U.S. Army Corps of Engineers
Civil Works Program:
National Navigation Update
World Trade and Transport Conference
New Orleans, LA

Edward E. Belk, Jr  PE
Chief, Civil Works Programs
HQ, US Army Corps of Engineers
Washington, DC

February 8, 2018
Securing Our Nation’s Future Through Water

Navigation - Commerce, Int’l Markets, Trade
USACE Operates 24,000 miles of Commercial Waterways; Generates $18 B / 500,000 Jobs Annually; Supports 20% of US Jobs, 1/3 of GDP; Transportation = Decisive US Competitive Advantage

Flood and Disaster Risk Reduction
USACE Prevents > $8 in Flood Damages per $1 Invested; 14,700 Miles Levee ➔ 12,700 Miles = Local O&M; 700 USACE Dams vs 87,000 National Inventory of Dams

Environment - Ecosystem Restoration and Environmental Stewardship

Hydropower - Inexpensive, Sustainable
USACE is the Nation’s Largest Renewable Energy Producer 25% of US Hydropower, 3% of Total US Electricity

Drinking Water
USACE Produces 6.5 Billion Gallons per Day

Quality of Life – Local Economic Engines
USACE is the No. 1 Federal Provider of Outdoor Recreation, Contributing > $16 B to Local Economies

Disaster Preparation/Response; Regulatory

20% US Jobs and 1/3 GDP in Waterborne Commerce

Weather – Related Disasters 3X in Last 30 years

50% of Americans Live w/in 50 Miles of Coast

404 Lakes / Rivers in 43 States

$361B in Total Damages 2003-2012, Prevented

Move 98% US Imports and Exports @ $2T / Year

Drinking Water for 96 Million People

25% US Hydropower and 3% Total US Electricity

Weather – Related Disasters 3X in Last 30 years

$361B in Total Damages 2003-2012, Prevented

Drinking Water for 96 Million People

25% US Hydropower and 3% Total US Electricity
**CW Challenges and Opportunities**

- **Infrastructure Investment = Global Challenge**

- **Corps Civil Works Portfolio: 3,000+ Operational Projects, with Replacement Value of Approx $268B**

- **Expanding Demands for CW Infrastructure Maintenance, Operations, and Capital Investment**
  - Civil Works New Construction Backlog $76B
  - Dam Safety Backlog (DSAC 1 & 2) $20B
  - Some Negative Perf Trends Across Portfolio
  - Aging CW Systems Facing ReCap Phase of Lifecycle
  - $2.5B Deferred Maintenance Backlog

- **Expanding Demands Serviced by ~$4.7B Annual Budget Nationally…..Requirements Significantly Outpacing Resources**
U.S. Ports and Inland Waterways: Vital to our National Economy

2 Billion Tons of domestic and import/export cargo annually
USACE Navigation Infrastructure Portfolio

- U.S. Marine Transportation Industry Supports ~ $2 Trillion in Commerce Annually
- More than 48% of Consumer Goods Bought by Americans Pass Through Harbors Maintained by Corps.
- 239 Lock Chambers at 193 sites
- 13,000 Miles of Coastal and Deep Draft Channels
- 12,000 Miles of Commercial Inland and Intracoastal Waterways
- 1,067 Coastal, Great Lakes and Inland Harbors
- # States Directly Served by USACE Channels & Waterways: 40
- 15% of U.S. Domestic Freight Carried by Water
- Over 1.3 Billion Short Tons of Foreign Goods Moved Through U.S. Ports/Waterways in 2015
- Over 900 Million Short Tons of Domestic Goods Moved Thru U.S. Ports/Waterways in 2015
- Moves 60% of US Grain, 22% of Coal, 22% Petroleum
- Capacity to Help Relieve Congestion on Other Modes as U.S. Imports and Exports Projected to Increase
- Nation’s Water Infrastructure is Aging, Performance is Degrading, Economic Benefits are Forgone
Our nation’s inland waterways and rivers are the hidden backbone of our freight network – they carry the equivalent of about 61 million truck trips each year. In many cases, the inland waterways system has not been updated since the 1950s, and more than half of the locks are over 50 years old. Bergees are stopped for hours each day with unscheduled delays, preventing goods from getting to market and driving up costs. There is an average of 52 service interruptions a day throughout the system. Projects to repair and replace aging locks and dredge channels take decades to approve and complete, exacerbating the problem further.

