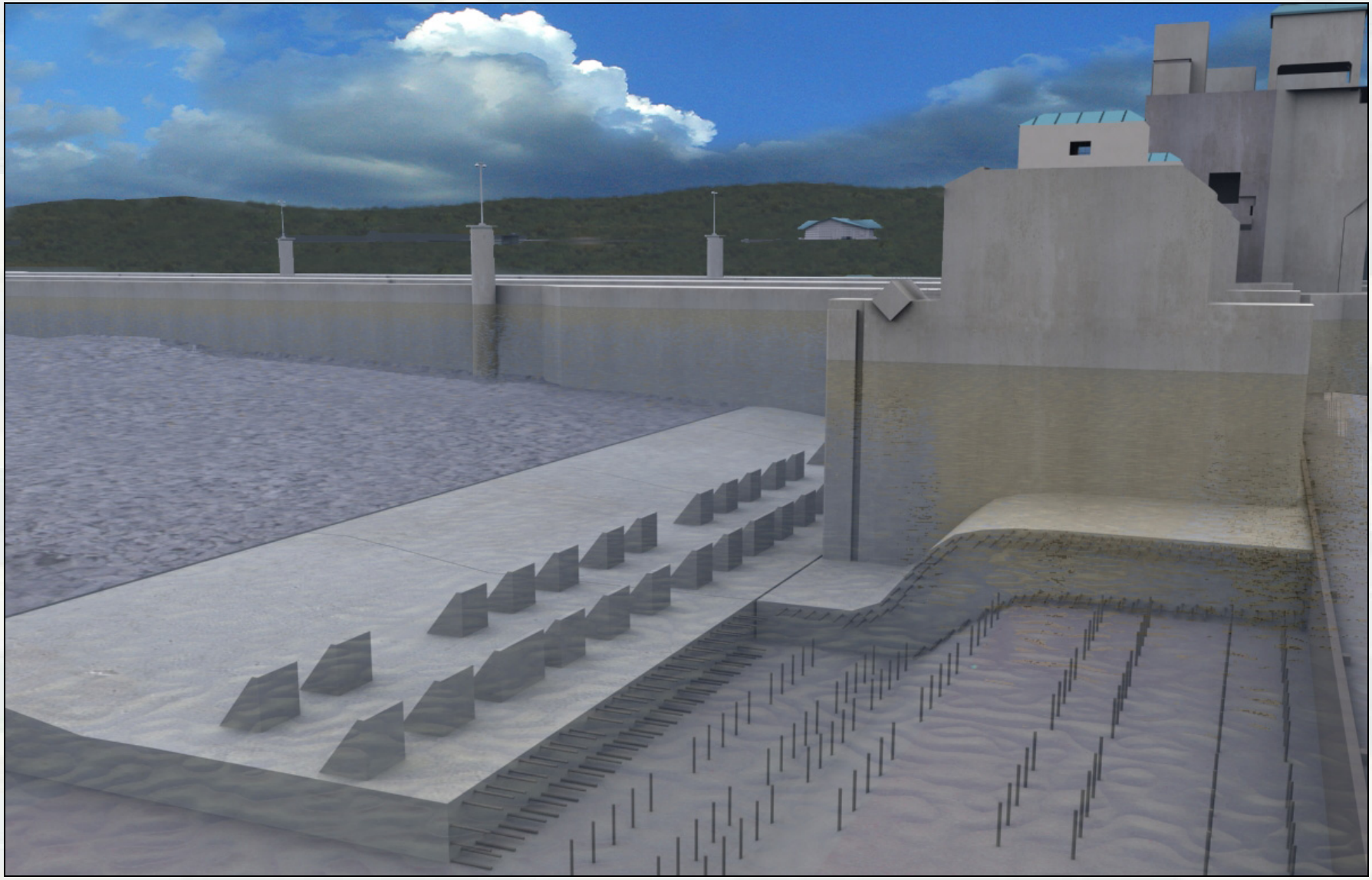
SHELL SETTING SEASON	SHELL SETTING SEQUENCE
2014	LP5, LP6, PB1, PB2, PB3, PB4, RBA, NP1, NP2
2015	PB5, PB6, PB7, PB8, NP3, NP4, NP5
2016	PB9, PB10, PB11, PB12, NP6, NP7, NP8, NP9, LBA (CIP)
2017	NP10, NP-11, NP12A

