

# Olmsted Locks & Dam

## Inland Waterways Users Board

**MR. DAVID DALE, SES, PE, PMP**  
**DIRECTOR, Programs**  
**Great Lakes and Ohio River Division**  
**01 April 2016**



®

**US Army Corps of Engineers**  
**BUILDING STRONG®**



# Agenda

- Status
  - ▶ BLUF/Project Overview
  - ▶ 2015 LWS Wrap-Up
  - ▶ 2016 Plan-to-Complete
  - ▶ 2016 Milestone Identification
  - ▶ Project Scorecard
  - ▶ Summary
  
- Discussion



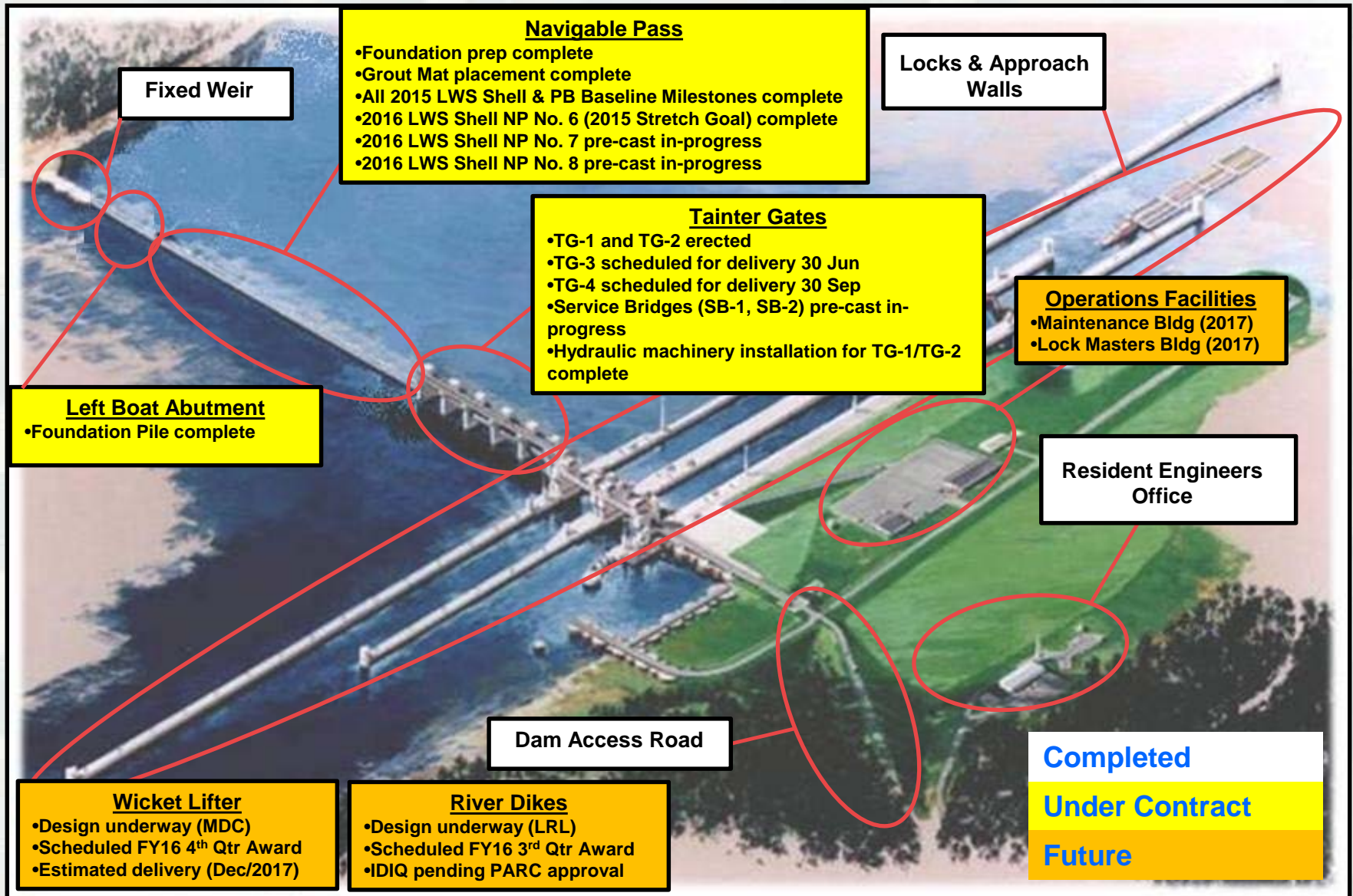
# BLUF

- Bottom Line Up Front

- ▶ **All** 2015 baseline **milestones** and identified **stretch goal achieved**.
- ▶ **Capability funding** allows the team to actively **mitigate risk exposure**.
