



US Army Corps
of Engineers
Great Lakes &
Ohio River Division

System Reliability: Achieving Navigation Systems Acceptable Levels of Risk

Navigation Program Management - A Regional Perspective -

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Introduction

- **Achieving success**
- **Regional Navigation program approach**
- **Regional Long-term Navigation Management Plans**
- **Optimizing Major Maintenance**
- **The Journey**

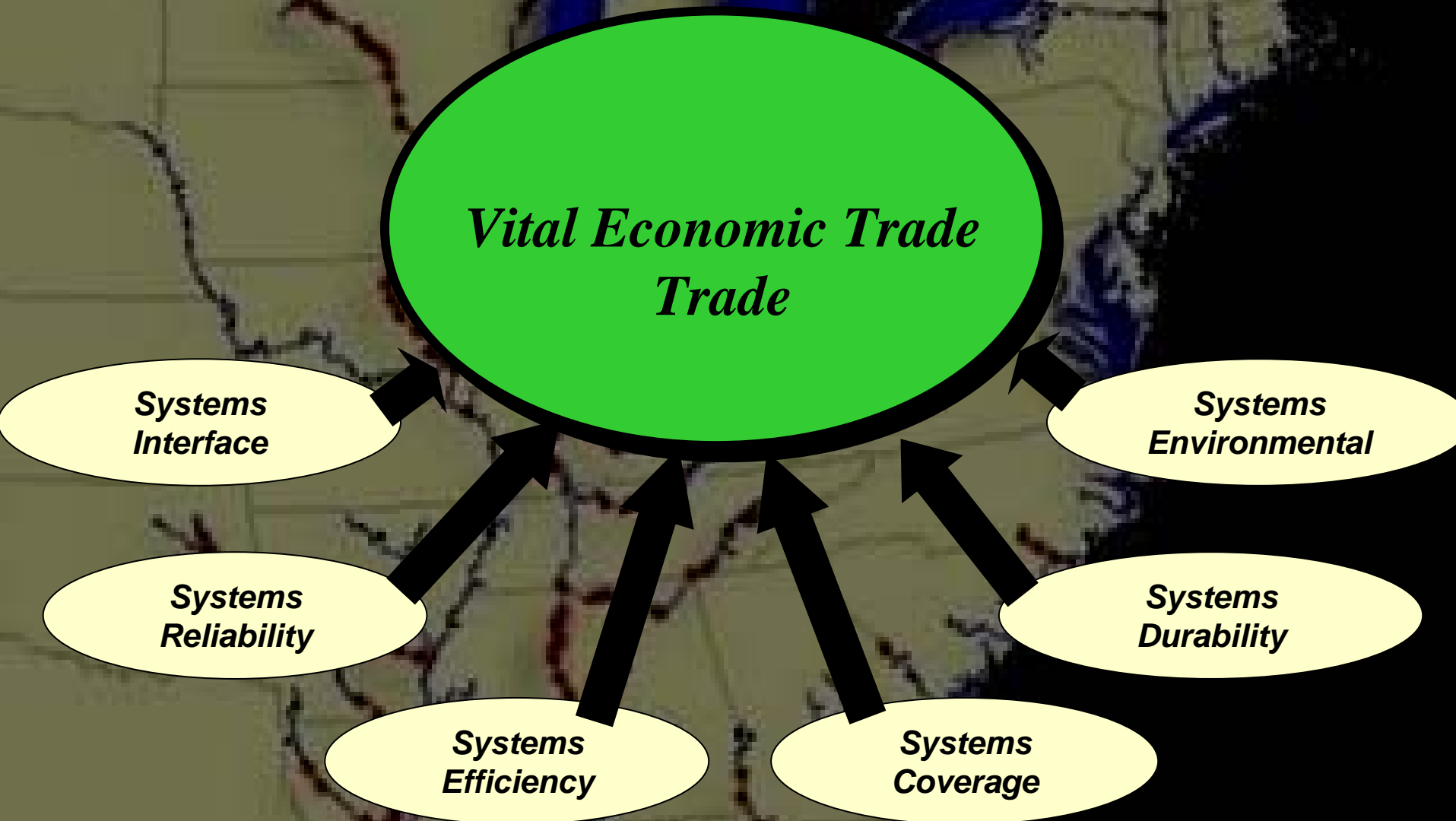
Achieving Success

Major Navigation Systems

Vision:	Crystal-clear system vision
Strategy:	Establish joint strategy for success
Goals:	Integrate management goals
Objectives:	Set & execute annual objectives

