UPDATE: TRANSFORMING USACE DREDGING
Growing dredging requirements and increasing cost present strategic risk
USACE DREDGING

• Focus is delivering the enterprise navigation dredging mission.

• Enterprise dredging program coordination is necessary and critical.

• USACE must be world class leaders in dredging: technical expertise, contracting, program execution, implementation of new technology.

• Safety is a mission and we will lead and partner to sustain and improve.
ESTABLISHING ENTERPRISE DREDGING PRINCIPLES OF DELIVERY

- Regional and Enterprise Coordination
- Acquisition Tools and Approaches
- Enterprise Schedule Coordination
- Communication and Transparency
- Contingency Planning
5-YEAR DREDGING SCHEDULE

- Initial schedule compiled and shared in July / August 2018
- Resolution of schedule conflicts (October 2018)
• Projected schedule reflects all FY19 Planned work (hopper, large pipeline)

• Several periods where requirement exceeds capacity.

• Pursuing approaches to minimize challenge to maintenance, construction.
AUTOMATED TOOLS

Dredge Project Selection
Dredge Schedule
Optimization
Dredging Information System (DIS)

Expanding use of Available Tools to Inform Decisions and Improve Program Performance
1. Dredging Project Selection
   - Dredge more NAV projects by better aligning funding to actual dredging needs
   - Recommends optimal maintained depth targets and requisite dredging quantities
   - How? Compares cargo drafts to maintained depths and considers cargo shared across projects

2. Dredge Schedule Optimization
   - Minimize mobilization costs
     → dredge more NAV projects each year for same amount of funding
   - Better align schedules with env. work windows and dredge plant capabilities
   - Can be used in whole or in part (regions, big dredges vs. little dredges, big projects vs. little projects, etc.)
DREDGING INFORMATION SYSTEM (DIS)

- USACE’s National Database for All Dredging Information. Platform to provide information on current and upcoming work to industry partners
- Accessible to Public
- New product delivery team (PDT) formed (Kick-off September 2018)
CONTINGENCY PLANNING

- Southwest Pass (SWP) is the gateway to the 3rd largest port system in the US, containing 4 of the top 15 ports (by tonnage) in the US

- Sections of SWP are prone to recurring high water events that result in critical dynamic shoaling with short notice between January and April each year

- USACE HQ is working to identify short- (FY19) and long-term strategies to ensure the capability to respond to urgent needs in SWP without adversely impacting other navigation projects
• Red Flag Authority for the Mississippi River Baton Rouge to Southwest Pass (Gulf of Mexico) Project delegated from the USACE Director of Civil Works to the MVD Commander (May 2018) under specified conditions

• Supports risk informed decision making and acknowledges long standing partnership with dredging industry

• Procedure and requirements for transparent communication with industry unchanged.

• Director Civil Works can suspend delegation when enterprise impacts are expected
Pipeline Observation & Verification Enterprise Repository (Plover)

- Database designed to allow navigation managers to access recent regulatory permits related to utility crossings in federal channels.
- Currently in use in New Orleans and Mobile Districts.
- Project delivery team (PDT) working on guidelines and processes for enterprise wide implementation.
- Limitations: unknown integrity of information provided by others, no process in place to include existing utility crossings, for internal USACE use only when developing plans and specifications.
- Other publicly available sources of information include: #811/One-Call, Pipeline and Hazardous Materials Safety Administration (PHMSA), National Ocean Service / NOAA Nautical Charts, USCG Navigation Center for local Notices to Mariners, etc.

<table>
<thead>
<tr>
<th>Approximate Station</th>
<th>Permit No.</th>
<th>Description</th>
<th>Owner</th>
</tr>
</thead>
<tbody>
<tr>
<td>1101+763</td>
<td>16247</td>
<td>One 2 and 7/8-inch pipeline</td>
<td>General Atlantic Resources, Inc.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>One 4 and 1/2-inch pipeline</td>
<td></td>
</tr>
<tr>
<td>1102+281</td>
<td>7461/3371</td>
<td>One 12-inch pipeline</td>
<td>Houston Pipe Line Co.</td>
</tr>
<tr>
<td>1108+419</td>
<td>16715</td>
<td>One 24-inch pipeline</td>
<td>Northern Natural Gas Co.</td>
</tr>
</tbody>
</table>
# USACE HOPPER DREDGE MINIMUM FLEET

