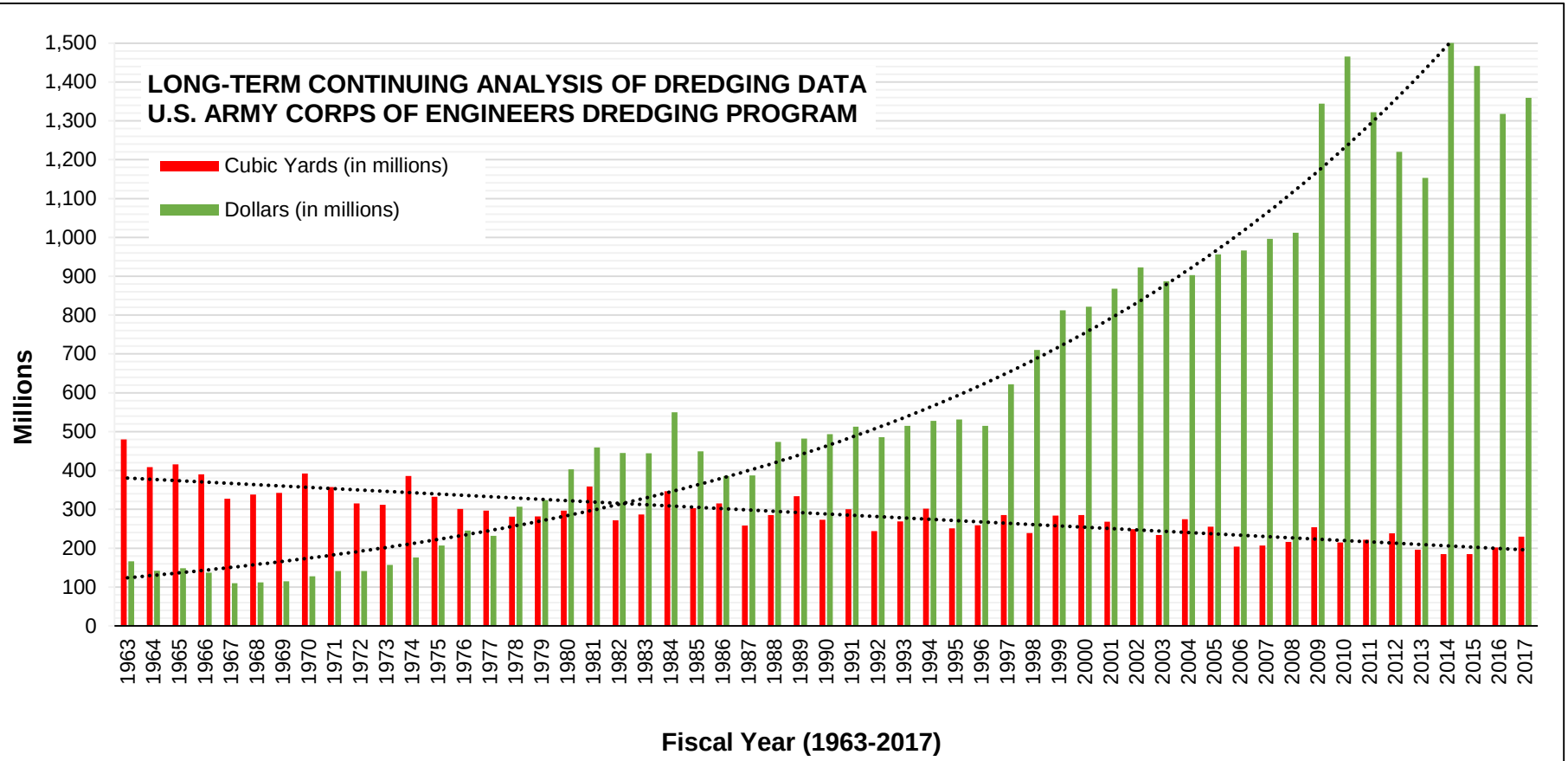
UPDATE: TRANSFORMING USACE DREDGING

CHALLENGES TO NAVIGATION DREDGING



Growing dredging requirements and increasing