

# Olmsted Locks & Dam

## Project Update Inland Waterways Users Board (Meeting No. 90)

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**28 February 2019**



*"The views, opinions and findings contained in this report are those of the authors(s) and should not be construed as an official Department of the Army position, policy or decision, unless so designated by other official documentation."*

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## Olmsted Bottom Line Up Front

### ✓ Current Schedule: **Ahead of Schedule**

#### Operational Milestone

1 Oct 2022 (80% cert. (PACR))

1 Oct 2018 Scheduled

**6 Sep 2018 Actual**

#### Completion Milestone

2026 (80% cert. (PACR))

2021 Scheduled

### ✓ Current Cost: **Under Budget**

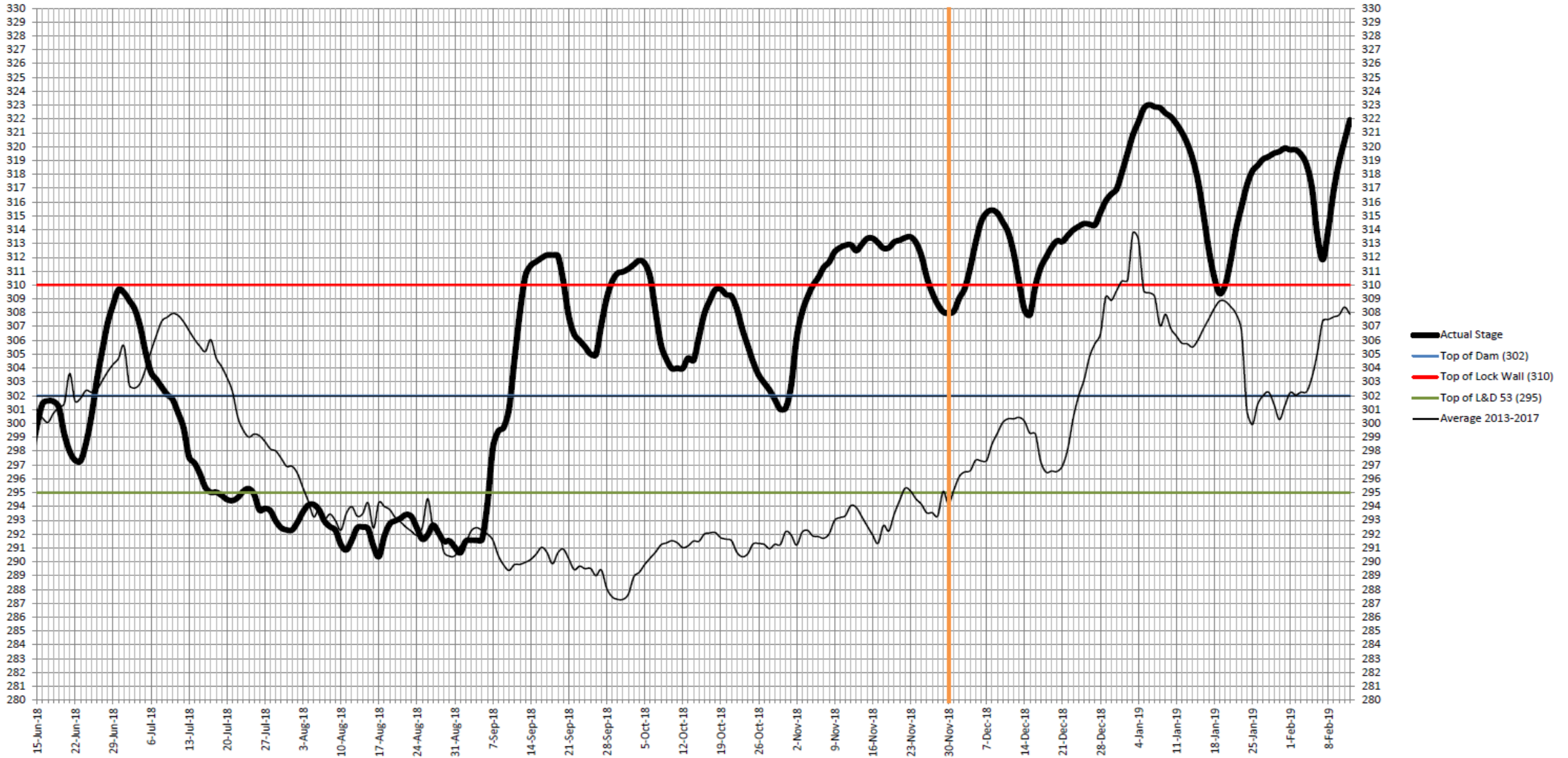
TEP (Total Estimated Price) = \$2.782B vs. \$3.1B (80% certainty)

