James River Partnership XXI

The Mariners Museum 100 Museum Drive, Newport News, Virginia November 30, 2017

Vision: "To Foster Navigational, Economic, and Environmental Cooperation and Stewardship of the James River Navigation Channel."

Goal: "To Achieve UNRESTRICTED NAVIGATION on the James River, while providing for good environmental stewardship of its resources."

"Welcome, Opening Remarks"

Mr. Whiting Chisman

Vice President

Virginia Pilot Association

"Introduction of Guests"

Mr. Keith Lockwood

Chief Operations Branch

U.S. Army Corps of Engineers

"Commander's Perspective"

Colonel Jason Kelly, PMP

Commander, Norfolk District

U.S. Army Corps of Engineers

Colonel Jason Kelly, PMP Commander, Norfolk District U.S. Army Corps of Engineers



James River Partnership 30 November, 2017







US Army Corps of Engineers



"Navigation Program"

Mr. Thomas Shea

Program Manager

U.S. Army Corps of Engineers

U.S. ARMY CORPS OF ENGINEERS NAVIGATION PROGRAM UPDATE

James River Partnership
30 November 2017
Newport News, VA

Thomas Shea, PMP

O&M Appropriation Program Manager

North Atlantic Division

U.S. Army Corps of Engineers



US Army Corps of Engineers



USACE Navigation Assets

COASTAL NAVIGATION
1,067 Navigation projects
23 Lock chambers
13,000 Miles of channels
929 Navigation structures
844 Bridges



INLAND NAVIGATION
27 Inland River Systems
218 Lock chambers @ 176 lock sites
12,000 Miles of inland river channels





KEY CHALLENGES

- Continued pressure on budget
- Competition for funds remains keen
- Flat budgets increasing costs
- 21st century needs different or greater than those of last century
- Extreme weather events: hurricanes, droughts
- Age of infrastructure
- Seasonal "no dredge" periods due to threatened and endangered species reduces available dredging time

Impacts:

- Sustainability and reliability of assets
- Channel availability
- Low use channels
- Locks level of service
- Decreased navigation structure reliability
- Impediments to commerce





Performance-Based Budgeting

Budgets focus on highest-performing projects

Channel Type	Coastal	Inland
High Commercial Use:	> 10M tons per year	> 5B ton-miles per year
Moderate Commercial Use:	1M-10M tons per year	1B-5B ton-miles per year
Low Commercial Use:	< 1M tons per year	< 1B ton-miles per year

Other factors:

- ✓ Subsistence harbors
- ✓ Critical harbors of refuge
- ✓ National security (Navy, Coast Guard)
- ✓ Energy supply
- ✓ Public transportation
- ✓ Life safety
- ✓ Commercial fishing

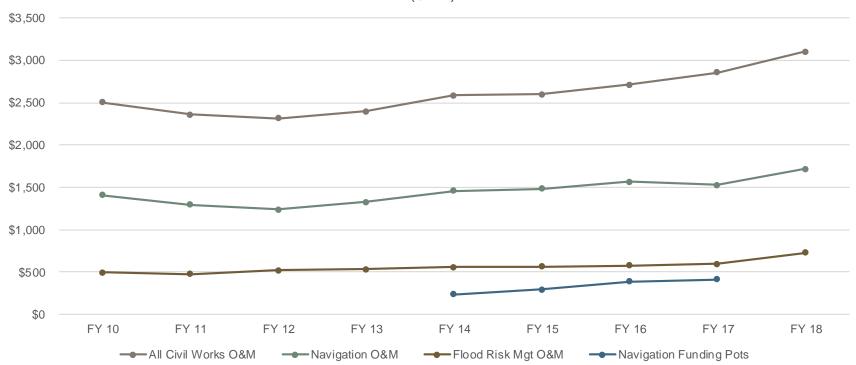
USACE Navigation O&M					
Use Type	High	Moderate	Low		
No. Projects	59	100	908		
% of Commerce	90%	9%	1%		
% of PRESBUD	62%	25%	7%		





Budget Trends and Comparisons

USACE O&M Funding (\$Mil)



- Nationally, the Navigation Program is relatively constant
- Navigation accounts for 55% of total O&M
- Congressional Funding Pots adds about 25%





OTHER TRENDS IMPACTING FUNDING

- O&M 20/20
- Administration's Infrastructure Initiatives
- Recent or upcoming deepening projects
 - NY & NJ Harbor, Savannah, and Charleston
 - new O&M requirements





USACE NAVIGATION DATA CENTER

http://www.navigationdatacenter.us/index.htm



Waterborne

Vessel Characteristics Port Facilities Dredging Information Lock Use, Performance, Characteristics

Click on the pictures above for detailed information by subject area Click on the links below for new additions, related links, monthly indicators, maps and data

, and 3

Site Index

Site Index - Select One:

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Institute for Water Resources
Home

Navigation Notices



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Foreign Waterborne Transportation

DATA for downloading

Corps Locks

Metadata

GIS

Eroc Codes

USAGov Search Government Websites

Waterborne Commerce | Vessel Characteristics | Port Facilities

Dredging Contracts | Look Statistics

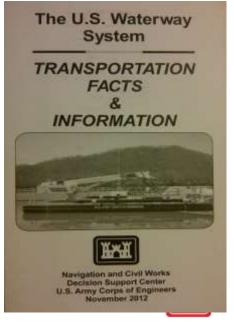
Privacy Notice

Comments or Questions Contact: U.S. Army Corps of Engineers Institute for Water Resources Navigation Data Center 7701 Telegraph Rd Alexandria, VA 22315 Fax: (703) 428-8047

CEIWR-NDC.WEBMASTER@usace.army.mil

Div Dist C tr Lab 50A
You
Are
Here

- USACE Web Page
- Waterborne commerce
- Vessel characteristics
- Port facilities
- Dredging information
- Locks





US Army Corps of Engineers *

This document was last revised: 3/5/2014

"James River Project Status"

Mr. Michael Anderson

Chief Design Management

U.S. Army Corps of Engineers

NORFOLK DISTRICT JAMES RIVER PARTNERSHIP XXI

James River Project Update Michael L. Anderson, PE Project Manager 30 November 2017

"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."