Each major system may achieve success
with a regional program supporting the National economy

Navigation Systems are Key to Trade Vitality



Optimizing a Successful Programmatic Approach



- Collaborative development
- Solid communication
- Global + regional vision
- National + regional synergy
- Dynamic improvement pattern
- Know value of what we do

Using Vision

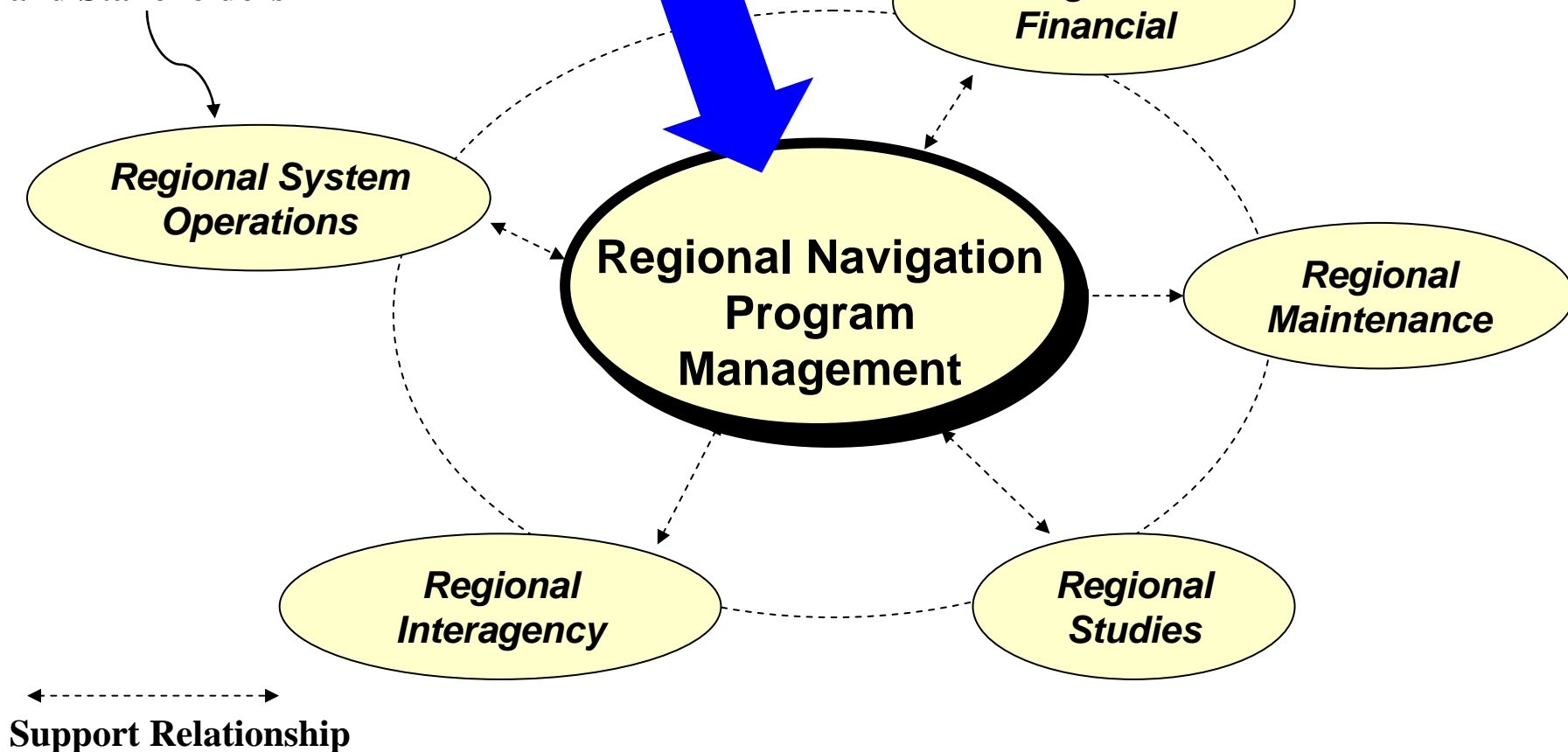
- **What should the systems be to support the economy?**
- **What is the vision for regional operational efficiency?**
- **Use global vision to formulate regional goals**
- **Visualize strength of inter-regional partnerships**
- **Visualize true value of what systems contribute**