<table>
<thead>
<tr>
<th>Vessel</th>
<th>Capacity CY</th>
<th>Year Built</th>
<th>Repowered</th>
<th>Potential Retirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCFARLAND</td>
<td>3140</td>
<td>1967</td>
<td>*</td>
<td>2025</td>
</tr>
<tr>
<td>WHEELER</td>
<td>8256</td>
<td>1981</td>
<td>2013</td>
<td>2033</td>
</tr>
<tr>
<td>ESSAYONS</td>
<td>6000</td>
<td>1983</td>
<td>2009</td>
<td>2033**</td>
</tr>
<tr>
<td>YAQUINA</td>
<td>1050</td>
<td>1981</td>
<td>2012</td>
<td>2040</td>
</tr>
</tbody>
</table>

Note: In addition to the four (4) hopper dredges, the USACE minimum fleet also includes three (3) special purpose dredges (SAW) and four (4) pipeline dredges (MVD)
Public Law 95-269 - April 26, 1978

- The Secretary shall have dredging and related work done by contract if he determines private industry has the capability to do such work and it can be done at reasonable prices and in a timely manner.

- To carry out emergency and national defense work the Secretary shall retain only the minimum federally owned fleet capable to perform such work and he may exempt from the provisions of this section such amount of work as he determines to be reasonably necessary to keep such fleet fully operational.

- The minimum federally owned fleet shall be maintained to technologically modern and efficient standards, including replacement as necessary.

Subsequent Legislation

- **WRDA 1993** - Requires Corps to bid at least 7.5 MCY of hopper dredge volume accomplished in 1992 by Gov't dredges Corps response – limits all 4 dredges to 180 days of operation.

- **WRDA 1996** - Placed the Wheeler in Ready Reserve status effective Oct. 1997; implement procedures to ensure private-industry hopper dredge capacity is available to meet routine and time-sensitive dredging needs.

- **WRDA 2007** – Placed the McFarland in Ready Reserve status between Oct. 2009 and Dec 2009; Removes operational restrictions from West Coast dredges, the Essayons and the Yaquina.

Based on these authorities, USACE operates four hopper dredges: The YAQUINA and ESSAYONS (no operational restrictions) and the WHEELER and MCFARLAND (ready reserve fleet restrictions).
The 2016-2017 Analysis Considered:

- Industry capability
- Historical hopper dredging mission analysis
- Forecasted hopper dredging needs
- Law (PL 95-269 and WRDA language)
- Financial considerations of maintenance and PRIP health

Recommendation Areas:

- Size and location of the Hopper Dredge Fleet
- Whether or not to recapitalize the Dredge Fleet
- Opportunities for improvements in management

Consultation:

- Industry/ DCA
- Stakeholders (e.g. AAPA)
- USACE Navigation Program Experts
- USACE Operations leadership

Major Findings:

- Corps Dredges provide strategic economic and risk reduction benefits to the national defense, emergency, resiliency and recovery, and price control.

- Industry Capability meets the Routine Needs of the Corps, but the frequent activation of the Ready Reserve Fleet (WHEELER and MCFARLAND) demonstrates the need for the Ready Reserve Fleet for surge.

- The Corps dredges are experiencing age related maintenance and repair costs which are driving up ownership and operating costs.

- The Plant Replacement and Improvement Program (PRIP) will support scheduled replacements and replacing older dredges will reduce long-term costs to the CW program.
Recommendations:

- **Maintain ‘Industry First’ Policy**

- **Replace 51 year old Hopper Dredge MCFARLAND.** Plan for subsequent life cycle replacement of dredges WHEELER, ESSAYONS and YAQUINA. **Retire dredges as replacements come on line.**

- **Life Cycle Asset Management** - New Corps dredges to be maintained per life cycle asset management principles, shorter depreciation schedules, planned periodic investment for the replacement of some components, and a systematic evaluation of a hull and major system components.