James River Funding

James River Federal	Navigation Project		
Fiscal Year (FY)	President's Budget Amount (\$)	Appropriation Amount (\$)	Capability Amount (\$)
2008	4,320,000	4,655,000	5,730,000
2009	3,667,000	3,336,000	8,788,000
2010	4,479,000	4,257,000	10,392,000
2011	4,180,000	4,180,000	7,370,000
2012	4,363,000	4,234,230	7,096,000
2013	3,948,000	3,948,000	7,600,000
2014	3,801,000	4,698,000	7,600,000
2015	3,696,000	5,696,000	7,600,000
2016	4,006,000	5,506,000	9,265,000
2017	4,100,000	7,900,000	7,900,000
2018	2,729,000		7,929,000
10 year average =	4,328,900	4,841,023	8,727,000
Supplemental Funds			
ARRA =	3,314,000		
Storm Sandy =	3,050,000		
Hurricane Matthew =	500,000 for the RDWT		





James River Funding Continued

	-		
Fiscal Year (FY)	President's Budget Amount (\$)	Appropriation Amount (\$)	Capability Amount (\$)
2017	4,100,000	7,900,000	7,900,000
2018	2,729,000	Pending	7,929,000
10 year average =	4,328,900	4,841,023	8,727,000
Hurricane Matthew =	500,000 for the RDWT		





INDEFINITE DELIVERY INDEFINITE QUANTITY (IDIQ) CONTRACT W91236-15-D-0053

Contract to Cottrell Contracting Corporation includes a base year and two option years (3 years total)

Status:

Base Contract awarded 29 September 2015
Option Year 1 awarded on 29 September 2016
Option Year 2 awarded and started on 29 September 2017
Six Task Orders awarded to date





COTTRELL CONTRACTING CORPORATION THE ROCKBRIDGE DREDGE







Accomplishments

Maintenance Dredging Completed:

- Task Order 4 \$2,089,036.00
 Dancing Point Swann Point & Goose Hill Channels
 10 January 2017 14 February 2017
 290,000 Cubic Yards of Pay Volume removed
- Task Order 5 \$4,832,944.50
 Dancing Point Swann Point & Goose Hill Channels
 20 July 2017 21 December 2017 (work ongoing)
 800,000 Cubic Yards of available Pay Volume
 (scope reduced from 26'+1 to 25'+1 dredging depths)





Accomplishments Continued

Maintenance Dredging Completed:

Task Order 6 \$2,770,250.00

Dancing Point - Swann Point & Tribell Shoal Channels

Task Order awarded on 21 November 2017

485,000 Cubic Yards of available Pay Volume

Dancing Point - Swann Point to 26'+1

Tribell Shoal to 25'+1

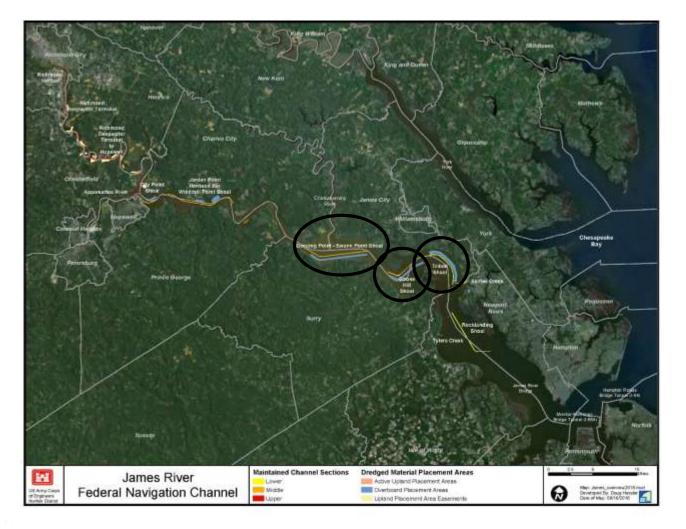
Condition Surveys on Demand

Engineering Research Development Center

Continued work on the James River to evaluate sediment transport and fate



DANCING POINT- SWANN POINT, GOOSE HILL, & TRIBELL SHOAL CHANNELS







FY 2018 Activities and Goals

- Task Order 7 pending Congressional appropriations
- Development and award of a new IDIQ contract prior to end of September 2018
- Continued Condition Surveys
- Schedule periodic Stakeholder meetings to prioritize dredging work based on limited funding scenario. (schedule execution of the Matthew Supplemental funds)
- Continued Engineering Research Development Center Work



A few notes on De-authorization of Inactive Projects and Backlog Prevention.....

- Water Resources Reform and Development Act of 2014
 Sections 6001 and 6003 provided a streamlined approach to de-authorize CW project elements, not yet constructed.
- General Criteria Five full fiscal years with no obligations (FY 2013 through FY 2017)
- James River elements to be de-authorized. Deepen the -25 foot channel to -35 feet and enlarge the turning basin at Richmond Deepwater Terminal.
- Project elements to be de-authorized on 1 October 2019





"Projects, Initiatives at RMT"

Mr. Patrick Jefferson

General Manager Multi-Use Terminal Operations
Virginia Port Authority

RICHMOND MARINE TERMINAL





OUR TERMINALS





INLAND TERMINAL ADVANTAGE



- Reduced emissions
- Chassis Pool
- Start/Stop for equipment
- Full Service container yard
- Ancillary services
- Strategic location to primary/secondary markets

RICHMOND MARINE TERMINAL





HOW WE MOVED THE CARGO: FY2017

RMT Barge Service



+ 37.6%



30

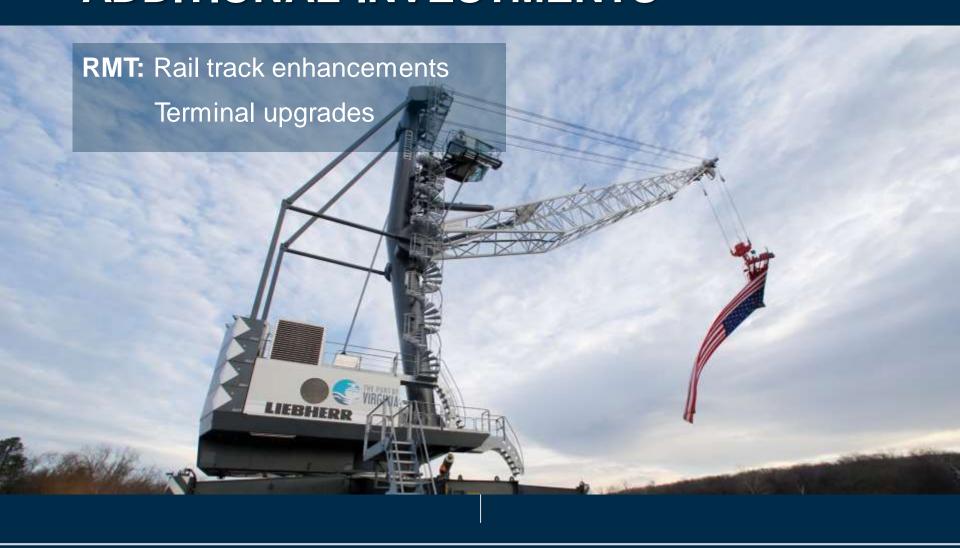


CAPITAL INVESTMENTS

- Mobile Harbor Crane
- Mobile Generator
- 52k forklift
- Container handling equipment