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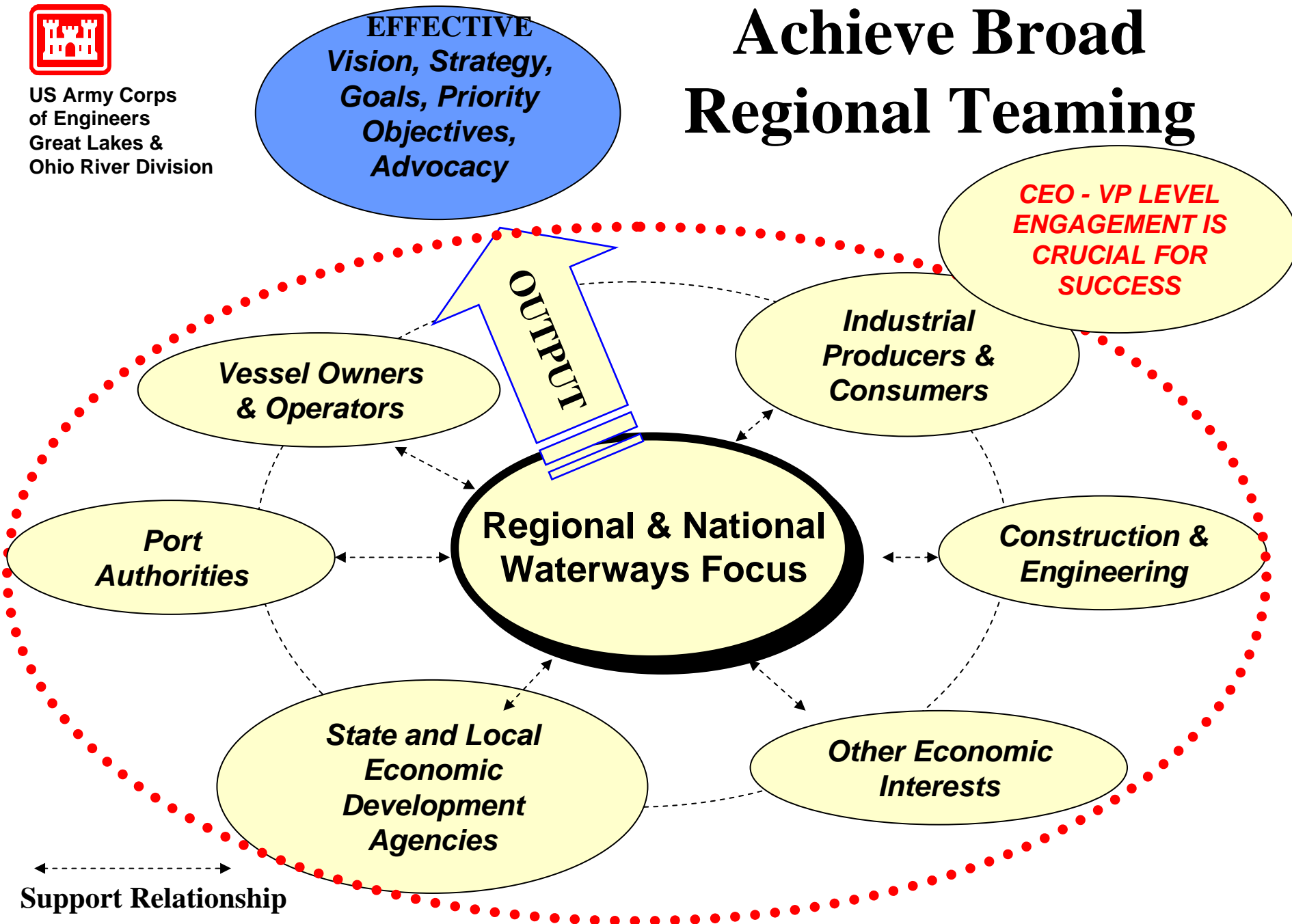
Typical Functional
Activity with USACE
and Stakeholders