cost present strategic risk

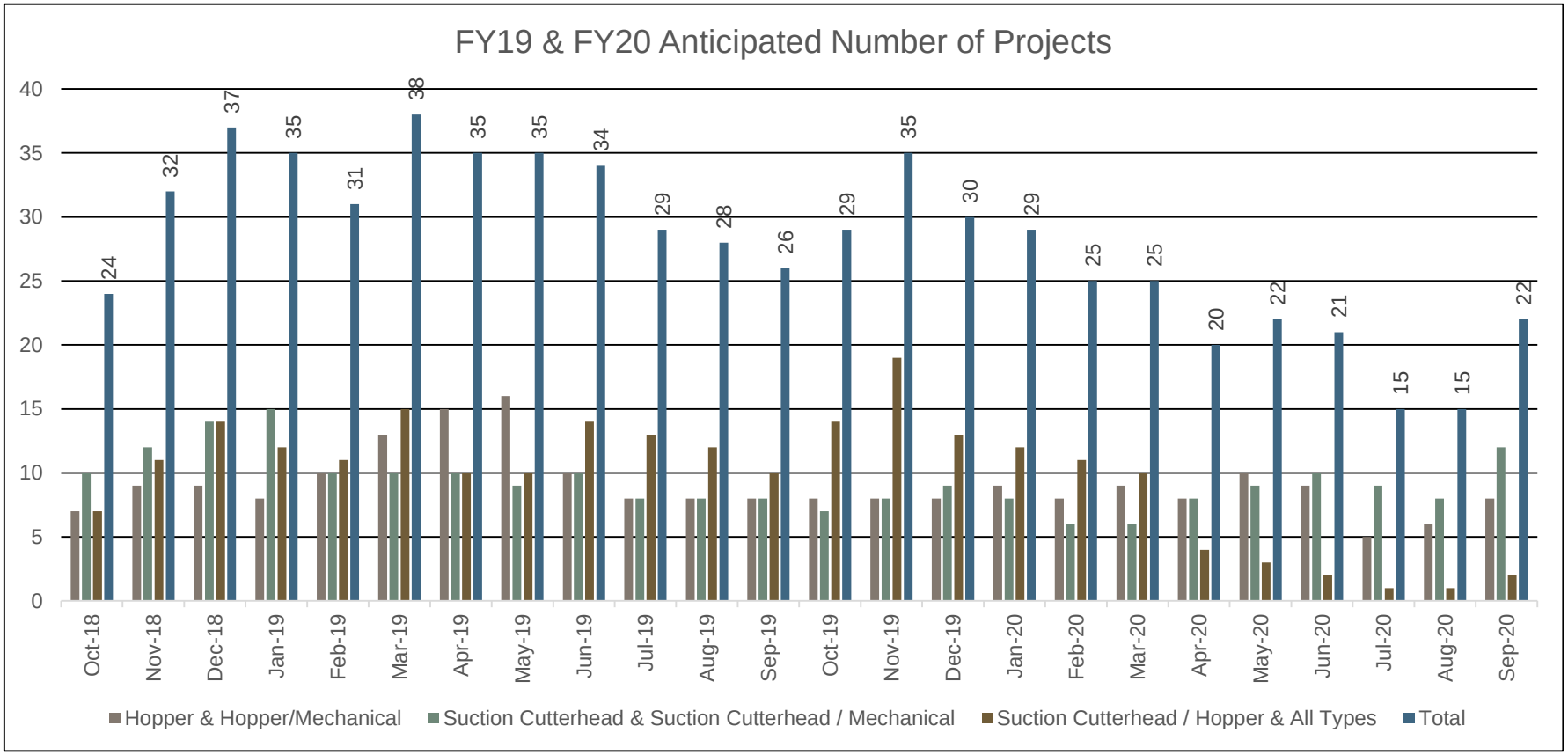
USACE DREDGING

- 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