ADDITIONAL INVESTMENTS





Stewards of Tomorrow

32

RMT CURRENT CUSTOMERS

Customers currently utilizing barge

- Expeditors
- CrossGlobe
- > RI Rubber
- Lidl
- Carolina Ocean Lines
- > Evergreen Enterprises
- > Plow & Hearth
- > Avail Vapor
- > Scoular Grain

Customers located near Richmond to utilize barge

- Expeditors
- CrossGlobe
- > R1 Rubber
- > Lidl



WE ARE A CATALYST FOR COMMERCE.









"Model Results Dancing Point"

Dr. Tahirih Lackey

Engineering Research Development Center

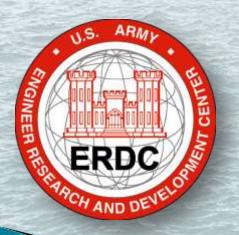
U.S. Army Corps of Engineers

James River Sediment Transport Modeling

Dr. Tahirih C. Lackey

James River Partnership Meeting

November 30, 2017



Project Team Members:

ERDC: Joe Gailani, Susan Bailey, Sung-Chan Kim,

Jarrell Smith, Dave Perkey, and Earl Hayter

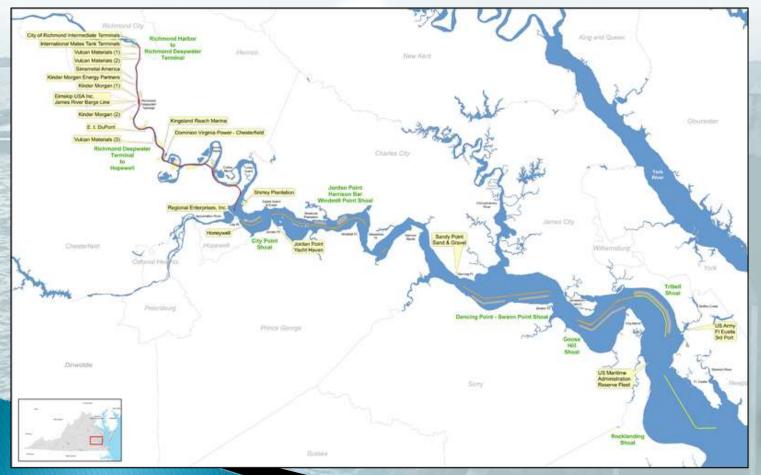
NAO: Chris Turner, Robert Pruhs, Michael Anderson,

Walter Trinkala



Background

The James River federal navigation channel is maintained to 25 feet deep and 300 feet wide from the mouth to Hopewell, Va., and 25 feet deep by 200 feet wide from the Richmond Deepwater Terminal to the Richmond Lock.





Why is Dredging James River Important?

"In 2013, more than \$66 billion in goods moved in and out of The Port of Virginia and a growing portion of that cargo is moving across The Port of Richmond.

Maintaining the channels of the James (River) that serve Richmond is critical to its health and expansion of that facility and the regional economy."

-Virginia Port Authority.



(U.S. Army photo/Patrick Bloodgood)



Dredging Concerns

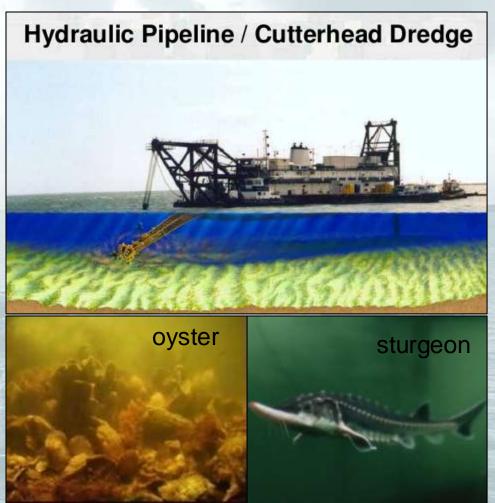
- We dredge about 1M CY of material on the James River annually
- When dredging cannot occur, load restrictions are placed on vessels, ultimately resulting in economic losses



Objective: Investigate channel shoaling in the area and determine if there are potential methods to reduce dredging and/or dredging costs without increased risk.

Initial Questions

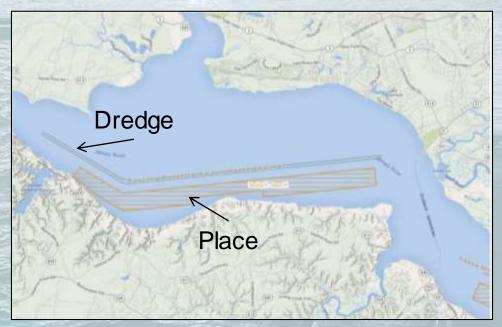
- Is the placed material going back into the channel?
- Is there significant risk to nearby species?
- If either of these answers is yes, do we need to investigate strategic placement options?





Previous Work: Dancing Point - Swann Point

- 60% of the 1M CY of material dredged comes from Dancing Point-Swann Point reach.
- This shoal needs to be dredged twice a year.





What Is Our Modeling Approach?

Short-term Concerns (2-4 weeks)

Hydrodynamic Modeling (CH3D)

How is the water moving? Velocity, Salinity, etc



When sediment is placed, how much is immediately available for transport?

Farfield Fate (PTM)

Where does the immediately available material go?

Long-term Concerns (6 months)

Hydrodynamic Modeling (CH3D)

How is the water moving? Velocity, Salinity, etc

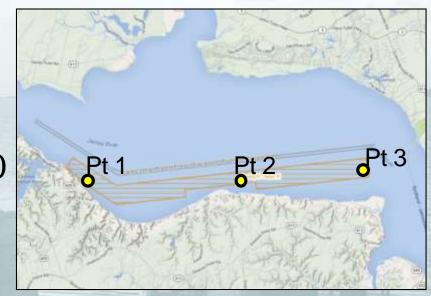
Morphology (LTFATE)

Does the mound migrate back into the channel?