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

2015 Plan to Complete (PTC) - Final **three** Shells scheduled set in **LWS 2017**

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

Tainter Gate Shell Cut-Away



Olmsted Dam - Aerial

August 2014

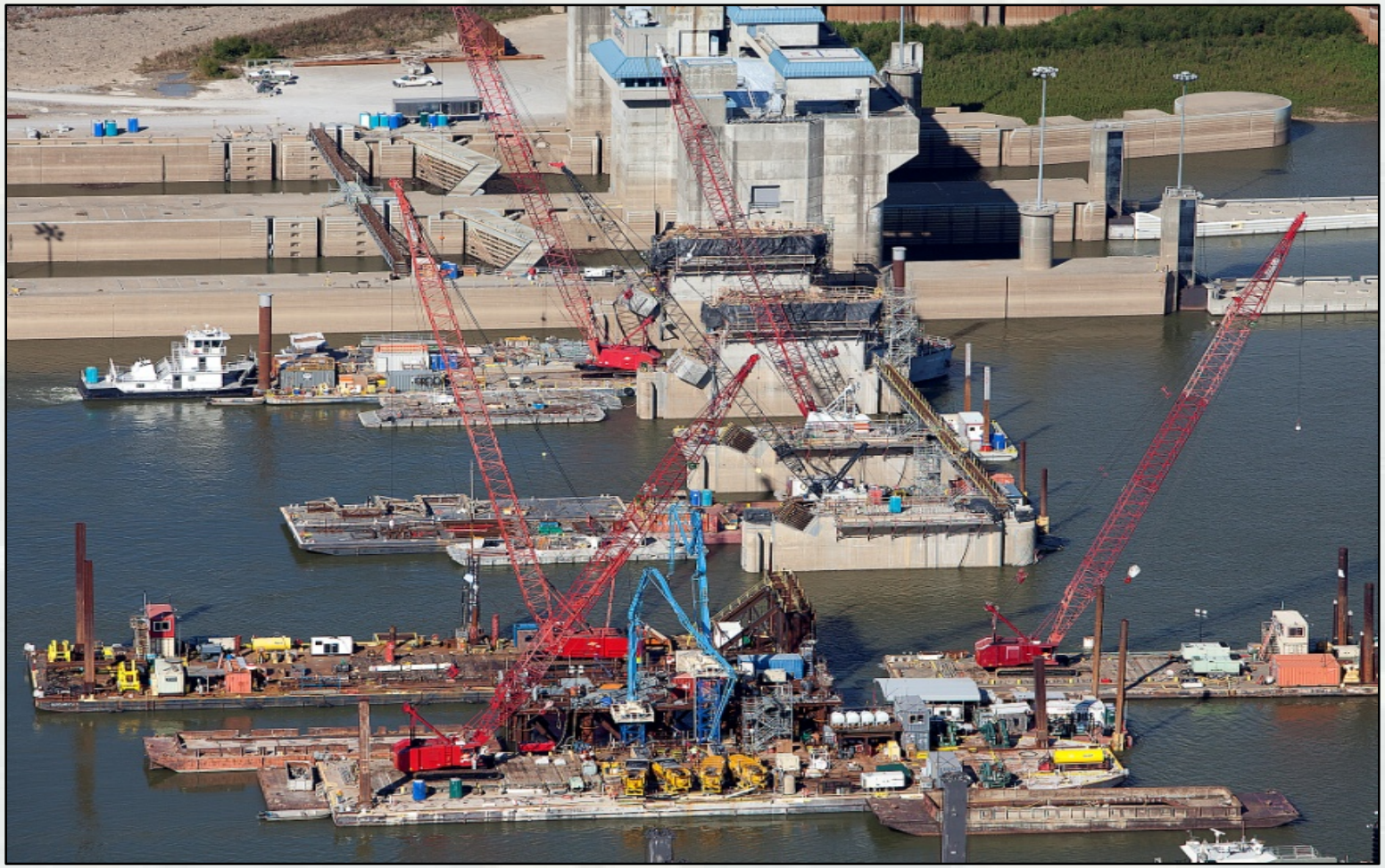
Olmsted Dam – Precast

* 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

2015 LWS Milestones

- Scheduled Milestones
  - Set PB #5-8 (of 12)
  - Set NP #3-5 (of 12)
  - Completion of Upper Piers 5 & 6
  - Erect TG #2
  - Complete Install TG #1 (Seals, Hydraulic Cylinders, HPU's)
  - Set Service Bridge #1 & #2
- Preparatory Milestones
  - Install Grout Mat NP10 - LBA
  - Drive Foundation Pile thru NP-7, NP-12B & LBA
  - Drive M/S Pile U/S thru NP-6, D/S @ NP- 8 , NP-12A
- Stretch Goal Milestone
  - **Set NP #6 (of 12)**

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)

2014 LWS Images

1. Commemorating 5000 Dives to date **2.** TG-1 transiting L&D 52 **3.** Testing NP-1 Wicket Gates
4. Setting bulkheads Bay No. 1 **5.** RBA moving down skid way **6.** Setting RBA/Erecting TG-1

Challenges

- Efficient Funding Stream
  - Minimum of $150M Per Year / Less Would Directly Impact Schedule
  - Increase capability funding for FY15 ($205M)
  - Beginning FY15 (85% CG / 15% IWTF)
- Left Boat Abutment (LBA) (Cast-in-Place)
  - Cofferdam and Revised LBA / Monolith 12 Design
  - Construction Schedule
- Tainter Gates (TG)
  - TG-1 erection complete
  - Remaining 4 gates released for fabrication
  - Potential for setting multiple gates in a Low Water Season
- Passing Traffic as Work Continues in the Navigable Pass

Congressional Interaction & Authorization Milestones

- Post Authorization Change Request (13 Apr 2012)
  - **$2.918B, Dam Operational 2020, Project Complete 2024**
- Construction Method Validation (31 May 2012)
  - Validated that In-The-Wet (ITW) is the most efficient method to complete the project
- Qualitative Risk Assessment (28 Aug 2012)
  - Validated that **Locks & Dam Nos. 52/53 are failing** and identified failure mode mitigation measures
- Continuing Resolution (17 Oct 2013) increased Olmsted authorization avoiding significant slow/shutdown impacts
  - Cost ($80M - $208M)
  - Schedule (1 - 3 Years)
- 2014 Consolidated Appropriations Act (17 Jan 2014)
  - Division D—Energy and Water Development and Related Agencies
  - **25% IWTF "during [this] fiscal year period"**
- 2014 WRRDA Legislation (10 Jun 2014)
  - **15% IWTF cost share for FY15 and beyond**
  - **Sense of Congress to expend not less than $150M annually until complete**

Realities

1. Jobs. Olmsted directly supports approx. 550 engineers, foremen and craft workers.

2. Hub of the Inland Water Transportation System. Approx. 91M 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.

Discussion