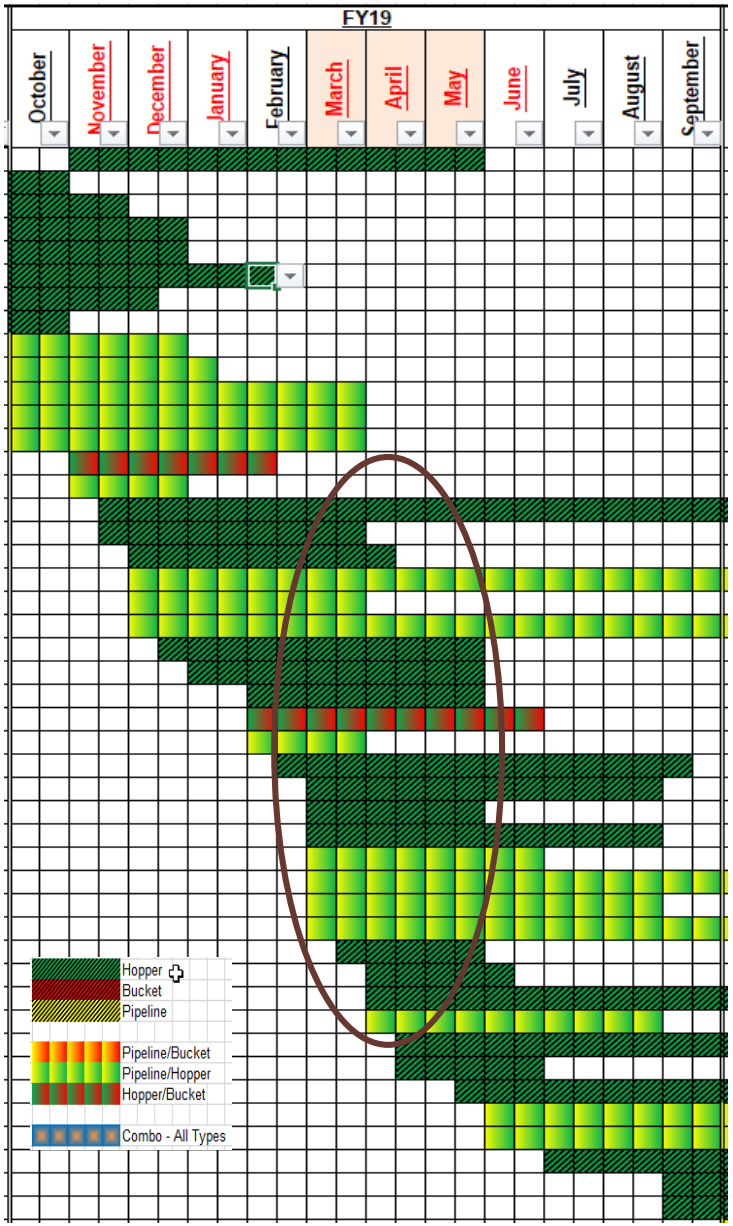
5-YEAR DREDGING SCHEDULE



- Initial schedule compiled and shared in July / August 2018
- Resolution of schedule conflicts (October 2018)