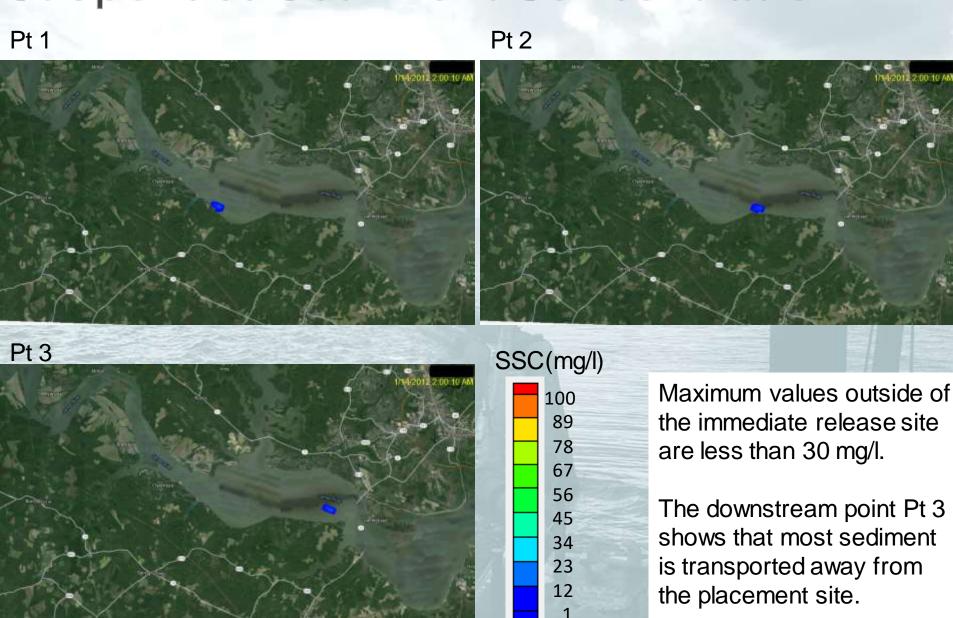
Farfield Fate Simulation Details

- A one month long simulation period was modeled for three pipeline locations using the Particle Tracking Model.
- Dredging occurs over the first
 17 days (approximately 100,000
 CY of material).
- The simulation continues for an additional two weeks to allow the finer sediment to either deposit or be transported away from the system.





Suspended Sediment Concentration



Determination of Mound Migration (Long-term concern)

- A six month simulation was run to understand morphology change after dredging.
- The USACE model LTFATE (Long-Term Fate) was used to simulate sediment transport
- ➤ LTFATE is a fully 3D hydrodynamic and sediment transport model.



Bed Morphology Change (g/cm²)

Six months after placement

Approximately 5% of placement mound sediments are eroded and about 3% of the placed material migrates back into the channel.

Erosion occurs at the eastern portion of the placement mound. This is counter-intuitive which suggests that sediment ultimately depositing there comes from another source.

The sediments appear to have moved to middle of the mound and across the channel as well.

Some sediment moves downstream of the mound and deposited in the southern shoals.

Conclusions : Dancing Point - Swann Point

Short-term concerns

- Results show that the majority of suspended material immediately released into the water column during placement remains in the placement area or is transported out of the area of interest downstream.
- Sediment concentration and deposition values remain relatively small outside of the placement area. Most likely too small to present risk in the area of interest.

Long-term concerns

- A small fraction of sediment from the placement mound migrates into the channel after placement.
- The fine-grained nature of these sediments precludes these small volumes of sediment from depositing in the channel where the currents are strong.

Regional Approach

- Prom the Dancing Point-Swann Point results, bulk of sediment placed does not get transported back to the channel within 6 month period.
- Most likely sediment is coming from another source
- Regional approach is needed to understand sediment transport.





Initial Questions

- Is the placed material going back into the channel?
- Is there significant risk to nearby species?
- If either of these answers is yes, do we need to investigate strategic placement options?

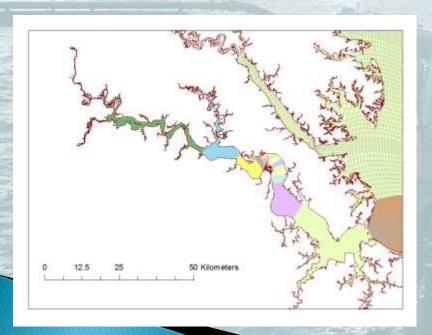
Follow-up Questions

- What is the impact of the upstream suspended load on sedimentation?
- Does sediment resuspended from one placement site impact other sites over time?
- What are the overall transport mechanisms in this system?

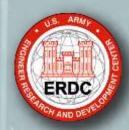


Scope of Work -FY17/FY18

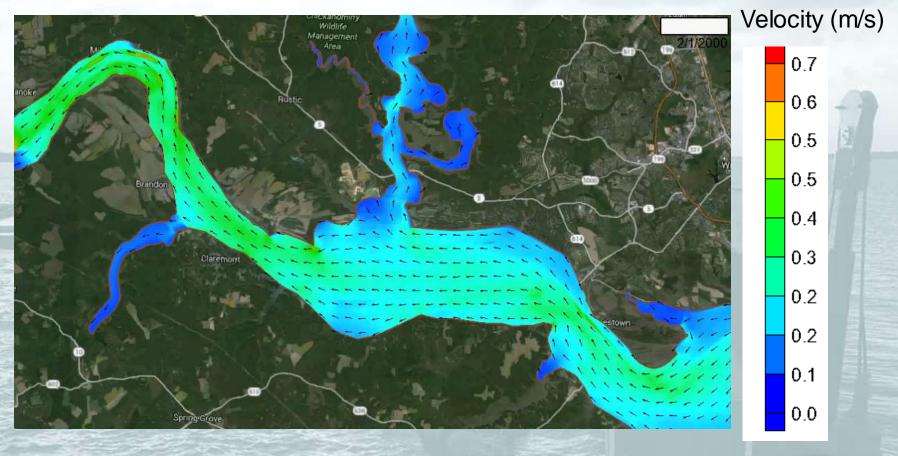
- 2 year hydrodynamic modeling of James River
- Field Data Collection effort for James River
- Risk assessment of dredging within Goose Hill placement site (short term modeling)
- 2 year sediment transport modeling simulation



Previously we focused solely on placed material and it's ultimate fate. Now we are looking at transport over the entire James River system



Hydrodynamic Modeling - Completed



Contours of near surface velocity (vectors show direction)