<table>
<thead>
<tr>
<th>Infrastructure Type</th>
<th>Add’l Total Investment by 2020</th>
<th>Protects $B in Exports</th>
<th>Protects $B in GDP</th>
<th>Protects Jobs</th>
<th>Protects Personal Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waterways</td>
<td>$16B</td>
<td>$270B</td>
<td>$697B</td>
<td>738,000</td>
<td>$872B</td>
</tr>
<tr>
<td>Airports</td>
<td>$39B</td>
<td>$54B</td>
<td>$313B</td>
<td>350,000</td>
<td>$361B</td>
</tr>
<tr>
<td>Electricity</td>
<td>$107B</td>
<td>$51B</td>
<td>$496B</td>
<td>529,000</td>
<td>$656B</td>
</tr>
<tr>
<td>Water/Wastewater</td>
<td>$84B</td>
<td>$20B</td>
<td>$416B</td>
<td>669,000</td>
<td>$541B</td>
</tr>
<tr>
<td>Roads</td>
<td>$846B</td>
<td>$114B</td>
<td>$897B</td>
<td>877,000</td>
<td>$930B</td>
</tr>
</tbody>
</table>
Civil Works Investment Trends
(Excludes Supplemental Funding)

Historic Budget and Appropriations Trends

FY 2018 Budget Amount $5,002M

INVESTIGATIONS
OPER & MAINT
MR&T
FC&CE
FUSRAP
ASA(CW)

Historic Budget and Appropriations Trends

$7,000,000,000
$6,000,000,000
$5,000,000,000
$4,000,000,000
$3,000,000,000
$2,000,000,000
$1,000,000,000
$0


CONSTRUCTION
REGULATORY
GENERAL EXPENSE
HISTORIC APPROPRIATIONS
Civil Works FY 2017 Approps Bill *

($ Millions)

Total: $6.038 Billion

by Account

Construction $1,876 M
Operation & Maintenance $3,149 M
Flood & Coastal Emergencies $28 M
Regulatory $184 M
Investigations $121 M
Miss. R. & Tribs. $362 M

by Business Line

Navigation $2,671 M
Flood Damage Reduction $1,731 M
Emergency Management $35 M
Water Supply $67 M
Water Supply $67 M
Navigation $2,671 M
Emergency Management $35 M
Water Supply $67 M

* Does not include supplemental appropriations
** Includes Office of Asst. SecArmy (Civil Works)
National Lock Portfolio Service Trends

Capital Investment Strategy (CIS)
Lock Mechanical Outage Trends (High Use Fuel Taxed Waterways)

“Assuring Performance and Reliability of Aging Water Infrastructure....”
24 x 365 x ~200 Sites = ~1,752,000 Operational Hours/Year
At 21,000 Hour Level, Locks are Unavailable Around ~ 1.2% of Time due to Mechanical Issues; So, Locks are AVAILABLE to Pass Commercial Traffic Almost 99% of the Time
National Dredging Program Trends

Total Dredging FY 2007-2016

Fiscal Year 2016 Total Dredging: 202 MCY @ $1,318 Million (~$6.51/CY)

- Maintenance Work: 186 MCY (92%) @ $1,036 Million (79%)
- Hurricane Sandy & Emergency: 11 MCY (5%) @ $191 Million (14%)
- New Work: 6 MCY (3%) @ $91 Million (7%)
Current Civil Works Realities

- Traditional Funding and Delivery Models Increasingly Inadequate, More Agile Processes and Thinking Now Necessary
- Administration, Congress and Partners Increasingly Demanding Change in both Federal Permitting and Delivery of Federal Programs
  - Historic Level of Congressional Oversight Engagements
  - Aggressive Administration Infra Posture, Bold Ideas in Play
  - More Partners Turning to Alternative Delivery Models
- Significant Challenges and Opportunities Possible for FY 18/19
  - Presumptive FY 18 Approps Could be Substantial (~$6B+)
  - Presumptive Storm Supp Could be Substantial (~$0-$12B)
  - Presumptive Admin Infrastructure Initiative Could be Transformative, With Any Funding Likely Linked to Reforms ($0-$20B)
- How is the Corps Responding?
  - Drive to Deliver on Projects, Programs, Commitments
  - Powering Down Decision-Making
  - Working Closely with and Listening to Partners
  - Actively Supporting White House Infrastructure Initiative
Closing Thoughts

• USACE Funding Continues to be Constrained and Addressing the Nation’s Infrastructure Investment Gap must be a Shared Federal, State and Local Responsibility.

• The Corps Doesn’t Deliver Anything by Itself… Critical that We Not Lose Focus on Our Partners, Stakeholders, and Our Commitments

• Navigation Investment is Essential for the Nation’s Global Trade and International Competiveness

• America’s Marine Transportation System infrastructure Must be a National Priority in Order to Secure Adequate Levels of Investment

• Navigation Investment is Key to National Economy, Jobs, and Exports!
CONSTRUCTION PROJECTS IN FY18

BUDGET

$5 M or More. Actual funding for these and other projects to be determined in FY18 appropriation.

Numbers in circles = $million budgeted.

BUILDING STRONG®
Navigation Challenges

- Constrained Funding, Imposes Performance Risk - can't maintain authorized/constructed channel dimensions and critical infrastructure
- Funding for low commercial use projects
- Increased cost of doing business
- Aging infrastructure
- Behind in channel depths
- Environmental Issues
  - Air and water quality requirements
  - Threatened, endangered, and invasive species
  - Dredging windows