- **Financial Management** - The assumptions used for Depreciation and Plant Replacement Increment calculations for each dredge should be reviewed and adjusted as necessary given economic and material cost changes, but not less often than at ten year intervals.
# USACE READY RESERVE FLEET CALLOUT HISTORY

## 2010 - 2018

<table>
<thead>
<tr>
<th>READY-RESERVE DREDGE</th>
<th>FISCAL YEAR</th>
<th>RED FLAG CALLOUT EVENTS</th>
<th>READY-RESERVE EXERCISE DAYS</th>
<th>RED-FLAG CALLOUT DAYS</th>
<th>TOTAL DAYS</th>
</tr>
</thead>
<tbody>
<tr>
<td>WHEELER</td>
<td>2010</td>
<td>SWP</td>
<td>28</td>
<td>136</td>
<td>164</td>
</tr>
<tr>
<td>WHEELER</td>
<td>2011</td>
<td>SWP</td>
<td>62</td>
<td>82</td>
<td>144</td>
</tr>
<tr>
<td>WHEELER</td>
<td>2012</td>
<td>SWP</td>
<td>70</td>
<td>59</td>
<td>129</td>
</tr>
<tr>
<td>WHEELER</td>
<td>2013</td>
<td>DRYDOCK - Repowering</td>
<td>70</td>
<td>0</td>
<td>70</td>
</tr>
<tr>
<td>WHEELER</td>
<td>2014</td>
<td></td>
<td>70</td>
<td>0</td>
<td>70</td>
</tr>
<tr>
<td>WHEELER</td>
<td>2015</td>
<td>SWP</td>
<td>13</td>
<td>140</td>
<td>153</td>
</tr>
<tr>
<td>WHEELER</td>
<td>2016</td>
<td>SWP</td>
<td>70</td>
<td>55</td>
<td>125</td>
</tr>
<tr>
<td>WHEELER</td>
<td>2017</td>
<td>SWP</td>
<td>70</td>
<td>49</td>
<td>119</td>
</tr>
<tr>
<td>WHEELER</td>
<td>2018</td>
<td>SWP</td>
<td>70</td>
<td>66</td>
<td>136</td>
</tr>
<tr>
<td><strong>WHEELER Average 2010-2018</strong></td>
<td></td>
<td></td>
<td>58</td>
<td>65</td>
<td>123</td>
</tr>
<tr>
<td>McFARLAND</td>
<td>2010</td>
<td>SWP</td>
<td>74</td>
<td>96</td>
<td>170</td>
</tr>
<tr>
<td>McFARLAND</td>
<td>2011</td>
<td>SWP</td>
<td>70</td>
<td>0</td>
<td>70</td>
</tr>
<tr>
<td>McFARLAND</td>
<td>2012</td>
<td>MOREHEAD</td>
<td>70</td>
<td>30</td>
<td>100</td>
</tr>
<tr>
<td>McFARLAND</td>
<td>2013</td>
<td>MOREHEAD</td>
<td>70</td>
<td>24</td>
<td>94</td>
</tr>
<tr>
<td>McFARLAND</td>
<td>2014</td>
<td>SWP</td>
<td>70</td>
<td>0</td>
<td>70</td>
</tr>
<tr>
<td>McFARLAND</td>
<td>2015</td>
<td>SWP</td>
<td>70</td>
<td>62</td>
<td>132</td>
</tr>
<tr>
<td>McFARLAND</td>
<td>2016</td>
<td>SWP</td>
<td>70</td>
<td>59</td>
<td>129</td>
</tr>
<tr>
<td>McFARLAND</td>
<td>2017</td>
<td></td>
<td>70</td>
<td>0</td>
<td>70</td>
</tr>
<tr>
<td>McFARLAND</td>
<td>2018</td>
<td>MOREHEAD</td>
<td>70</td>
<td>73</td>
<td>143</td>
</tr>
<tr>
<td><strong>McFARLAND Average 2010-2018</strong></td>
<td></td>
<td></td>
<td>70</td>
<td>38</td>
<td>108</td>
</tr>
</tbody>
</table>

Since Placing the MCFARLAND in Ready Reserve (2010), USACE Ready Reserve dredges annually operated an average of 123 days (WHEELER) and 108 days (MCFARLAND) in support of the USACE Navigation Mission*