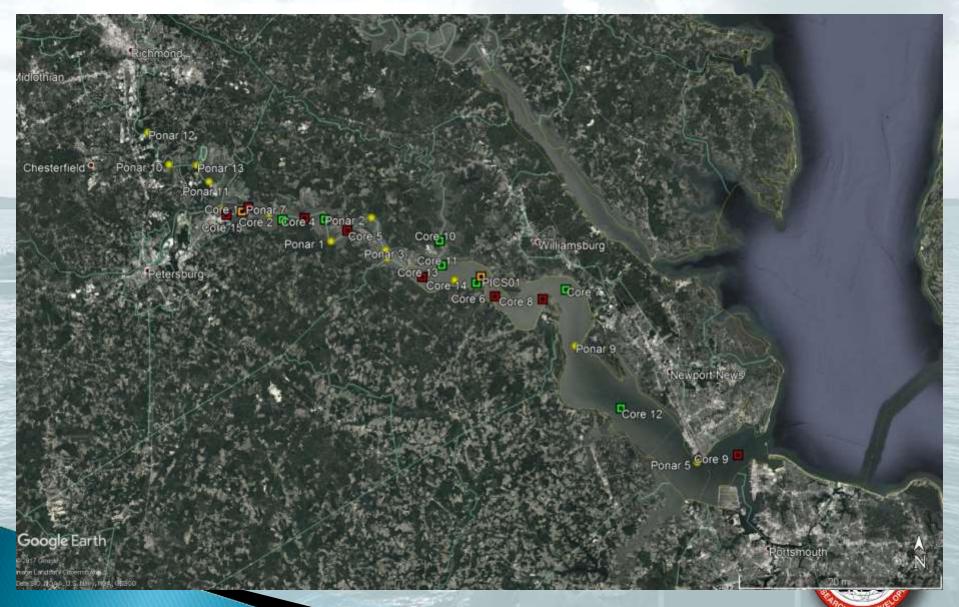
Field Data Collection - Completed

Fifteen day field data collection effort. Samples were collected over approximately 95 river miles.

- Surface grab samples
- Core samples erosion testing
- Particle settling velocity sampling
- Physical samples for concentration and grain size analysis



Field Data Collection



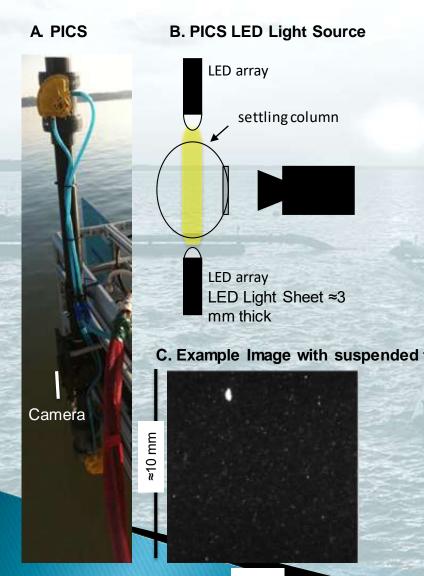
Field coring vessel







Settling Velocity Measurements



D. Settling Flocs from Station PICS01.

James River near Dancing Point-Swan Point
Shoal Channel



Aggregate Durability

- Testing the durability of eroded sediment clasts (clumps).
- Informs the study on the likelihood that eroded aggregates could travel long distances and redeposit in the channel.



BEFORE



Remaining Tasks for FY18...

- Complete analysis of Field Data
- Complete risk assessment of resuspended placed material at Goose Hill
- Complete sediment transport modeling of system



Collaboration for this effort...

- Norfolk District
- Regional Sediment Management (RSM)
- Dredging Operations and Environmental Research Program (DOER)

We understand the importance of the James River and are partnering to gather the information we need to help support the USACE navigation mission.



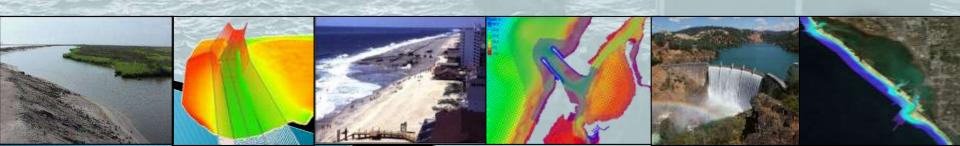


Regional Sediment Management... Est 1999, CERB Charge



A <u>systems</u> approach to <u>deliberately</u> manage sediments in a manner that <u>maximizes natural and economic efficiencies</u> to contribute to sustainable water resource projects, environments, and communities = <u>Healthy Systems</u>

- Navigation, Flood Risk Mgmt, Ecosystem, Emergency Mgmt:
 - Short and long-term sustainable, resilient solutions
 - Coastal and Inland
- Recognizes sediment as a valuable regional resource
- Work across multiple projects, authorities, business lines
- Tools and technologies for regional approaches
- Relationship building for decision making & implementation





Dredging Operations and Environmental Research (DOER)



Research to meet the complex economic, engineering and environmental challenges of dredged material management in support of the navigation mission

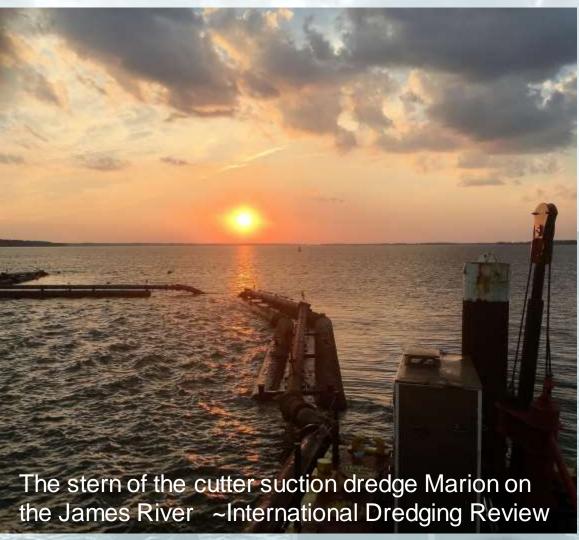
Provides project managers with knowledge and technology for:

- Cost effective operations
- Risks associated with management alternatives
- Environmental compliance
- Increased Beneficial Use, RSM, and Engineering With Nature

https://doer.el.erdc.dren.mil/



Questions?