Savings = \$317M (FY19 Allocation = \$50M)

### ✓ Keys:

1. Efficient funding (annual capability) has allowed the PDT to effectively plan and execute our annual work plan.
2. Advantageous river conditions have allowed the work to expand beyond the contractual low water season (15 Jun – 30 Nov).

# 2018-2019 Stage versus 2013-2017 Average Stage



## 2018 LWS completion items impacted By high water

- Concrete Spall Repair
  - TG Bays and Nav Pass Shells
- Isolation Joint Bracing and Grouting
  - Three locations
- Complete Grouting
  - Several locations
- Left Boat Abutment/Fixed Weir
- U/S Mooring Cells
- Wicket 32 Repair
- L&D 53 Phase I Demo

All these items require Water Elevation control and other Operational requirements to complete







DOWN STREAM (D/S)

Monolith 10 Wicket Gate 32  
Replace Female Horse Hinge Casting

Navigable Pass Shells

M-10

M-6

Monolith 1 (M-1)  
Complete Soil Mixing U/S of M-1

M-1

Monolith 6  
1. Complete Soil Mixing U/S of M-6  
2. Repair Three Spalls

UPSTREAM (U/S)



Tainter Gate Training Walls- Left Wall  
1. Grout between Lower Pier and Training Wall  
2. Place stone between Boat Abutment/ Lower Pier

Tainter Gate Training Walls- Right Wall  
1. Place stone between Lock Wall and Training Wall/ Lower Pier

Isolation Joint- Lock Wall  
1. Complete grouting at Seismic Jt.  
2. Install the D/S Brace

DOWNSTREAM (D/S)

UPSTREAM (U/S)