* Includes a max. of 70 readiness days per year. Corps Ready Reserve dredges are only deployed when industry capacity is insufficient to mission requirements.
**BREAKOUT OF HOPPER DREDGE WORK**

<table>
<thead>
<tr>
<th></th>
<th>O&amp;M (MCY) (1)</th>
<th>New Work (MCY) (2)</th>
<th>Fed Work for OTH (MCY) (3)</th>
<th>Surge (MCY) (4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industry</td>
<td>360,626 72%</td>
<td>65,362 98%</td>
<td>10,283 87%</td>
<td>92,354 92%</td>
</tr>
<tr>
<td>Corps</td>
<td>141,788 28%</td>
<td>1,104 2%</td>
<td>1,570 13%</td>
<td>8,155 8%</td>
</tr>
<tr>
<td>Total</td>
<td>502,414 100%</td>
<td>66,466 100%</td>
<td>11,853 100%</td>
<td>100,509 100%</td>
</tr>
</tbody>
</table>

**Historical Program (2005-2015)**

Industry does the majority of Government’s base O&M work, construction and non-routine work.

(1) O&M: Routine navigation dredging  
(2) New Work: Channel widening/deepening  
(3) Fed Work Other: US Navy, Coast Guard  
(4) Surge: Emergency, storm response

Information sources: DIS (Dredging Info Sys), DQM (Dredging Quality Mgmt) and continuous analysis of dredging contracts.
INCREASING DEMAND FOR HOPPER DREDGING

- Increased Funding from HMTF
- New Construction Requirements (increasing harbor depths)
- Increased O&M associated with increased harbor depths
- Beach Nourishment – RSM, BOEM licenses
- Surge/emergency response and repair
- Private work

USACE anticipates sustained pressure to deliver the dredging program using the full capacity of industry and the USACE reserve fleet.
# HOPPER DREDGE RECAPITALIZATION
## MCFARLAND REPLACEMENT - CONCEPT

### Design Parameters:
- Dredge will operate from Ready Reserve status
- Modern, efficient, environmentally and economically sustainable
- Maximize the applicability of existing commercial dredge designs
  - Length Overall: 320 feet or less.
  - Beam: As best suits current designs.
  - Air-draft: 110 ft. maximum
  - Max Loaded Draft: 26 ft.
  - Hopper capacity: 5,000 - 6,000 cubic yards (medium class)
  - Dredging depth capability: 65 feet
  - Power System: Diesel powered.

### Acquisition Strategy:
- Envisioned as procuring the vessel under a best value trade off (BVT), Design-Build contract.
  - Best Value Trade Off Approach will ensure that the vessel:
    - Meets the requirements of the USACE minimum fleet
    - Is economical to build and operate
    - Is safe for the crew of the vessel
    - Will be capable, operable, and maintainable for ready reserve operation, &
    - Will meet applicable regulatory requirements

---

Sec. 109 for Fiscal Year 2019, none of the funds provided in this Act are available in the revolving fund established by the Civil Functions Appropriations Act or 1954 (33 USC 576 (a)) may be obligated or expended on a new hopper dredge.

USACE has not finalized an acquisition approach
• Assessing impact of statutory language on Hopper Dredge Recapitalization plan

• The Corps manages the hopper dredge MCFARLAND consistent with mission responsibilities as directed by federal statute.

• The Corps manages its dredging program in partnership with industry, with a priority on industry contract dredging (“industry first”).

• The Corps ready reserve dredges MCFARLAND and WHEELER provide essential capability for emergencies, national security, and when industry is unable to meet the navigation dredging mission.

• USACE has no plans to change the operational employment, number or location of our reserve fleet

• No new funds are needed to replace the MCFARLAND.

• USACE welcomes industry investment in new and more efficient dredges. USACE does NOT complete with industry.
CLOSING THOUGHTS

- ASA CW Honorable Mr James and Chief of Engineers focus is on project and program delivery

- Chief of Engineers vision is to REVOLUTIONIZE USACE

- USACE Civil Works, USACE Operations and Regulatory, USACE Navigation are focused on delivery and being WORLD CLASS … challenge us!

- Critical that We Not Lose Focus on Our **Partners, Stakeholders, and Our Commitments**