- ▶ 2016 Plan-to-Complete and performance trending align with an “early” operational delivery of Oct/2018 (\$65M **under budget**, two years **ahead of schedule**).



# Olmsted Project Overview - Status





# 2015 LWS Images



1. First Commercial Lockage 2. River Chamber Unwatering 3. NP-3 Wicket Installation  
4. TG-1 Cylinder Installation 5. TG Bay 1 Unwatering 6. NP-6 Transiting Skid Way

# 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

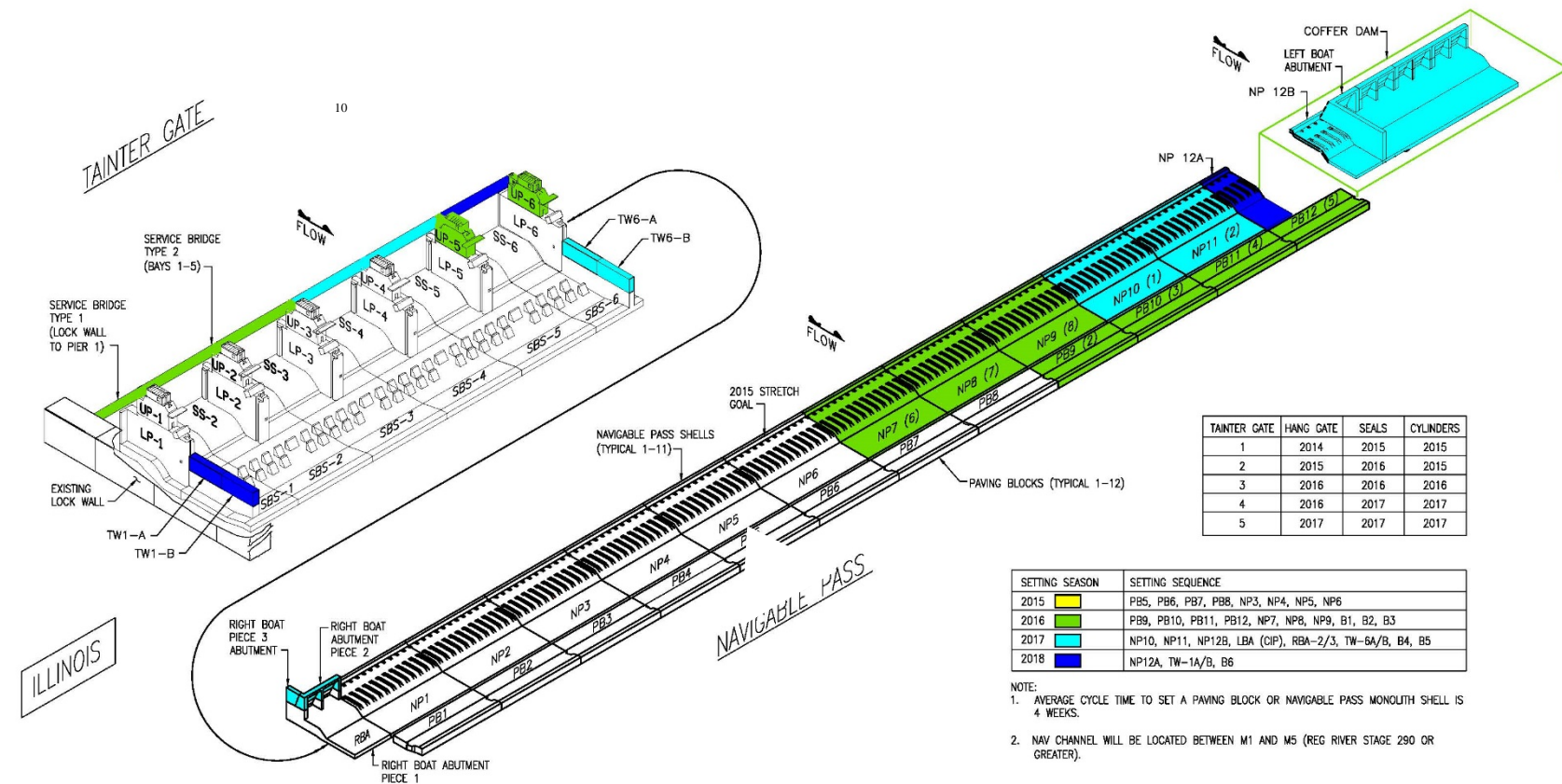
SHELL	WEIGHT (TONS)
NP 5-11	4955
NP 12A	(4785.7) 1/2
PAVING BLOCKS 9-12	2562
12 REMAINING CAT BARGE PLACEMENTS	