DREDGE SCHEDULE CONFLICT - EXAMPLE

- 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

DREDGING PORTFOLIO OPTIMIZATION STRATEGIES

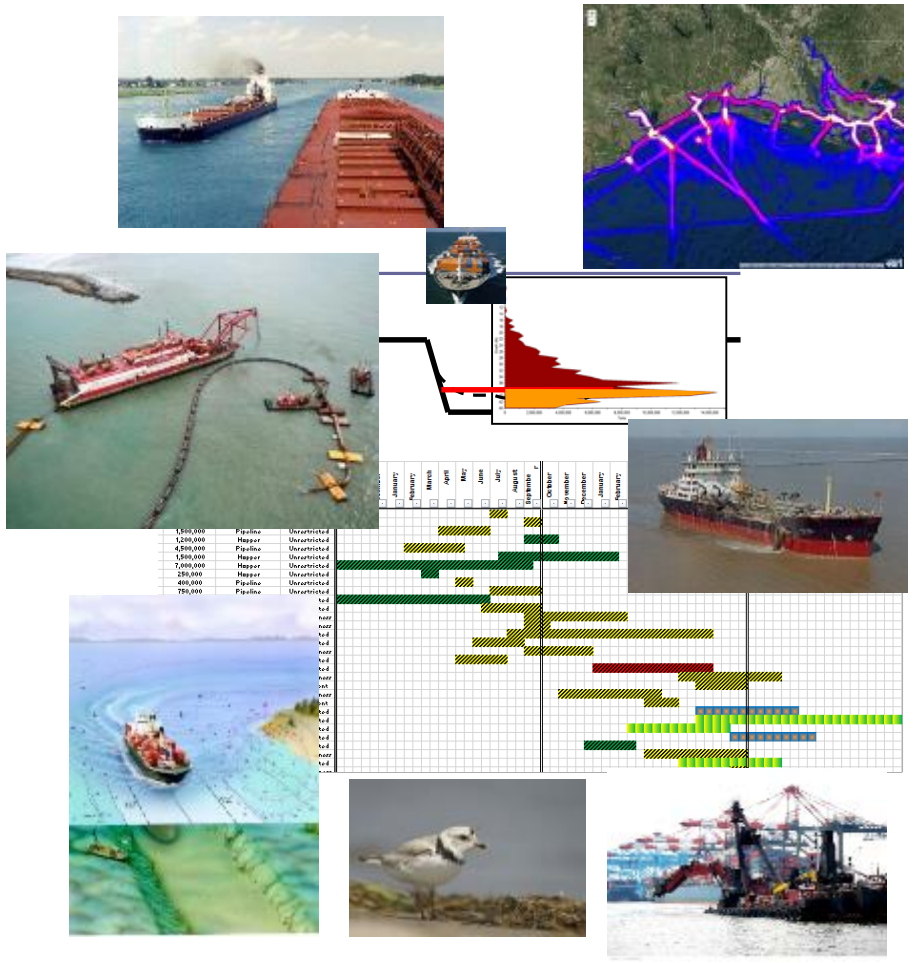
1. Dredging Project Selection

- 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

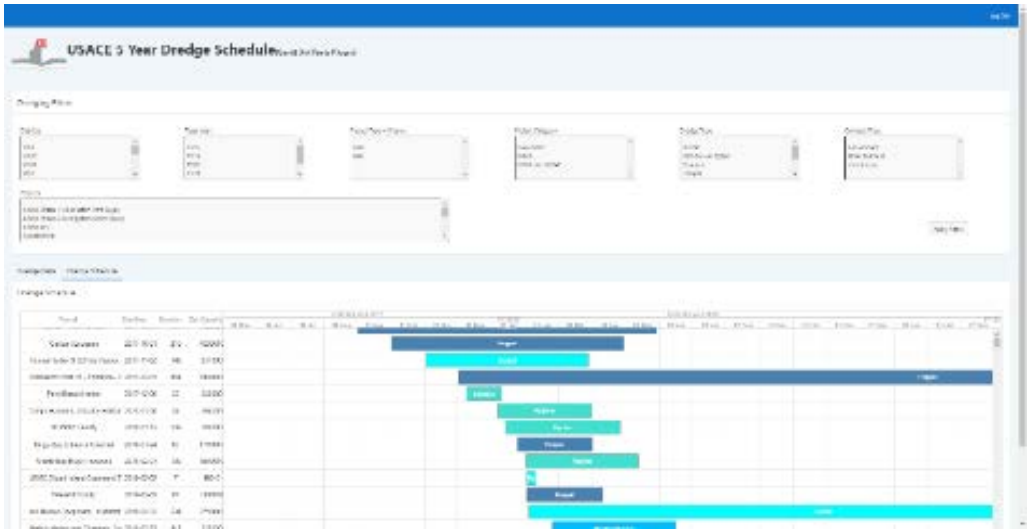
- Minimize mobilization costs

  → 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.)



