

# Inland Waterway User Board – “*Making Inland Navigation Life Cycle Investment Decisions*”

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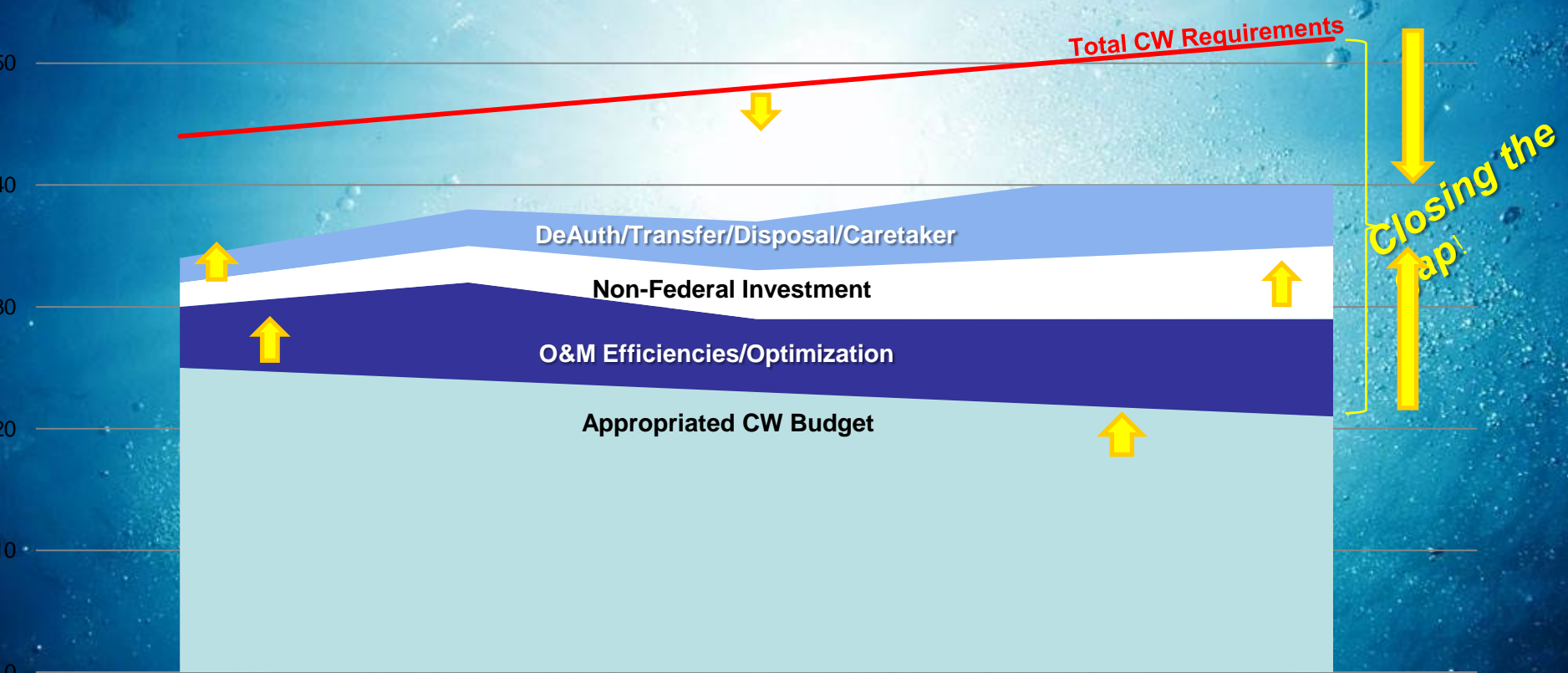
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US Army Corps of Engineers  
**BUILDING STRONG®**