# ACRONYM LEGEND

LP - LOWER PIER
TG - TAITNER 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 ISOMETRIC

KENTUCKY



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

# 2016 LWS Milestones

- Scheduled Milestones
  - Set NP #7-9 (of 12)
  - Set PB #9-12 (of 12)
  - Erect TG #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)

## BASELINE

(FY16-~~\$268M~~)

(FY17-~~\$225M~~)

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

## 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)





# Olmsted Project

## Time and Cost Scorecard – Dec 2015

### Expenditures

Planned (BCWS)	\$2.103B
Earned (BCWP)	\$2.034B
Actual (ACWP)	\$2.111B

**BCWP:** Reports the value (based on % complete) of the work performed to date.

#### Target:

Actual as compared to Planned: (<1% = Green) (>1% and <3% = Yellow) and (>3% = Red)

### Schedule

(PACR)/(Current)

Project Complete	Sep 2024/Mar 2022
Dam Operational	Sep 2020/Oct 2018

**Measures:** Planned project completion and Dam contract operational dates

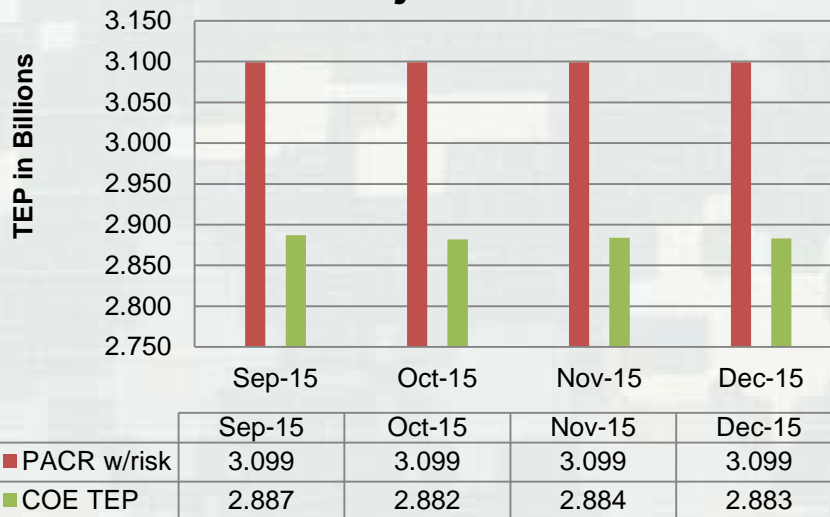
#### Target:

Green: Current = PACR-12 months

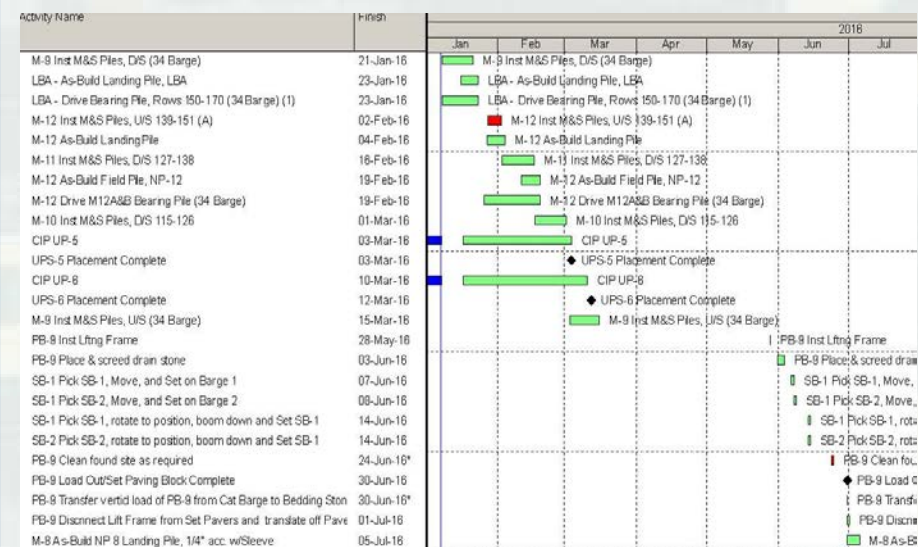
Yellow: Current = PACR-11 months to PACR-7 months

Red: Current = PACR-6 months to after PACR date

### Olmsted Project TEP Trend



### Major Activity Schedule

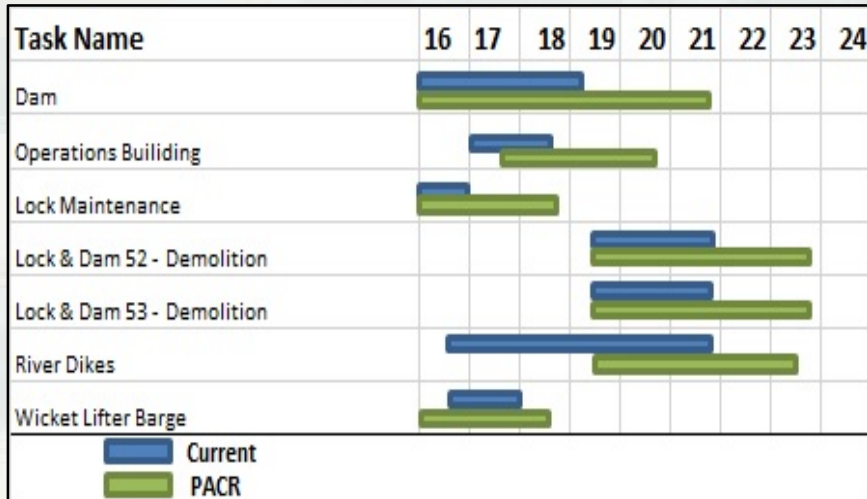




# Olmsted Project

## Construction Management Score Card – Dec 2015

### Acquisition



### Quality of Design

- Wicket Maintenance Box
  - Addressing Design Issues from Ops Lessons Learned
  - LRL In-House Design Effort
  - Engineering & Ops Reviewing and Exploring COA's
  - Target Design Complete Milestone - 1 May 2016
- River Dikes
  - LRL In-House Design
  - Incorporating ERDC Modeling
  - Scheduled Design Complete Milestone - 31 Mar 2016
- Wicket Lifter
  - Marine Design Center
  - Turnkey Delivery (approx. 2 Years)
  - Required 2017

### Quality of Construction



Adjusting TG-1 to Sill Shell interface. Tolerance 1/32". SS Nos.1 & 2 set in 2010.

### Safety

#### Contractor DART Tolerance:

Green: 1.04 or less    Amber: 1.05 – 1.39    Red: 1.40 +

Contractor	Hours/Rate	FY 13	FY 14	FY 15	FY-16
AECOM/Alberici J/V	Hours:	1,122,387	1,374,143	1,543,532	469,978
	# DART:	3	5	5	0
	Rate:	0.53	0.73	0.65	0

#### High Risk Activities – Trends

- Dive Operations. 1,731 dives, 2 Mishaps, no injuries.
- Crane Operations. FY-15 47,642 crane hours, 27 Mishaps.
- FY-16 11,389 hours, 3 Mishaps.