P-6

P-5

P-4

P-3

P-2

P-1

SBS-5

SBS-6

TG-2

TG-1

TG-3

TG-4

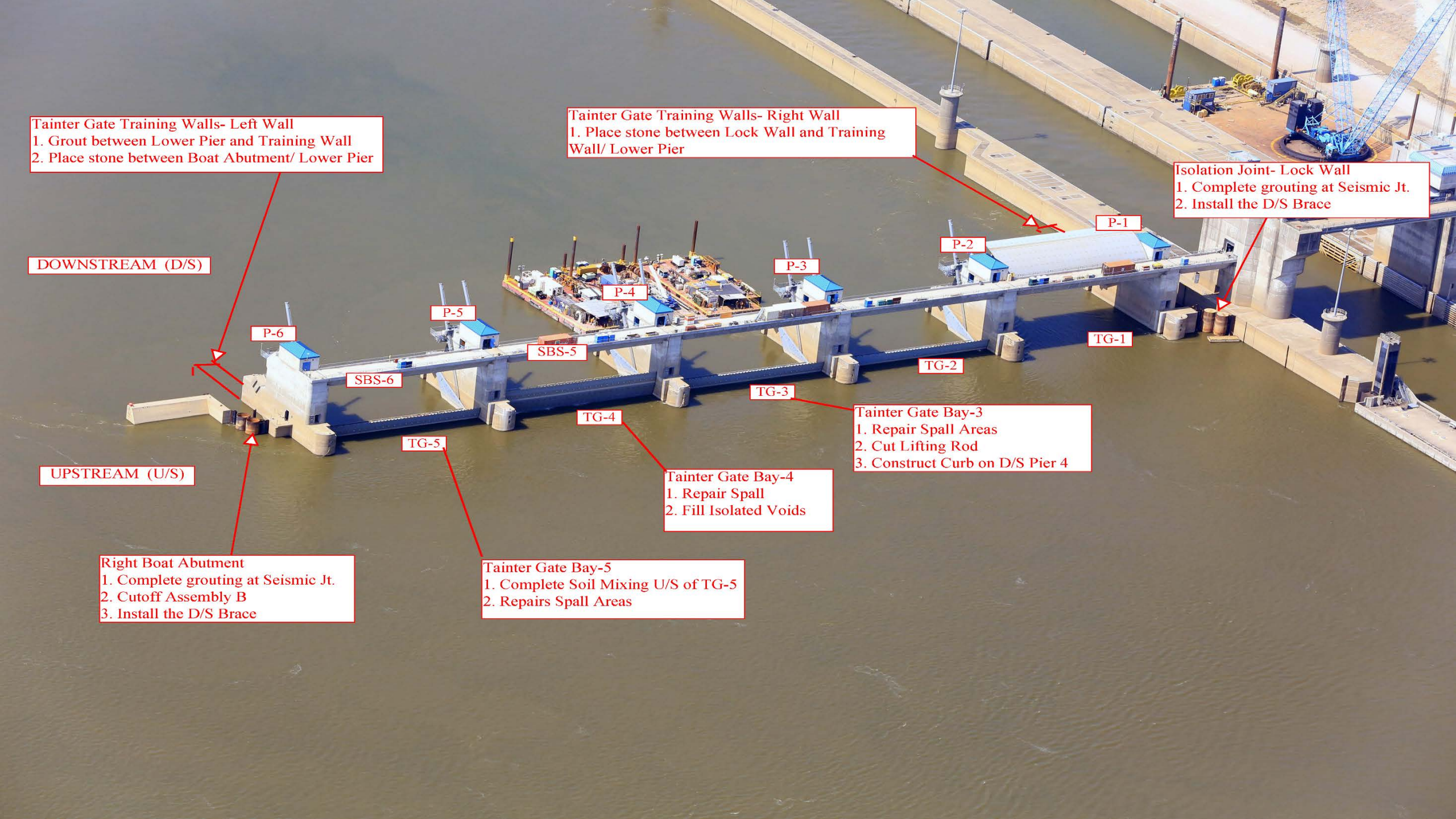
TG-5

Tainter Gate Bay-3  
1. Repair Spall Areas  
2. Cut Lifting Rod  
3. Construct Curb on D/S Pier 4

Tainter Gate Bay-4  
1. Repair Spall  
2. Fill Isolated Voids

Right Boat Abutment  
1. Complete grouting at Seismic Jt.  
2. Cutoff Assembly B  
3. Install the D/S Brace

Tainter Gate Bay-5  
1. Complete Soil Mixing U/S of TG-5  
2. Repairs Spall Areas





**Left Boat Abutment**  
1. Complete Concrete Placements on Training Wall

**Kentucky Fixed Weir**  
1. Complete Concrete Work at Cell and Remove Temporary Cofferdam  
2. Complete Rock Work at Access Ramp

**UM Cell 2**  
1. Install Line Hooks  
2. Place Concrete from Elevation 295 to 320

**UM Cell 1**  
1. Install Line Hooks  
2. Place Concrete from Elevation 295 to 320





# Olmsted Locks and Dam, Ohio River, IL & KY

	ARRA	CG	IWTF	Total
<b>Total Project Cost:</b>				*\$2,867,296,000
Allocations through FY2014:	\$29,515,929	\$943,838,592	\$861,338,594	\$1,834,693,115
FY15 Allocation:	\$0	\$180,803,500	\$31,906,500	\$212,710,000
FY16 Allocation:	NA	\$227,800,000	\$40,200,000	\$268,000,000
FY17 Allocation:	NA	\$212,470,000	\$37,500,000	\$249,970,000
FY18 Allocation:	NA	\$148,750,000	\$26,250,000	\$175,000,000
FY19 Budget:	NA	\$29,750,000	\$5,250,000	\$ 35,000,000
FY19 Allocation:		\$12,750,000	\$2,250,000	\$ 15,000,000
<b>Total Allocations to Date:</b>	\$29,515,929	\$1,756,162,092	\$1,004,695,094	\$2,790,373,115
<b>Remaining TPC Balance:</b>		\$65,384,452	\$11,528,433	\$76,922,885
<b>Remaining Balance Change From Last Meeting</b>				-\$15,000,000

Note: \* Cost and Schedule data reflective of the latest Certified Cost Estimate (01 OCT 2017 price levels) completed May 2018.  
Next Certified Cost Estimate (01 OCT 2019 price levels) expected APR 2020.