# Optimizing O&M, Reducing Requirements, Increasing Efficiencies and Leveraging Other Resources



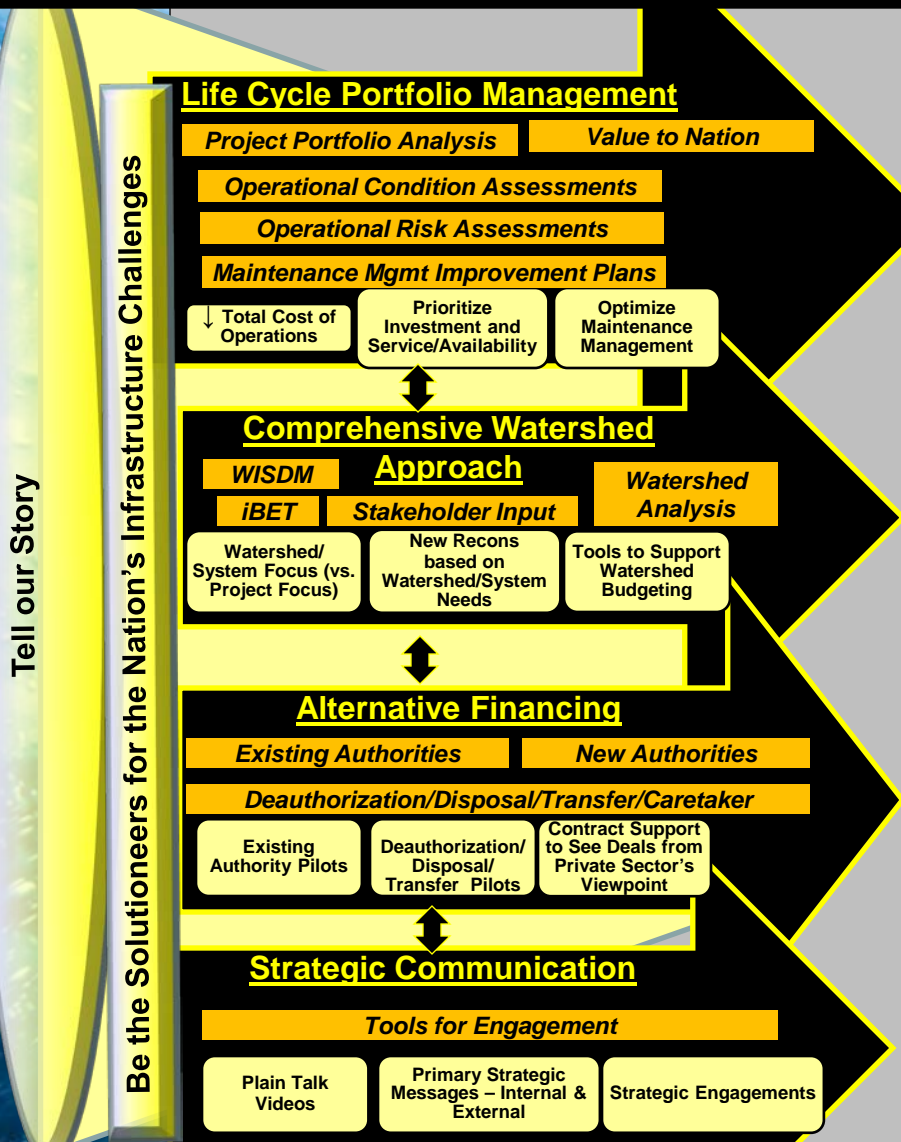


# USACE Infrastructure Strategy

## Vision Endstate

A Comprehensive watershed/ systems approach to planning/ managing and prioritizing investments in the CW Infrastructure portfolio so that it is relevant, resilient and reliable

## Lines of Effort



## Outcomes

- Develop a water resources investment strategy that:
- ✓ Optimizes investments in the performance of the USACE asset portfolio over its lifetime, including initiation, sustainment, restoration, modernization, and disposition.
  - ✓ Links Corps projects with federal and non-federal objectives and investments (VTN) within a watershed or system context.
  - ✓ Leverages alternative financing to sustain civil works mission services for existing infrastructure systems, and enhance mission services, as needed, to meet national and regional objectives.
  - ✓ Develops trusted working relationships and effective dialogue with Congress and stakeholders/partners who can influence and change how the Corps delivers Civil Works products and services to the Nation.

Provide reliable, resilient and sustainable infrastructure systems

# Then → Now

## CPBM 2010

1. Single Condition – *only* at Lock and Dam “top level”
2. “Risk of Failure” *not* considered
3. SCC Model *only* used for *Annual* Transportation Rate Savings

The future capital project business model, as shown in Figure 3-1, changes the status quo in two main areas. First, life-cycle asset management analysis will provide criteria for project prioritization, and second, the capital decision will use the prioritization to make decisions on where to best allocate constrained funding to provide for the best IMTS.

## Life Cycle Asset Management

1. Condition assessments for 166,000 components across entire IMTS!
2. Baseline Failure Curves!
3. Economic impacts from SCC Model considering various intervals of unscheduled outages from 1 to 365 days!

Can use all of the above to determine the ***Total<sub>N</sub> Risk Exposure*** for EACH Site in IMTS!!

***“Best IMTS” = Lower “Total<sub>N</sub> Risk Exposure” (TRE)***



# Spectrum of Investment Strategies

## Project Level

### Risk Exposure Levels

### Investment Strategy



HIGH Residual Risk Exposure  
LOW Operational Risk Exposure =

Strategic Maintenance  
Management



SIMILAR Residual Risk Exposure  
SIMILAR Operational Risk Exposure =

?? Maintain OR  
Restore??



LOW Residual Risk Exposure  
HIGH Operational Risk Exposure =

Major Rehab best  
option



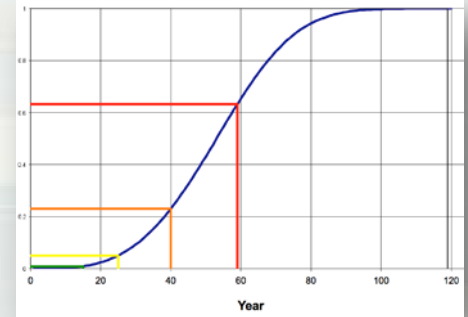
# Spectrum of Investment Strategies

## Asset Component Level

### The Basics:

What!