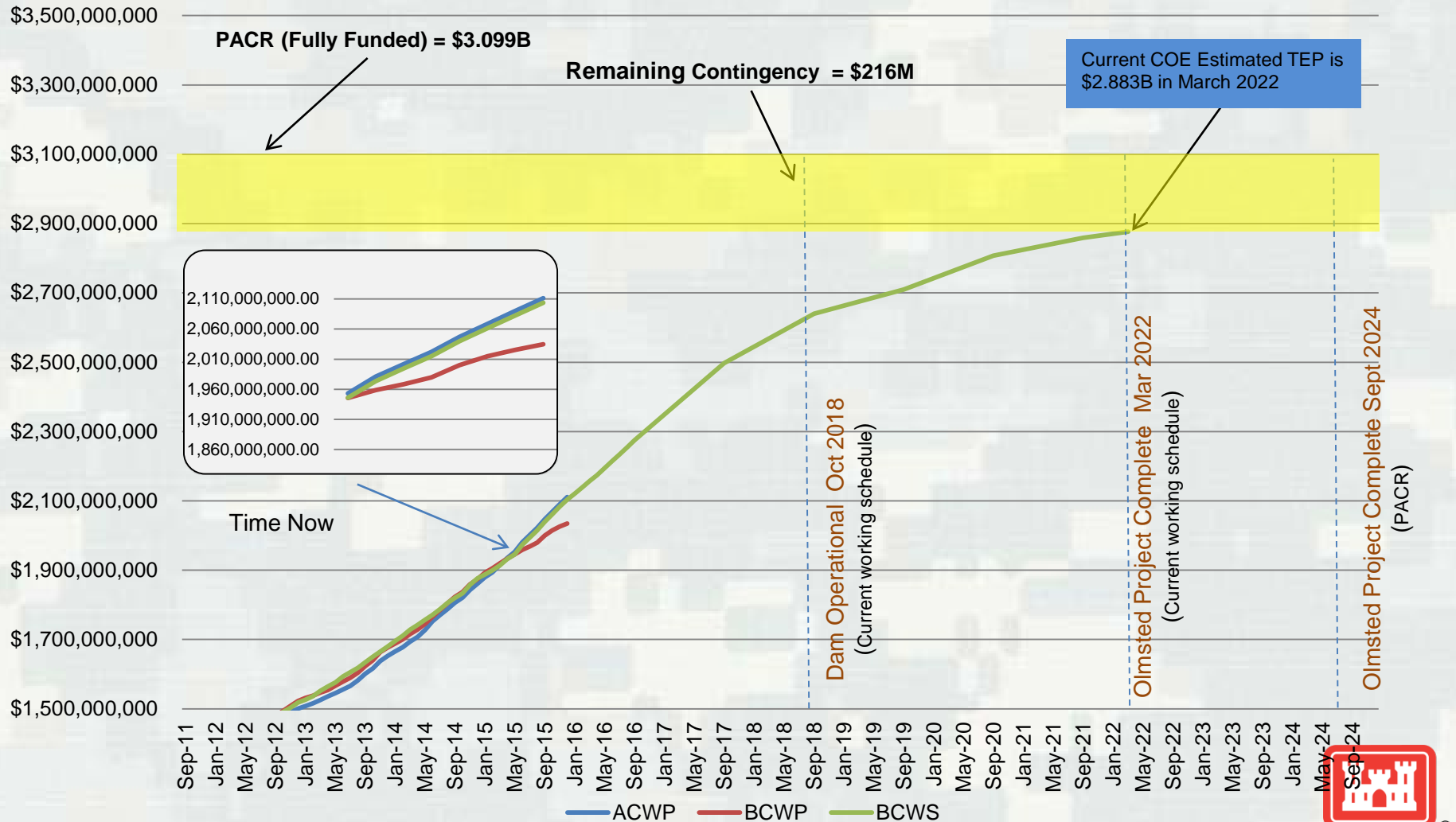
#### Focus areas for next quarter

- Crane hazards. Third Party Load Handling Equipment SME site audit.
- Diving program. Third Party Diving SME site audit.



# Olmsted L&D Project Earned Value Analysis (Based on DOD Gold Card)

Dec 2015



# In Summary

- ▶ Project cost (risk-informed) at completion is \$65M under the fully funded \$3.1B PACR Baseline
- ▶ Project completion schedule is 2 years ahead of the PACR baseline schedule, 2022 in lieu of 2024
- ▶ Capability funding **(FY16 - \$268M/FY17 - \$225M)** aligns resources for most expeditious and efficient completion.





# Discussion



**BUILDING STRONG®**