"Overview Of Coast Guard Operations on the James River"

LCDR Barbara Wilk

Chief Waterways Management

U.S. Coast Guard Sector Hampton Roads



Sector Hampton Roads



James River Partnership Meeting November 30, 2017





Navigational Safety

- Marine Safety Information Bulletins (MSIB)
- Broadcast Notice to Mariners (BNM)
- Local Notice to Mariners (LNM)
- Sector Hampton Roads Command Center: 24/7
 - **757-638-8555**

Sector Hampton Roads Waterways Division

757-668-5580



Surry-Skiffes Creek Transmission Lines

14 November 2017 - 14 Feb 2018





Chickahominy-Surry Transmission Lines

- PAR Electrical Contractors will replace 4 structures along the existing Chickahominy-Surry Line
- Starting at Willcox Wharf in Charles City to Windmill Point in Prince George County
- December 15, 2017 through January 20, 2018, new transmission lines will be pulled into place (MSIB 17-130)
- No closure of navigation channel expected.
- Request 2 hour advance notice of vessels transiting the area





Aids to Navigation Maintenance

Responding toDiscrepantAids toNavigation









U.S. COAST GUARD



Search and Rescue: Fire at Richmond Yacht Basin

- Two 50' docks, 12-15 recreational vessels, and Henrico Fire Boat
- Coast Guard provided patrol boat and helicopter
- York, Virginia, and James City Fireboats responded
- No persons in water so then shifted to response as a Marine Casualty due to potential oil discharge.





Bridges

- Coordinate with Bridge
 Owners VDOT, local
 municipalities
- USCG Fifth District
 Bridge Branch: 30-day
 advance notice for work
 that requires closed to
 navigation
- Sector Hampton Roads disseminates info for any closures





Questions



"Current and Projected Vessel Perspective"

Mr. David Host

President Host Shipping Company

T. Parker host, Inc.



David Host November 30, 2017

Commercial Users of the James River





(Formerly Honeywell)