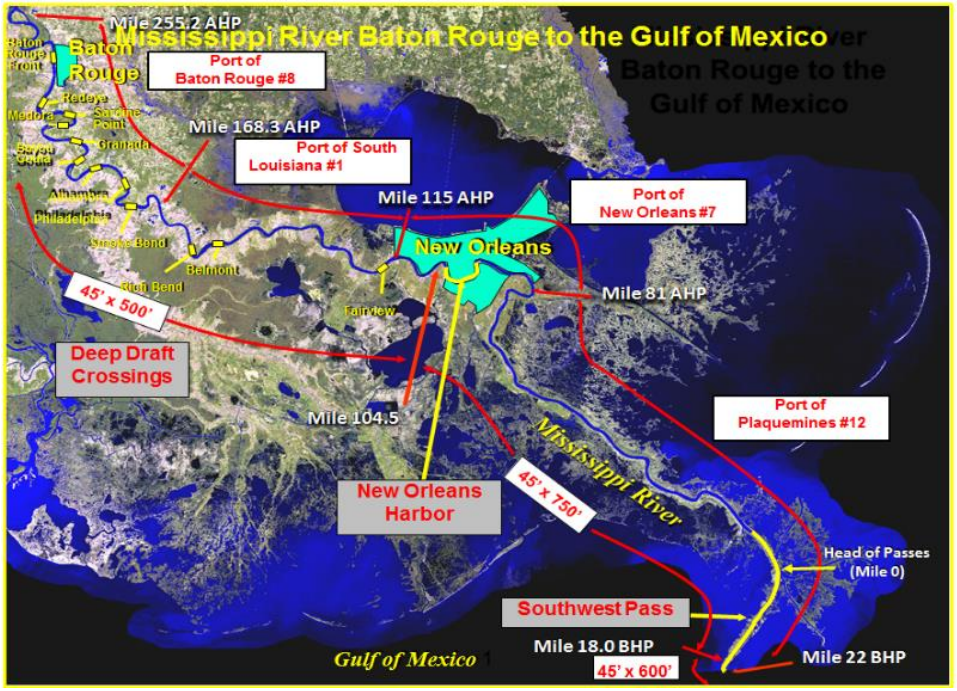
DREDGING INFORMATION SYSTEM (DIS)

- USACE's National Database for All Dredging Information. Platform to provide information on current and upcoming work to industry partners
- Accessible to Public
- Governed by EP 1130-2-520, Navigation and Dredging Operations and Maintenance Guidance and Procedures
- New product delivery team (PDT) formed (Kick-off September 2018)



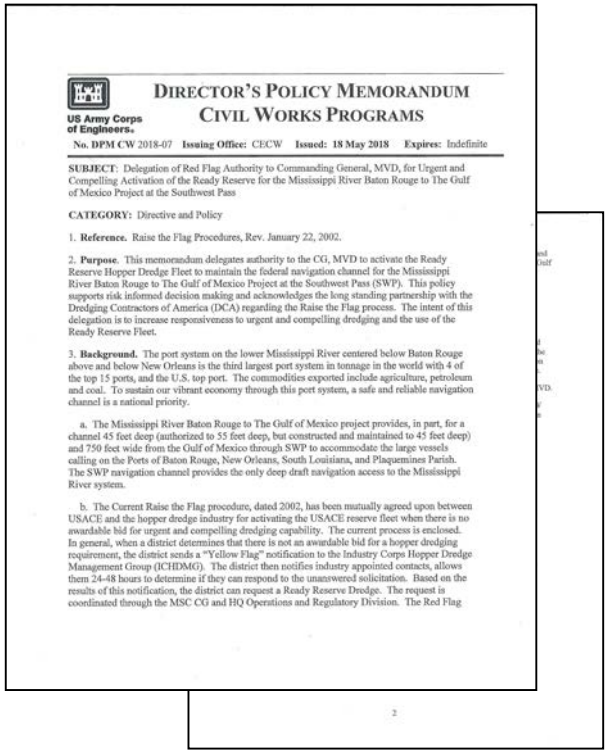
CONTINGENCY PLANNING

- 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 DELEGATION

- *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*



US Army Corps of Engineers

DIRECTOR'S POLICY MEMORANDUM
CIVIL WORKS PROGRAMS

No. DPM CW 2018-07 **Issuing Office:** CECW **Issued:** 18 May 2018 **Expires:** Indefinite

