Olmsted Locks & Dam
Inland Waterways Users Board

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

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

- Discussion

LWS = Low Water Season
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

Navigable Pass
- Foundation prep complete
- Grout Mat placement complete
- All 2015 LWS Shell & PB Baseline Milestones complete
- 2016 LWS Shell NP No. 6 (2015 Stretch Goal) complete
- 2016 LWS Shell NP No. 7 pre-cast in-progress
- 2016 LWS Shell NP No. 8 pre-cast in-progress

Tainter Gates
- TG-1 and TG-2 erected
- TG-3 scheduled for delivery 30 Jun
- TG-4 scheduled for delivery 30 Sep
- Service Bridges (SB-1, SB-2) pre-cast in-progress
- Hydraulic machinery installation for TG-1/TG-2 complete

Locks & Approach Walls

Operations Facilities
- Maintenance Bldg (2017)
- Lock Masters Bldg (2017)

Resident Engineers Office

Dam Access Road

Left Boat Abutment
- Foundation Pile complete

Wicket Lifter
- Design underway (MDC)
- Scheduled FY16 4th Qtr Award
- Estimated delivery (Dec/2017)

River Dikes
- Design underway (LRL)
- Scheduled FY16 3rd Qtr Award
- IDIQ pending PARC approval

Completed

Under Contract

Future
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
**BUILDING STRONG®**

2016 Plan-to-Complete

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<table>
<thead>
<tr>
<th>SHELL</th>
<th>WEIGHT (TONS)</th>
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<tbody>
<tr>
<td>RBA PIECE 3</td>
<td>372</td>
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<tr>
<td>RBA PIECE 3</td>
<td>87.5</td>
</tr>
<tr>
<td>TW1-A</td>
<td>547</td>
</tr>
<tr>
<td>TW1-B</td>
<td>302</td>
</tr>
<tr>
<td>TW4-A</td>
<td>304</td>
</tr>
<tr>
<td>TW4-B</td>
<td>316</td>
</tr>
<tr>
<td>SERVICE BRIDGE TYPE 1</td>
<td>119</td>
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<tr>
<td>SERVICE BRIDGE TYPE 2</td>
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<table>
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<th>SHELL</th>
<th>WEIGHT (TONS)</th>
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<tr>
<td>NP 5-11</td>
<td>4955</td>
</tr>
<tr>
<td>NP 12A</td>
<td>(1765.7) 1/2</td>
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<tr>
<td>PAVING BLOCKS 9-12</td>
<td>2562</td>
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**ACTORS & LEGEND**

- **UP** – LOWER PIER
- **TO** – TANNER GATE
- **SB** – SERVICE BRIDGE
- **CM** – GROUT MAT
- **FP** – FOUNDATION PILE
- **W/S** – MASTER/WATER PILE
- **PB** – RIGHT BOAT ABUTMENT
- **PB** – PAVING BLOCK
- **NP** – NAVIGABLE PASS (MONOLITHIC)
- **UP** – UPPER PIER

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**NOTE:**

1. AVERAGE CYCLE TIME TO SET A PAVING BLOCK OR NAVIGABLE PASS MONOLITH SHELL IS 4 MINUTI.
2. NAV CHANNAL WILL BE LOCATED BETWEEN M1 AND M6 (REG RIVER STAGE 290 OR GREATER).

* Eight shells set in LWS 2015 including one shell set outside contractual LWS limits (15 Jun – 30 Nov)
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)

### Milestone Schedule

<table>
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<tr>
<th>Milestone</th>
<th>Date</th>
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<tbody>
<tr>
<td>PB-9</td>
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</tr>
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<td>PB-10</td>
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<tr>
<td>PB-11</td>
<td>XX Jul</td>
</tr>
<tr>
<td>PB-12</td>
<td>XX Jul</td>
</tr>
<tr>
<td>NP-7</td>
<td>XX Sep</td>
</tr>
<tr>
<td>NP-8</td>
<td>XX Oct</td>
</tr>
<tr>
<td>NP-9</td>
<td>XX Nov</td>
</tr>
<tr>
<td>TG-3</td>
<td>XX Aug</td>
</tr>
<tr>
<td>TG-4</td>
<td>XX Nov</td>
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### Baseline

**BASELINE**

(FY16-$268M)

(FY17-$225M)

**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**

<table>
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<tr>
<th></th>
<th>Planned (BCWS)</th>
<th>Earned (BCWP)</th>
<th>Actual (ACWP)</th>
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<tbody>
<tr>
<td></td>
<td>$2.103B</td>
<td>$2.034B</td>
<td>$2.111B</td>
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**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**

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<tr>
<th>Activity/Event</th>
<th>(PACR)/(Current)</th>
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<tbody>
<tr>
<td>Project Complete</td>
<td>Sep 2024/Mar 2022</td>
</tr>
<tr>
<td>Dam Operational</td>
<td>Sep 2020/Oct 2018</td>
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**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**

<table>
<thead>
<tr>
<th>Month</th>
<th>Sep-15</th>
<th>Oct-15</th>
<th>Nov-15</th>
<th>Dec-15</th>
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<td>TEP in Billions</td>
<td>3.099</td>
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<td>3.099</td>
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<td>PACR w/risk</td>
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<td>2.882</td>
<td>2.884</td>
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**Major Activity Schedule**
## Olmsted Project
Construction Management Score Card – Dec 2015

### Acquisition

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<th>17</th>
<th>18</th>
<th>19</th>
<th>20</th>
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<tbody>
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<td>Operations Building</td>
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<td>Lock &amp; Dam 52 - Demolition</td>
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<tr>
<td>Wicket Lifter Barge</td>
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**Current**

**PACR**

### 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+

<table>
<thead>
<tr>
<th>Contractor</th>
<th>Hours/Rate</th>
<th>FY 13</th>
<th>FY 14</th>
<th>FY 15</th>
<th>FY 16</th>
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<tbody>
<tr>
<td>AECOM/Alberici J/V</td>
<td>Hours:</td>
<td>1,122,387</td>
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<td># DART:</td>
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<td>Rate:</td>
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<td>0.65</td>
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</table>

### 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

PACR (Fully Funded) = $3.099B
Remaining Contingency = $216M

Current COE Estimated TEP is $2.883B in March 2022

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10
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

Olmsted Locks and Dam
Wicket Lifter Barge