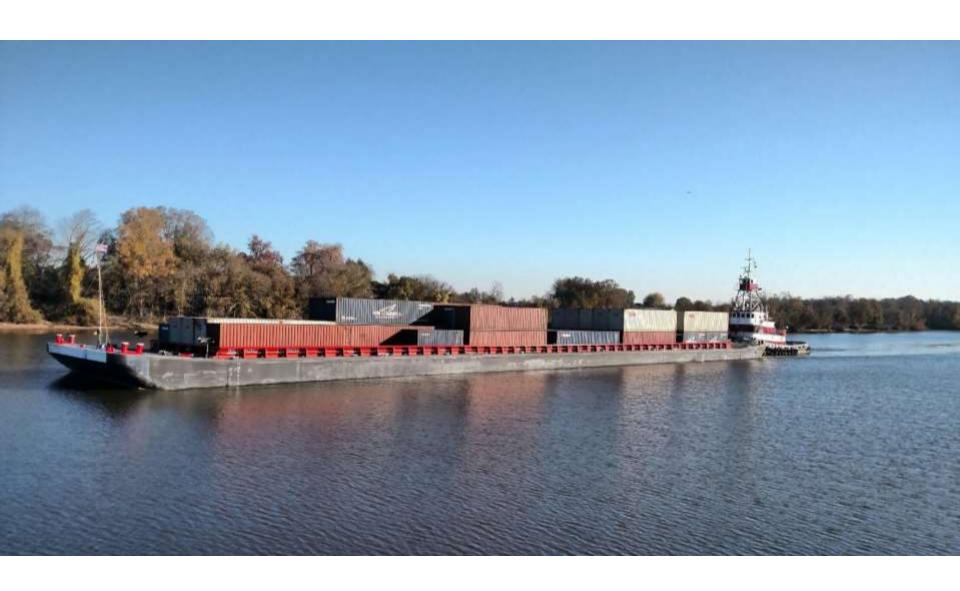


PHILIP MORRIS

LUCK#STONE

















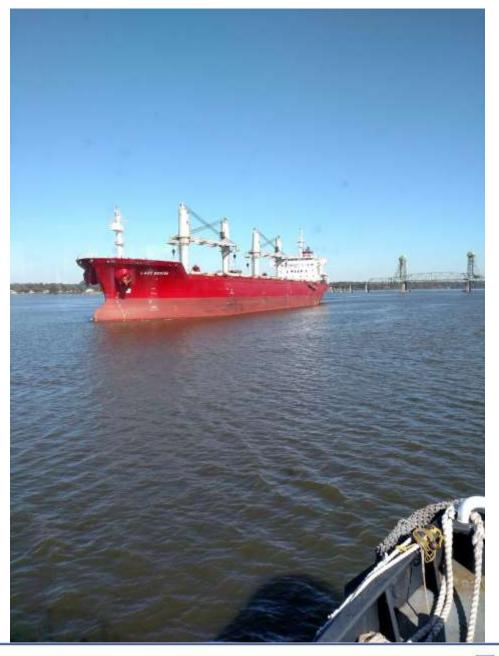


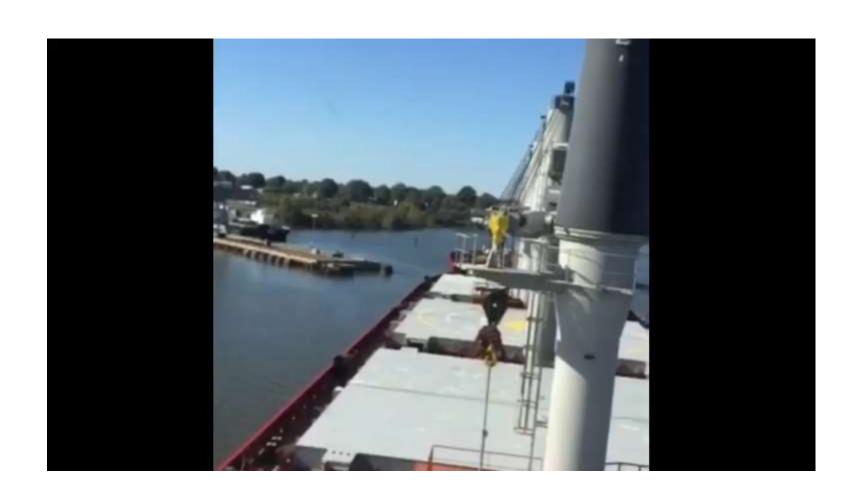




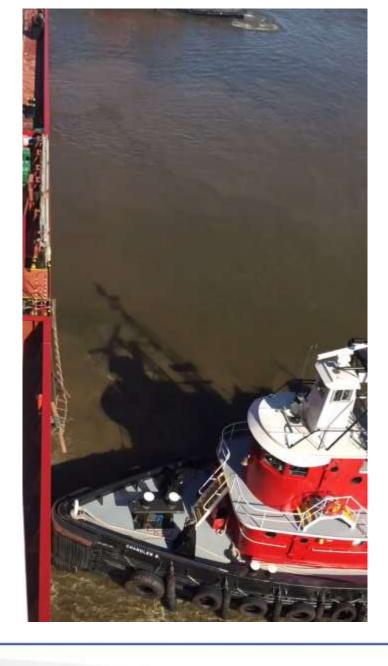




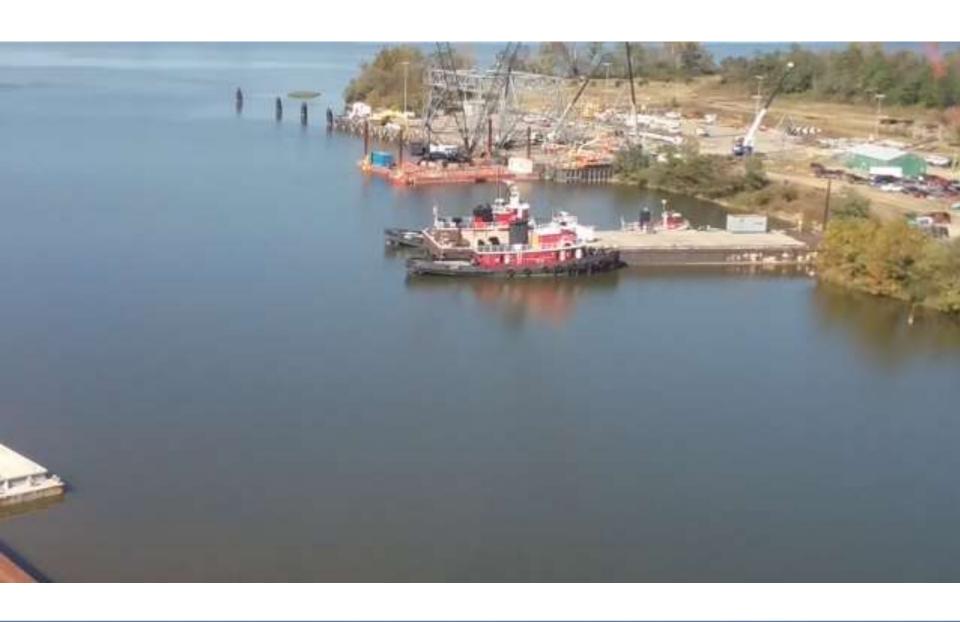












Annual Average: Roundtrips on the James River: Ships

Piers	Cargo	Total
AdvanSix	Ammonium Sulfate	
Associated Asphalt	Caustic Soda	
Dupont	Limestone	60

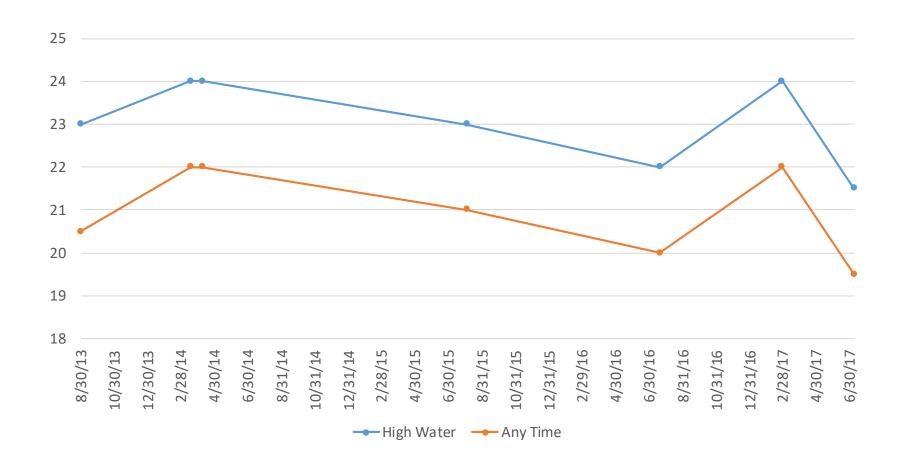


Annual Average: Roundtrips on the James River: Barges

Piers	Cargo	Total
AdvanSix	Oil	
Associated Asphalt	Ammonium Sulfate	
Dominion	Aggregates	
Dupont	Asphalt	
James River Barge Line	Caustic Soda	
Kinder Morgan	Containers	
Luck Stone	Dredge Spoils	
Port of Richmond	Grain	
	Gypsum	
	Limestone	
	Phenol	1,140



Dredge Restrictions





Current Situation

- Unrestricted navigation on the James River is critical to the movements of inbound and outbound cargoes being competitive to other options such as truck and rail.
- Major Virginia companies have set up their base operations basis the ability to move their product by ship and barge on the James.
- The James River is unique to other waterways in Hampton Roads.
- The nature of the River requires annual maintenance dredging of locations such as Dancing Point, Swann Point, Jordan Point, Windmill Point, Tribell Shoals, and Richmond Deepwater Terminal.
- All this has to be done during the 6 month environmental window.
- The long term wish list is a wider and deeper river to attract new business.
- However, in order to keep present users whole, annual funding to meet the current and future maintenance dredging needs is a must to restore the James to unrestricted navigation.



Conclusion

We all need to work together as a cohesive team to support the Army Corps of Engineers in order to meet the navigational needs of vessels on the James River, thereby increasing commercial benefits.



"Keynote remarks"

Mr. Scott Davies

Director of the Office of Ports & Waterway Development USDOT, Office of Marine Highways Maritime Administration