- ✓ Need to maintain/repair the most critical assets/components that...
- ✓ Are in the worst shape/condition that...
- ✓ Have the highest likelihood of failing and...



Where!

- ✓ Causes the highest impact on our customers
- ✓ Extending Service Life and inherently Improve Reliability

Components can have widely varying Service Lives which Influence the Life Cycle Investment Strategy

Longer Service Life BUT HIGHER Consequences and Costs in event of Failure

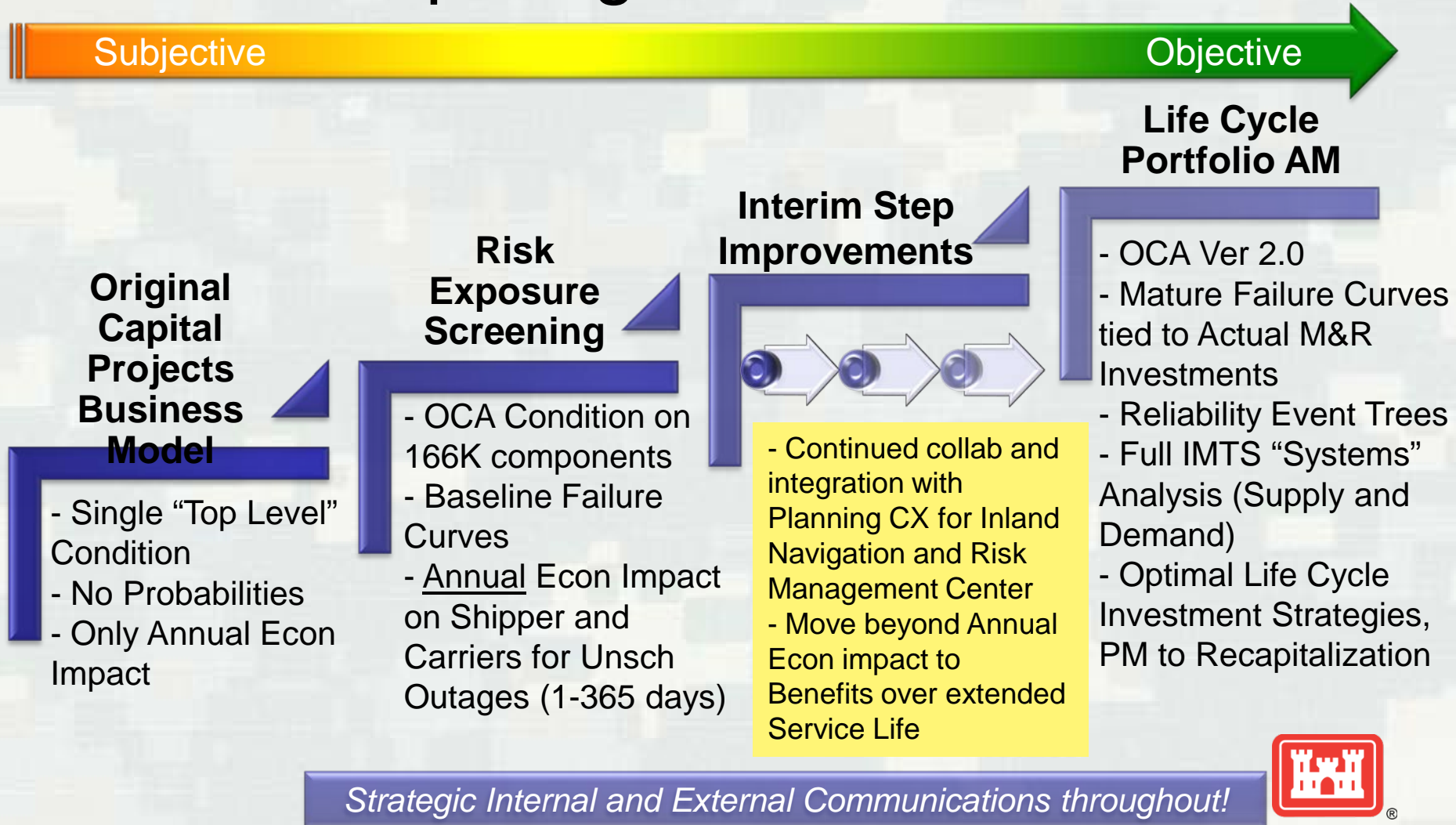
Year	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Concrete	A	A	A-	A-	B+	B	B-	C+	C	C-	D+	D	D	D-	D-	F+	F+	F	F	F
Operating Equipment	A	A-	B	C	C-	D	D-	F+	F	F-										

Shorter Service Life BUT LOWER Consequences and Costs in event of Failure

When!



# Delivering for the Present While Preparing for the Future



# Questions?