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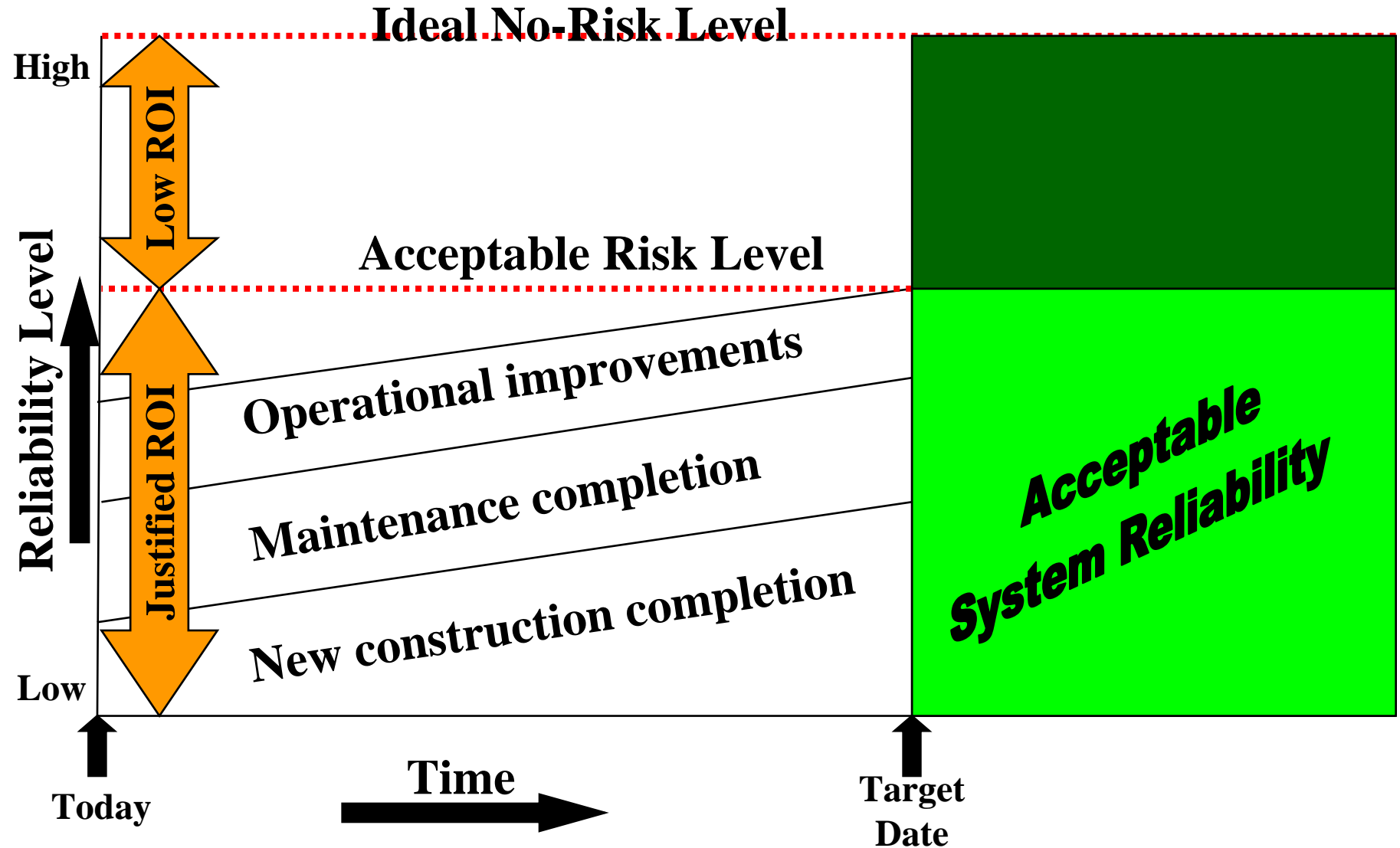
Achieve Broad Regional Teaming