**Remaining TPC Balance is difference between Total Project Cost and Total Allocations to date.**

**Changes**  
**Funded \$15,000,000 in FY19 Workplan**

**Current Status of the Project**

- All Damming surfaces in place
- U/S MC's under construction
- L&D 52 marine demo awarded 26 Sep 2018
- **L&D 53 Ph I demo progressing**

**Funding Overview**

- Original Authorized Cost: \$ 775.0M
- 902 Limit: \$3,559.0M
- ARRA Funding (FY09-11): \$ 29.5M
- Engineering & Design Cost: \$ 168.5M
- Supervision & Admin Cost: \$ 131.0M
- Mitigation: \$ 16.0M

**Next Steps**

- Complete isolation pile bracing **and all remaining grouting**
- Demo 53 Marine Ph II
- L&D 52 and 53 Landside demolition and property disposal
- **Wicket #32 repair**
- **Spall repair**





## Olmsted Locks and Dam, Ohio River, IL & KY

Schedule of Remaining Work	Design Initiated	Contract Award	Construction Complete	Project Benefits	Capitalized Cost Closeout
Dam	26-Aug-96	28-Jan-04	30-Sep-19	6-Sep-18	31-Mar-20
Wicket Lifter	1-Jan-15	2-Sep-16	21-Dec-17	19-Feb-18	30-Dec-20
Building & Grounds	1-Dec-15	2-Feb-17	28-Sep-18	1-Oct-18	30-Jun-19
Demolition L&D 52	1-Feb-17	26-Sep-18	31-Dec-20	N/A	31-May-21
Demolition L&D 53 (Nav Lane)	15-Oct-16	1-Nov-17	31-Dec-19	N/A	31-Mar-20
River Dikes	12-Feb-15	12-Aug-16	30-Jun-19	30-Jun-19	30-Jun-19

**NOTE:** Green highlighted dates are actual dates.  
 Red highlighted dates are changes.  
 Wicket Lifter Keen placed in service 27 Apr 2018.



# Olmsted Project Time and Cost Scorecard



## Expenditures (thru Dec)

Planned (BCWS)	\$2.446B
Earned (BCWP)	\$2.852B
Actual (ACWP)	\$2.595B

**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 (thru Dec)

	(PACR)/(Current)
Project Complete	April 2026/Dec 2021
Dam Operational	Oct 2022/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



## Safety

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

Contractor	Hours/Rate	FY 17	FY 18	FY 19
AECOM/Alberici J/V	Hours:	1,216,798	862,592	214,730
	# DART:	5	1	0
	Rate:	0.82	0.23	0.00