U.S. Department of Transportation Maritime Administration

James River Partnership

November 30, 2017

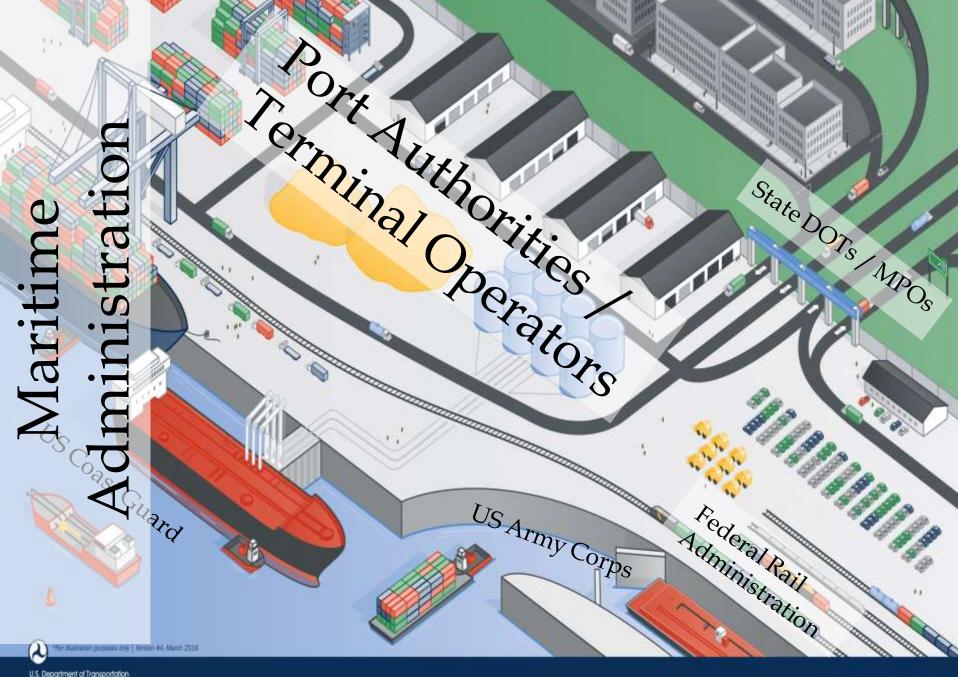
Integrating Waterborne Freight into the National Transportation Network



America's Marine Highways

Vision

The full integration of reliable, regularly scheduled, competitive, and sustainable Marine Highway services into the surface transportation system that are a routine choice for shippers.



Growing Congestion and the Marine Highway Solution

- International trade growth will only increase congestion
- Roads and railroads are near capacity and take decades to expand
- The U.S. moves about 6% of freight by water; Europe moves about 40%
- 29,000 miles of coastal and inland waterways that are operating well below capacity



U.S. Coastal & Inland Waterways







Critical Elements for Creating Marine Highway Services

- Proposed Projects must be located on a designated Marine Highway Route
- A public/private partnership between MPOs, vessel owners, labor, and freight owners
- A solid business case including analysis of competing modes (truck and rail)
- Adequate capital for start up and initial operations
- A coordinated promotion effort between key stakeholders

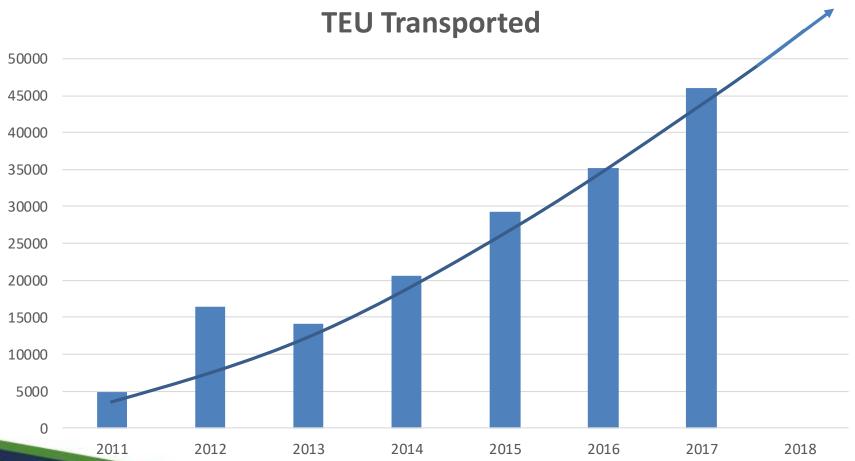
64 Express Marine Highway Service

 MARAD Marine Highway Grant Funds provided for purchase of barges, container handling equipment, and power pack.



- Service started in 2008
- Moves approx. 45,000 TEUs annually
- Provides relief of congested I-64 corridor

The 64 Express – a model of success





VPA & America's Marine Highway Program

- 2008 Weekly service between Richmond and Hampton Roads
- 2010 Awarded \$1.1M AMH Grant for barges & MHE
 - Weekly service continues 4820 TEU transported
- **2012** Service increased to 2X per week
 - 16,442 TEU transported
- **2013** Service increased to 3X per week
 - 20,618 TEU transported
- 2016 Awarded \$400K Grant for generator and forklift
 - 46,050 TEU transported



James River Reserve Fleet

MARAD's designated East Coast ship anchorage

Provides vessel husbandry services and military/civilian maritime training support (5000 training days annually)

Testing ground for maritime related technology (e.g., Lawrence-Livermore National Labs, Naval Post Graduate School, Massachusetts Institute of Technology)

Cited by the Hampton Roads Military and Federal Facilities Alliance (HRMFFA) as an asset to the Hampton Roads

James River Reserve Fleet

Contributes \$4.75M directly into the economy, which stimulates \$8+ million locally.

Contracts with more than 15 local vendors, including small and disadvantaged local businesses.

JRRF community contributions include an average of \$7k annually to CFC, and donations to food banks and other charities.

AMH Updates - The Rule

- America's Marine Highway Rule published Nov 30, 2017
 - Original Rule was published in 2010.
- Updated to reflect the legislative changes to the Program since 2010
 - Expands the definition of eligible cargo to include discrete units or packages that are handled individually, palletized, or unitized as well as freight vehicles carried aboard commuter ferries
- Renames 'corridors, connectors, and crossings' as 'routes'
- Clarifies criteria for Project Designation and Route Designation and discusses the evaluation process.
- Adds a sunset clause for Projects that will allow MARAD to request removal of Designation status from dormant projects. It also requires Project sponsors make a request to retain a designation after five years.

AMH Updates - Project Designation

- MARAD issued a Call for Projects via Federal Register notice dated April 18, 2016 with future submission dates of:
 - o December 31, 2017
 - o June 30, 2018
 - o December 31, 2018
- The Project Designation application process is found in the Marine Highway Rule.



AMH Updates - Grants

- \$5 million Notice of Funding Opportunity (NOFO) in early December, 2017
- Applications due by January, 2018
- Estimated award timeframe February, 2018
- 20% non-Federal match required
- Eligibility:
 - Applicants must have a Designated Marine Highway Project
 - Grant request must support, "the development and expansion of documented vessels and port & landside infrastructure", or
 - Planning grants that support the above criteria



Questions?

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The Power of Partnership

Savannah, GA

- Historic, charming city
- Key industry: Tourism
- With a port

Richmond, VA

- State capital
- Key industries: Finance, university, law, & government center
- With a port



"Closing Remarks"

Colonel Jason Kelly, PMP

Commander, Norfolk District

U.S. Army Corps of Engineers