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Achieve Reliability by Justified Investments



Ideal Navigation Systems Metrics



Reflect value to the Nation

Reveal return on investment

Balance a tenable level of risk with investment



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Ideal Metrics for Justified Investments

**Waterborne Transportation
Valuation**

+

Risk Assessment



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Intent:

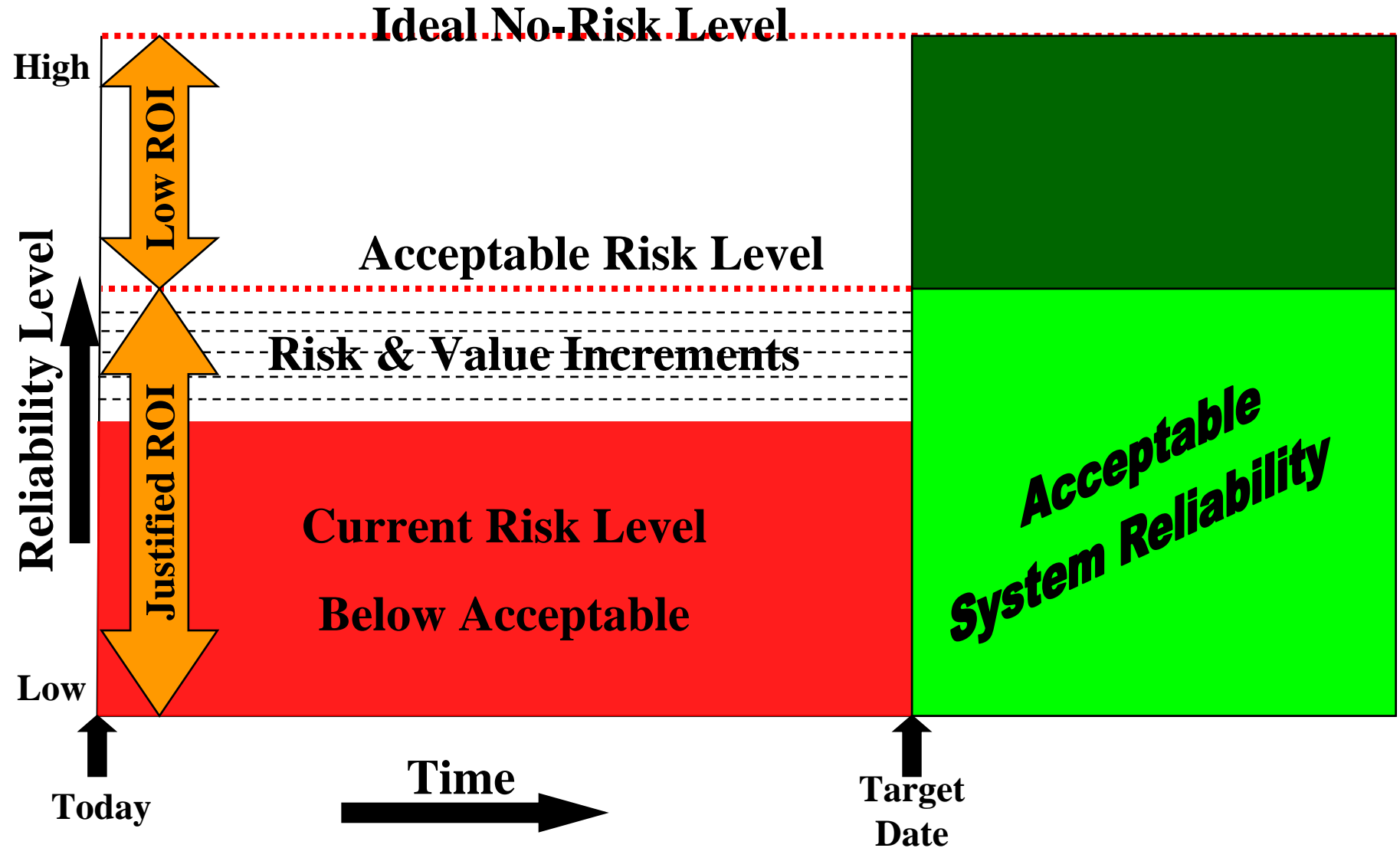
Long-term Management Plan

- **Compile rationale to optimize major navigation systems**
- **Develop budgetary recommendations for 10-year outlook**
- **For LRD:**
 - Ohio River & Tributaries Navigation System
 - Great Lakes Navigation System
- **Develop collaboratively with regional Navigation stakeholders**
 - gaining their perspectives
 - focus on maintaining the integrity of Navigation system
 - utilize risk assessment and valuation methodology



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Reaching Acceptable Risk Levels