SUBJECT: Delegation of Red Flag Authority to Commanding General, MVD, for Urgent and Compelling Activation of the Ready Reserve for the Mississippi River Baton Rouge to The Gulf of Mexico Project at the Southwest Pass

CATEGORY: Directive and Policy

1. **Reference.** Raise the Flag Procedures, Rev. January 22, 2002.

2. **Purpose.** This memorandum delegates authority to the CG, MVD to activate the Ready Reserve Hopper Dredge Fleet to maintain the federal navigation channel for the Mississippi River Baton Rouge to The Gulf of Mexico Project at the Southwest Pass (SWP). This policy supports risk informed decision making and acknowledges the long standing partnership with the Dredging Contractors of America (DCA) regarding the Raise the Flag process. The intent of this delegation is to increase responsiveness to urgent and compelling dredging and the use of the Ready Reserve Fleet.

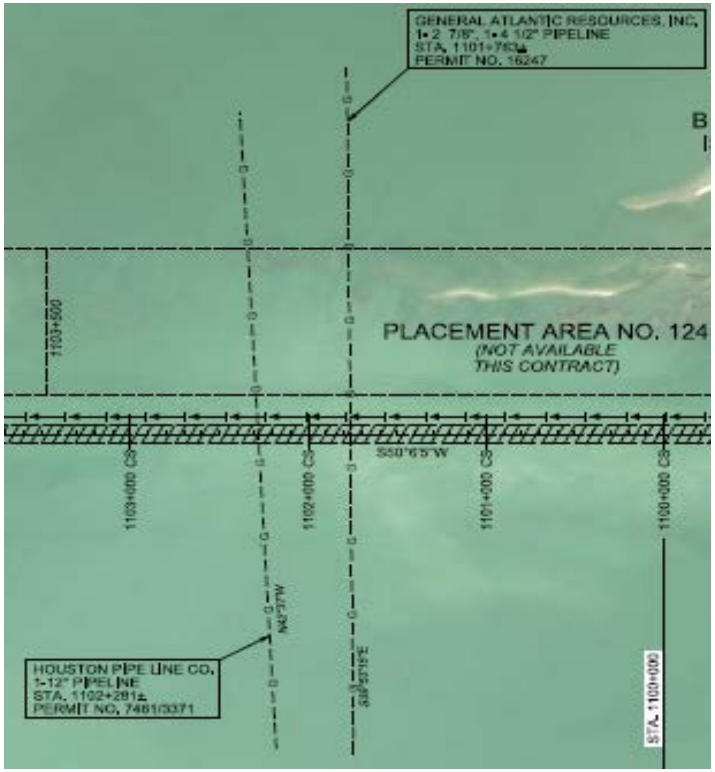
3. **Background.** The port system on the lower Mississippi River centered below Baton Rouge above and below New Orleans is the third largest port system in tonnage in the world with 4 of the top 15 ports, and the U.S. top port. The commodities exported include agriculture, petroleum and coal. To sustain our vibrant economy through this port system, a safe and reliable navigation channel is a national priority.

a. The Mississippi River Baton Rouge to The Gulf of Mexico project provides, in part, for a channel 45 feet deep (authorized to 55 feet deep, but constructed and maintained to 45 feet deep) and 750 feet wide from the Gulf of Mexico through SWP to accommodate the large vessels calling on the Ports of Baton Rouge, New Orleans, South Louisiana, and Plaquemines Parish. The SWP navigation channel provides the only deep draft navigation access to the Mississippi River system.

b. The Current Raise the Flag procedure, dated 2002, has been mutually agreed upon between USACE and the hopper dredge industry for activating the USACE reserve fleet when there is no awardable bid for urgent and compelling dredging capability. The current process is enclosed. In general, when a district determines that there is not an awardable bid for a hopper dredging requirement, the district sends a "Yellow Flag" notification to the Industry Corps Hopper Dredge Management Group (ICHDMG). The district then notifies industry appointed contacts, allows them 24-48 hours to determine if they can respond to the unanswered solicitation. Based on the results of this notification, the district can request a Ready Reserve Dredge. The request is coordinated through the MSC CG and HQ Operations and Regulatory Division. The Red Flag

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.