High Risk Activities quarter

- Dive Operations
- Crane Operations

Focus areas for next

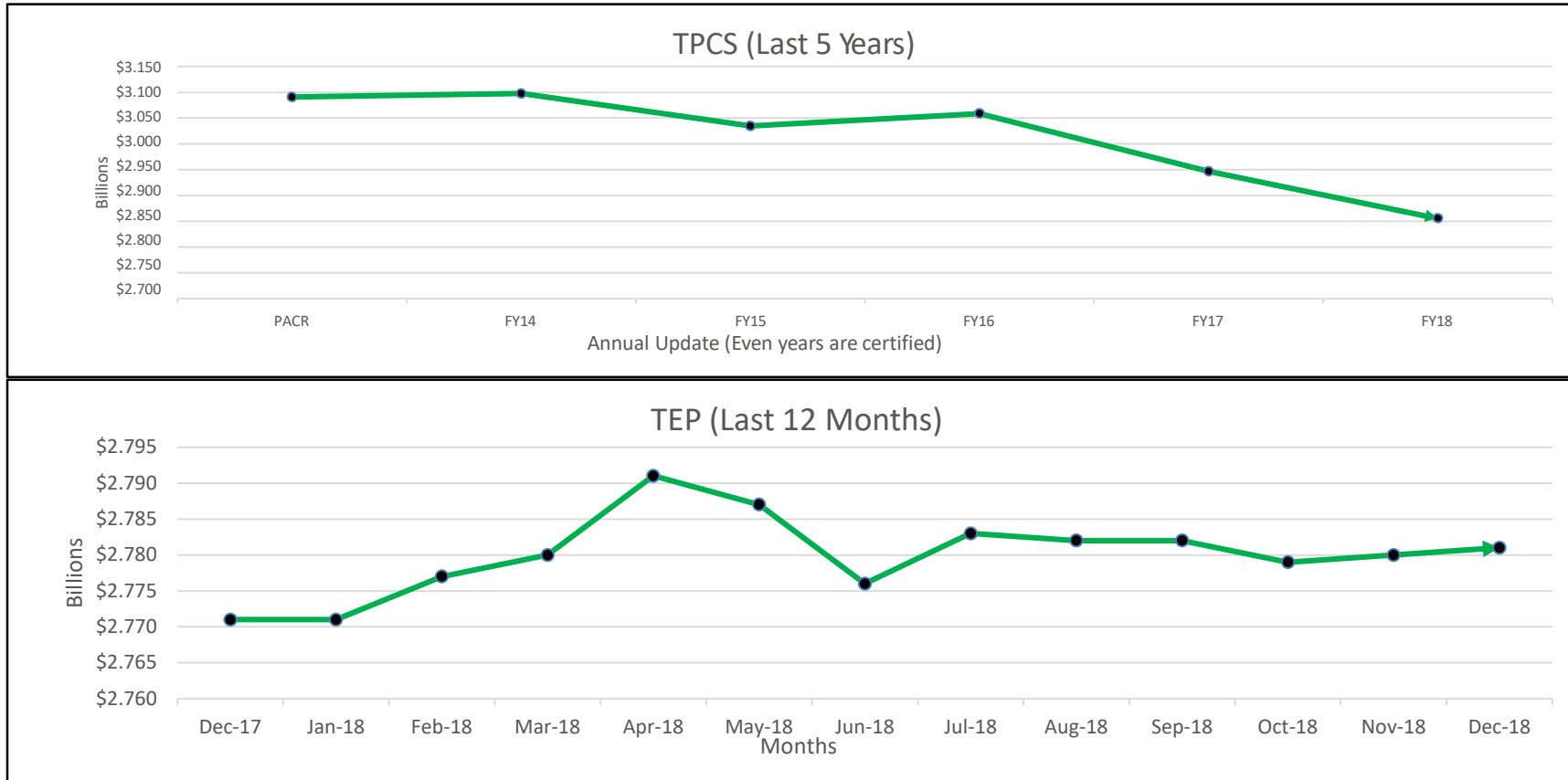
- L&D 52 and 53 Demo
- Equipment disposition
- Site restoration

## Major Activity Schedule

Activity	Baseline	Current
Spall Repair	TBD	
Isolation Joint Bracing	TBD	
Grouting	TBD	
LBA/Fixed Weir	TBD	
Wicket #32 Repair	TBD	
L&D 53 Phase I Demo	TBD	



# 12 Month & 5 Year Cost Trends



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# Olmsted Finishing Strong

- ✓ Overcome LWS 18 Impacts
  - Provide Workable River Conditions
  - Coordination with Operations and Industry
  
- ✓ Remaining work packages on the shelf
  - Landside demolition of L&D 52 and 53
  - 53 Marine Phase II
  - County Road Resurface
  - Site Restoration
  
- ✓ Equipment Disposition
  - Continue disposition as equipment comes available
  - Reduce cost and offset future programming by returning approximately \$4.4M to date.





November 2017



November 2018



# Discussion



Olmsted Locks and Dam September 2018



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