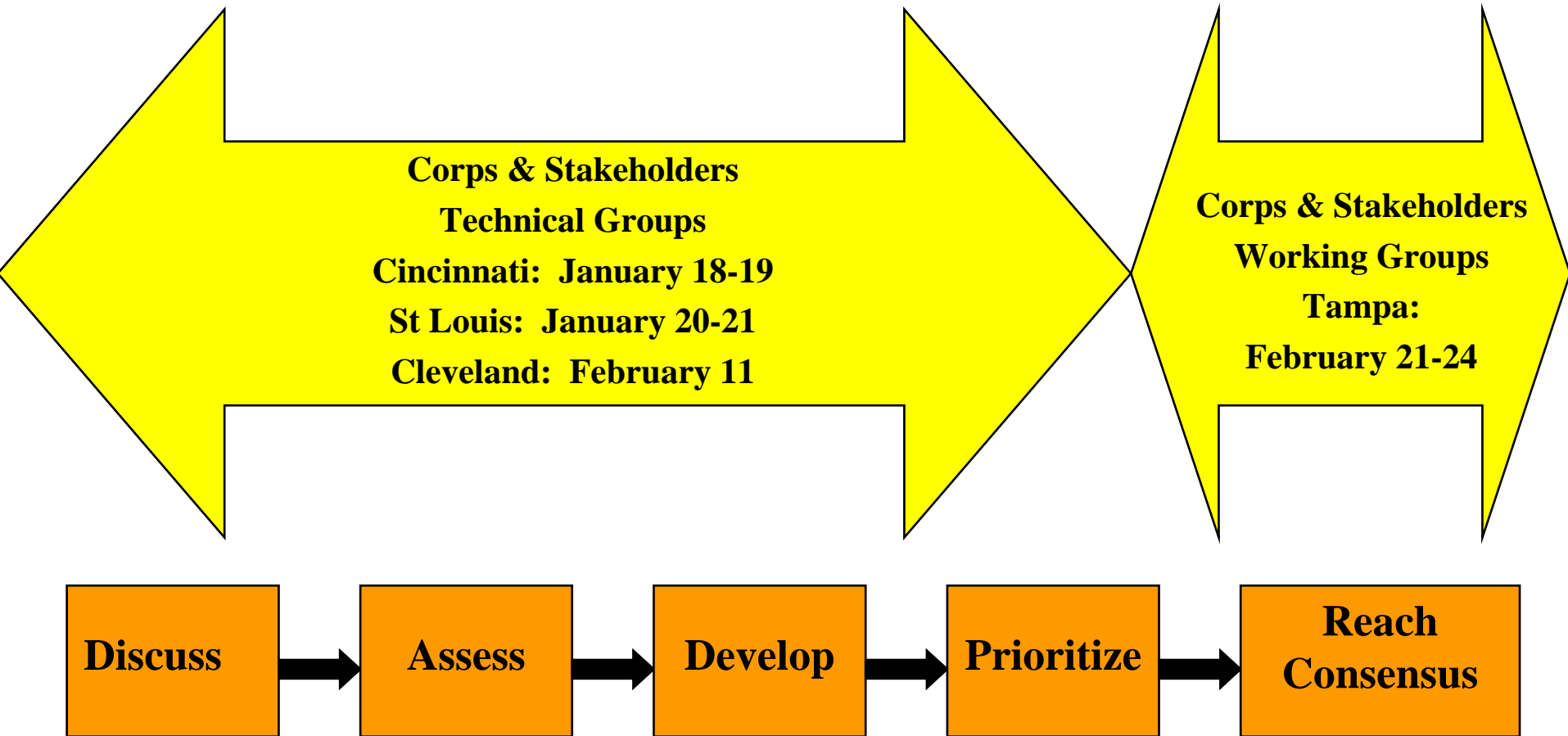


Optimizing Major Maintenance



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Regional Risk Workshops





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Risk Reduction Review Results

- **All projects assessed**
- **Considered likelihood & value of failures**
- **Created process to drive investments ranking**
- **Created component maintenance programs**