Approximate Station	Permit No.	Description	Owner
1101+763	16247	One 2 and 7/8-inch pipeline One 4 and 1/2-inch pipeline	General Atlantic Resources, Inc.
1102+281	7461/3371	One 12-inch pipeline	Houston Pipe Line Co.
1108+419	16715	One 24-inch pipeline	Northern Natural Gas Co.

USACE HOPPER DREDGE MINIMUM FLEET

Vessel	Capacity CY	Year Built	Repowered	Potential Retirement
MCFARLAND	3140	1967	*	2025
WHEELER	8256	1981	2013	2033
ESSAYONS	6000	1983	2009	2033**
YAQUINA	1050	1981	2012	2040

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)

USACE HOPPER DREDGE FLEET GOVERNING AUTHORITIES

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).

2016 HOPPER DREDGE RECAPITALIZATION ANALYSIS

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.**

2016 HOPPER DREDGE RECAPITALIZATION ANALYSIS

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

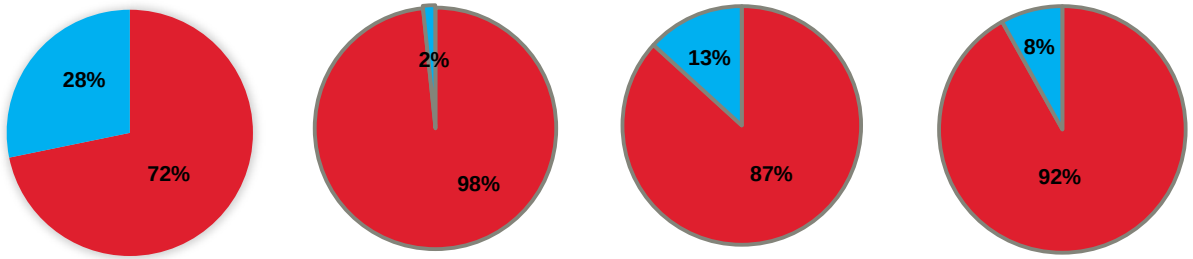
READY-RESERVE DREDGE	FISCAL YEAR	RED FLAG CALLOUT EVENTS				READY-RESERVE EXERCISE DAYS	RED-FLAG CALLOUT DAYS	TOTAL DAYS
		1	2	3	4			
WHEELER	2010	SWP	SWP	SWP	SWP	28	136	164
WHEELER	2011	SWP	SWP			62	82	144
WHEELER	2012	SWP				70	59	129
WHEELER	2013	DRYDOCK - Repowering				70	0	70
WHEELER	2014					70	0	70
WHEELER	2015	SWP	SWP	SWP	CORPUS	13	140	153
WHEELER	2016	SWP	SWP			70	55	125
WHEELER	2017	SWP	CALCS			70	49	119
WHEELER	2018	SWP				70	66	136
WHEELER Average 2010-2018						58	65	123
McFARLAND	2010	SWP	SWP	First year of Ready Reserve Status		74	96	170
McFARLAND	2011					70	0	70
McFARLAND	2012	MOREHEAD				70	30	100
McFARLAND	2013	MOREHEAD				70	24	94
McFARLAND	2014	SWP				70	0	70
McFARLAND	2015	SWP				70	62	132
McFARLAND	2016	SWP	WILM HBR			70	59	129
McFARLAND	2017					70	0	70
McFARLAND	2018	MOREHEAD	BROWNSVL			70	73	143
McFARLAND Average 2010-2018						70	38	108

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 WEORK

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



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.

USACE has not finalized an acquisition approach

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.

RECAPITALIZATION SUMMARY

- 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