Achieving Reliability

Discuss

Assess

Develop

Prioritize

**Reach
Consensus**



**Risk Assessment Result:
Gate Replacement Program**



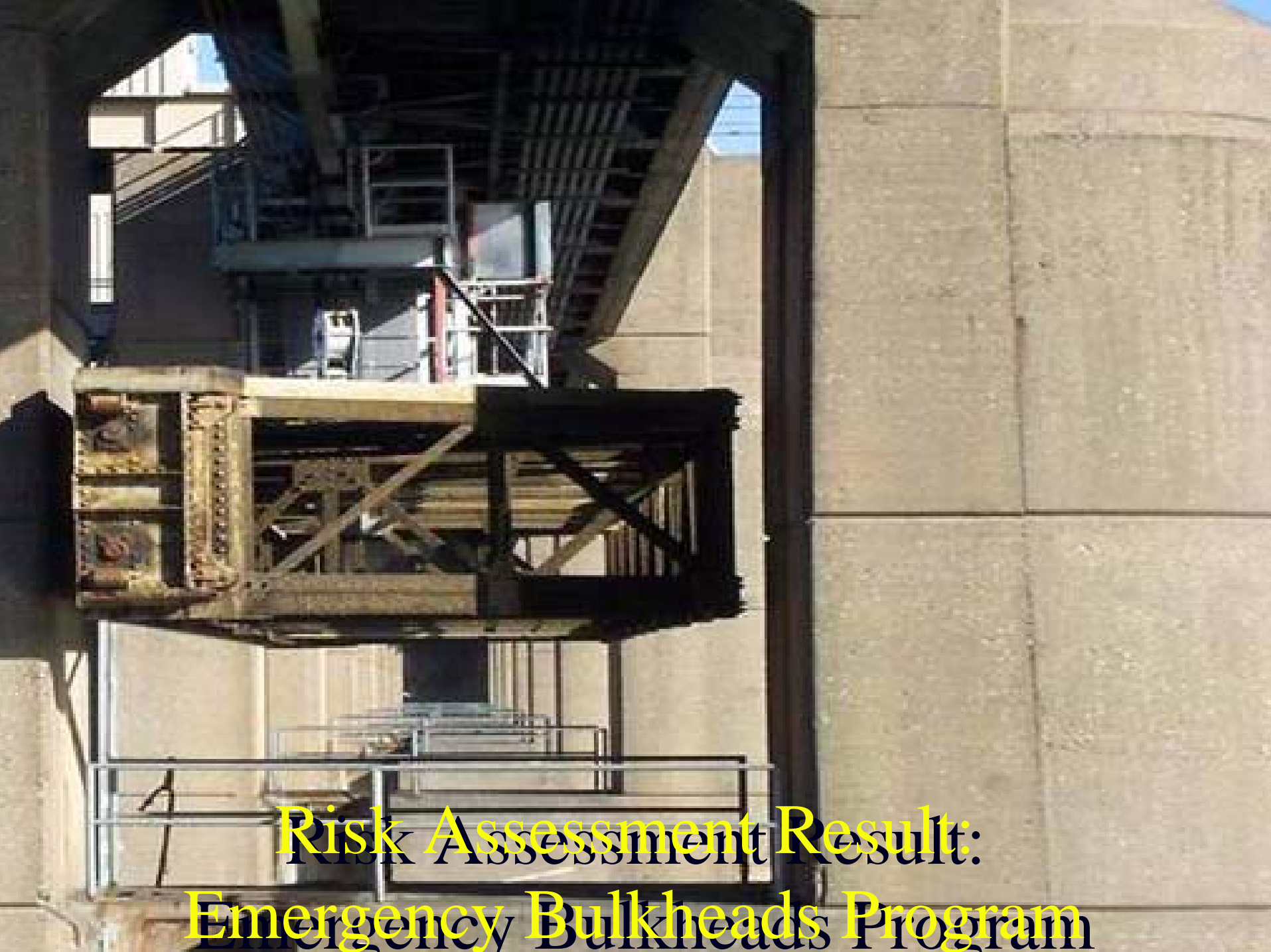
Risk Assessment Result:
Dams Scour Damage Program



Risk Assessment Result:
Valve Repair Program



Risk Assessment Result:
Operating Systems Repair Program



Risk Assessment Result:
Emergency Bulkheads Program



**Risk Assessment Result:
Structural Repairs Program**



Risk Assessment Result:
Vulnerability Recovery Program



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The Journey

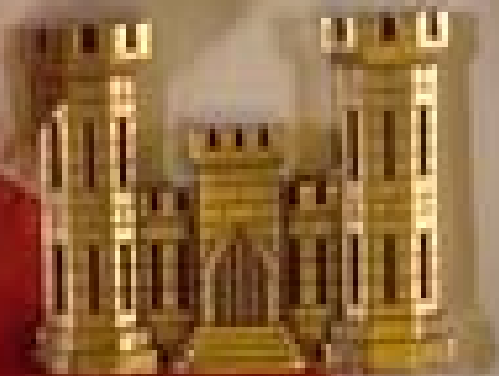
- Apply performance metrics on a project-site level
- Support budgeting for risk assessment & valuation metrics
- Implement uniform USACE-wide risk-value-cost based budgetary process



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The Journey

- Consolidate major Navigation systems O&M to facilitate system management
- Extend regional collaboration model USACE-wide
- Create long-term Navigation System management plans which define steps to achieve Acceptable Levels of Risk



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